School Segregation and Social Cohesion in Santiago

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Abstract

Segregation is a common feature of schooling in many modern systems. Children become separated along social lines in the schools they attend and the programs they access not only due to the influence of residential segregation but also to the effects of policies promoting privatisation, parental choice and student selection. The effects of educational segregation have largely been understood in terms of the negative effects on learning outcomes of disadvantaged students attending the most segregated schools. However, to what extent does segregation work to undermine social cohesion and social and economic integration? How does segregation affect the values, outlooks, dispositions and attitudes of students related to social cohesion? Using data from the International Study of City Youth, this study sets out to examine this issue through the outlooks of 10th grade students in Santiago, Chile. It uses the data to explore the association between social segregation and measures of quality of school learning environments, academic achievement, social and emotional skills, work and study plans, and student skills and dispositions towards social cohesion such as civic engagement and trust in others and institutions. The results show that in a highly segmented educational system like Santiago, and after more than 30 years of free market policies, the levels of social segregation in the secondary school system are associated with unequal opportunities for accessing economic security, and for developing the values, attitudes and dispositions that are necessary for social cohesion. The study reveals that social segregation can undermine social cohesion not only by reproducing educational inequalities, but also by diminishing the capacity of schools to provide rich socialization processes that can foster the habits of democratic citizenship and the formation of shared views and values.

Student Declaration

"I, Andres Molina, declare that the PhD thesis entitled Educational Segregation and Social Cohesion in Santiago is no more than 100,000 words in length including quotes and exclusive of tables, figures, appendices, bibliography, references and footnotes. This thesis contains no material that has been submitted previously, in whole or in part, for the award of any other academic degree or diploma. Except where otherwise indicated, this thesis is my own work".

Signature: 

Date: 24th of July, 2018

Dedication

To Macarena and Alonso, the lights of my life and companions in my journey.

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1. INTRODUCTION

> *"People of affluence and people of modest means lead increasingly separate lives. We live and work and shop and play in different places. Our children go to different schools.… It's not good for democracy, nor is it a satisfying way to live. Democracy does not require perfect equality, but it does require that citizens share in a common life. What matters is that people of different backgrounds and social positions encounter one another, and bump up against one another, in the course of everyday life. For this is how we learn to negotiate and abide our differences and how we come to care for the common good"* (Sandel, 2012).

Despite the view expressed by Sandel (2012) on the importance to social cohesion of providing opportunity for people from diverse backgrounds to mix and interact, the separation of students in schools based on race, gender, social background and academic skills is a common practice in many countries. In some school systems, students are separated into different schools and programs to address differences among students in levels of academic achievement and interests—separation that sometimes occurs quite early in schooling (see, OECD, 2013). In other school systems, policies of parental choice, sometimes sponsored by vouchers or public funding of private schooling, lead to students from advantaged backgrounds often avoiding schools in certain areas, promoting social and cultural segregation across schools (see OCED, 2017). One concern is that such segregation contributes to social gaps in student achievement (Card & Rothstein, 2007; Hanushek, Kain, & Rivkin, 2009; Thrupp, Lauder, & Robinson, 2002). However, there are reasons to believe, based on the view of Sandel, among others, that the effects extend well beyond achievement to other important outcomes of schooling such as the social and political integration of young people into community life, and effects on social cohesion.

Segregation based on family socioeconomic status has been identified as an important influence on how well students do in school (Card & Rothstein, 2007; Hanushek et al.,

2009; Thrupp et al., 2002). Within this work, researchers have measured the effects of school composition, or the mix of students in the classroom and the school, on student outcomes, after controlling for individual student characteristics (Thrupp et al., 2002; Willms, 2010). Although the evidence is not always conclusive, a number of studies show that disadvantaged students perform better when they attend schools with a high proportion of students from advantaged backgrounds than when they attend schools with a high proportion of students similar to themselves (Thrupp et al., 2002). At the same time, even though the differences can be small, the same studies show that there are no significant losses in achievement for students from advantaged backgrounds when they are in mixed settings. The findings indicate that the socioeconomic composition of schools has an impact on student achievement independent of individual socioeconomic status (see Levin, 1998, for a review). Given the links between school social intake and student outcomes, school segregation has been viewed as an important independent contributor to inequality.

The effects in school don't end at student achievement. Arguably just as important, but possibly less well understood, is the influence of segregation on school contexts and socialisation processes for students, and the potential consequences this may have on social cohesion. Schooling plays multiple roles in modern societies. It not only works to prepare students with the abilities and skills necessary to become skilled workers and thereby help societies increase their productivity, it also prepares future citizens willing and able to participate and contribute to renewing community life and promoting harmony. This is especially important in a world characterized by increased individualization and diversification (Jansen, Chioncel, & Dekkers, 2006), where social order is not obtained by consensus and community shared values, but by individuals capable of coping with diversity and dissensus (Jansen et al., 2006). Globalization, demographic change, migration, change in values and technological advances, among other things, are bringing new challenges to how well societies can remain cohesive and to how well they can equip individuals with the skills and requirements to cope with such challenges (Council of Europe, 2004; Dragolov, Ignacz, Lorenz, Delhey, & Boehnke, 2013; Markus, 2013; OECD, 2012).

Segregation potentially works to undermine social cohesion in two main ways. One is through effects on educational inequality, ultimately promoting unequal access to

economic security (a distributional effect of education on quality of life or lifestyle). The other is through its actions in working against the formation of shared views and values needed for democratic participation in a globalised and diversified world (socialisation effect).

A number of studies have looked at the educational consequences of segregation. Social researchers have examined this through the concepts of school composition and peer-effects. Coleman et al. (1966), for example, hypothesized that compositional effects occur where groups of higher SES students influence students from other backgrounds—peers influencing each other in terms of motivation, aspirations and attitudes towards education. This notion of the effect of student contact was how Coleman et al. (1966) explained their finding that student average test scores were higher in schools with higher proportions of advantaged students, and has inspired much research in the area. In a review of peer and composition effect studies in four countries, Thrupp et al. (2002) conclude that they show enough evidence to suggest that there is school compositional effects on student academic performance. Furthermore, a related line of research suggests that the compositional effect is partly due to the effect of student body on the work of teachers, the curriculum offered, school policies, and other school instructional, management and organizational processes (Barr & Dreeben, 1983; Bryk, Lee, & Smith, 1990; Thrupp, 1999)

In a similar manner, economists have been interested to measure if segregation across schools influences later life outcomes such as entry to higher education and labour market experiences such as occupations and earnings. Since the late 1950s, a number of studies show that individuals with more education tend to do better in the labour market (Card, 1999). Some early studies measured the direct effect of segregation on later life outcomes, and have showed that school composition can affect the success of disadvantaged students in tertiary education, and their chances of getting a well-paid job (Braddock & Dawkins, 1984).

Educational inequality can in this way produce and maintain social divisions or gaps in economic prosperity which work against social harmony. Setting aside the role of ideology and locus of control, those who end up with less, those forced to struggle, have greater reason for having feelings of social unrest, resentment, less trust in civic and economic institutions, and lower investment in supporting the current institutional arrangement of society.

The other main way that school segregation may undermine social cohesion is by working against the opportunity for young people from different backgrounds to 'rub shoulders' with one another and develop awareness and tolerance for difference and shared understandings of divergent points of view. Intergroup contact theory, elaborated by Allport (1979), the idea that by bringing groups together under positive conditions one can improve both attitudes towards outgroups and intergroup relations, has inspired a collection of empirical studies of the specific mechanisms through which segregation undermines social cohesion. From this perspective, contact provides the basic condition for individuals to form, as much as possible, wider social perceptions and avoid prejudice and discriminating attitudes towards others. Diversity at school provides students the direct experience of contact with students coming from out-groups, setting up the basic condition to reduce prejudice and group conflict. The mere fact of contact is not enough to promote positive individual and social outcomes. Allport (1979) states that contact is better equipped to do so when individuals are engaged equally in the situation (equal status), work towards common goals, and contact is institutionally supported and sanctioned. If these conditions are met, knowledge and acquaintance with members of other groups promote sounder beliefs about them, leading to more tolerant and friendly attitudes (Allport, 1979).

Hargreaves (1976) expresses quite well the importance of contact and diversity in the study of educational segregation, and how much societies depend on integration for social cohesion:

> *"Once in school children become part of a social system and are subjected to a variety of influences. Most important of all, they become members of a group of age-mates… these groups have values, norms and status hierarchies which every member must take into account… adolescence is a period in which the search for a self-identity is most marked, and in which many basic social attitudes are acquired. Streaming or ability grouping is seen as "status deprivation of low stream boys". Segregation of pupils into streams create subcultures who perceive each other as the negative reference group, creating hostility and lack of communication between the groups"* (Hargreaves, 1976).

Several studies have shown how intergroup contact reduces intergroup prejudice and promotes positive intergroup attitudes (for a comprehensive review see Pettigrew and Tropp, 2006). In general terms, the studies suggest that frequent contact under the correct conditions between members of different groups reduces intergroup threat perceptions (e.g. Tausch, Tam, Hewstone, Kenworthy and Cairns, 2007) and anxiety, and increases empathy (Pettigrew & Tropp, 2008). Some studies show that inter-ethnic or inter-racial contact between students in schools can lead to inter-ethnic or inter-racial friendships helping to reduce prejudice, and that the higher the levels of contact between students from different social and racial backgrounds, the higher the positive effects on attitudes towards different others (OECD, 2010b). Another study found that schools that do not segregate students internally, as opposed to schools that implement pedagogical differentiation such as ability grouping and tracking, are linked to less disparities in values such as ethnic tolerance and patriotism across ethnic and social groups (Janmaat & Mons, 2011). There is evidence to support the view that diversity leads to positive effects on intergroup attitudes and reduces intergroup threat perceptions (Hewstone, 2015).

From a socio-political perspective, empirical research on this front has found that when schools promote diversity and positive intergroup contact, students are not only better prepared to develop positive attitudes towards others, but that it also fosters collaboration, communication skills, the capacity to accept others and to handle difference and diversity (Bjørnskov, 2007; Mickelson & Nkomo, 2012). Similarly, other studies suggest that social diversity at least provides a richer context for learning where students acquire important social values such as tolerance through mixing with others from different socioeconomic and cultural backgrounds, supporting attitudes related to social justice (McDonnell, Timpane, & Benjamin, 2000; OECD, 2010b). From this perspective, learning in diversity prepares students to embrace and value diversity and equality, attributes helpful for coping with the new challenges of the world and for becoming an active citizen. Segregation potentially limits access to perspectives and knowledge that arise from diversity and contact with different others, placing at risk the process that can help build competencies for citizenship such as mutual understanding, mutual respect, appreciation of diversity and tolerance (Anderson, 2007; Satz, 2007).

Researchers have argued that segregation, through the mechanisms outlined above, serves to undermine the social cohesion needed to bind citizens to one another and to society as

a whole. Given the evidence on the effects of segregation on school outcomes, and the mechanisms hypothesised as linking segregation to social interaction, the current study posits that high levels of social segregation in schools are likely to undermine social cohesion. Consequently, this study examines the relationship between social segregation in schools and levels of social cohesion, and it does so in the city of Santiago, Chile.

The case of Santiago

There is good reason to look at Chile in a study of the relationship between school segregation and social cohesion. As a Latin American country, Chile shares some similar struggles with other countries of the region. It is heavily marked by the heritage of the Spanish occupation, and by political conflicts around issues of class and the distribution of power in a context of marked inequality and poverty. However, the implementation of a major neoliberal policy reform package during the early 1970s, which saw the implementation of among other things a voucher system of school funding contributing extensive parental choice and privatisation, separates Chile from its neighbours. The configuration of the relationship between the state, the market and civil society shaped by sustained neoliberal transformation in Chile coexists with the continuity of traditional forms of social ties and the historical concentration of economic and political power in the country. This combination has created a challenging context for the promotion of social cohesion. The experience in Chile, of more than 35 years exposure to a market-driven model of school choice in which parents can use a voucher to enrol their child at either a public or private school of their choice, is unique in Latin America and in the world more broadly.

There seem to be two major implications for social cohesion of the reliance placed in Chile on market forces as the engine of educational choice and provision. First, thanks to these changes, Chile has developed higher levels of inequality in income distribution, wealth concentration, employment, salaries, and access to education, health and social benefits (see PNUD, 2007, for a recent review), which work as fundamental structural barriers to the development of social cohesion (Green, Preston, & Janmaat, 2006; Jenson, 1998; Villatoro, 2007). These aspects of economic and social life have deteriorated since the introduction of the neoliberal reforms, and while social inequality, privilege and exclusion have been historical features of the Chilean society, they were enhanced by the neo-liberal policies of the 1970s.

Second, these developments have created a highly segregated education system in Chile. Education potentially is a catalyzer for social cohesion when it contributes to both greater equality of opportunity and providing a space for socialization in diversity. Educational segregation runs counter to both of these features. The analysis of the Chilean education system, presented in this study, reveals marked social segregation of students especially in Santiago. Social segregation in the education system of Santiago therefore threatens the role of education as a vehicle of social cohesion.

International comparisons involving Chile reveal a very segregated educational system along socioeconomic lines. Several studies have concluded that the Chilean system has become one of the most privatized and segregated educational systems globally (Valenzuela, Bellei & De los Rios, 2010). In their first review of the national policies on education in Chile, the OECD (2004) concluded that despite great progress in many areas of education given the "structural constraints" of the country, it was a system consciously class structured, highly stratified and one which concentrates students coming from the same socioeconomic background into the same schools. Since then, the OECD has monitored the level of segregation in the Chilean education system. In the report of PISA 2009, the OECD (2010a) estimated that among OECD countries and partners Chile had the highest percentage of disadvantaged students attending schools where disadvantaged peers were overrepresented, except for Macao-China. The percentage was 81 per cent, compared to 58 per cent in Australia, 61 per cent in the United States, 48 per cent in the United Kingdom, and 51 per cent across OECD countries on average. On the other hand, Chile shows one of the highest concentrations of students from the top 25 per cent of the socioeconomic index in schools where advantaged students are overrepresented, with a rate of 76 per cent, compared to 56 per cent in Australia, 61 per cent in the United States, 48 per cent in the United Kingdom, and 53 per cent on average across OECD countries. In the more recent results using PISA 2015, the OECD (2016a) reports that Chile had one of the lowest positions in the social inclusion index[1] among OECD country members and partners, after Argentina, and Peru and Indonesia. Chile shows one of the highest amount

[1] The index of social inclusion is calculated as 100*(1-rho), where rho stands for the intra-class correlation of socio-economic background, i.e. the variance in the PISA index of social, economic and cultural status of students between schools, divided by the sum of the variance in students' socio-economic background between schools and the variance in students' socio-economic background within schools.

of variation between schools in student socioeconomic background, ranking 18th out of 65 countries in 2009 (OECD, 2010a), and 5th out of 73 countries in 2015 (OECD, 2016a).

Research conducted in Chile using national data reveals results consistent with those of the OECD. Using information on student background from national standardised test score data (SIMCE[2]) for 4th, 8th and 10th grade students from 1999 to 2008, Valenzuela, Bellei and De los Rios (2013) found that segregation in Chile had increased over time. For example, using the Duncan Dissimilarity Index where 0 represents the absence of segregation and 1 is total segregation, Valenzuela et al. (2013) found that for 4th Grade students in the bottom third of the SES scale the score was 0.51 in 1999 and grew to 0.54 in 2008. The estimated value was slightly lower for equivalent 10th grade students but also grew, rising from 0.43 in 2001 to 0.50 in 2008. The authors also found that socioeconomic segregation was higher for students coming from the top 30 per cent of the SES index at all levels and years: the dissimilarity index values for 10th graders were 0.53 in 2001 and 0.59 in 2008.

Within Chile, there is good reason to consider Santiago in a study of social segregation in the school system. Chile's capital and largest city, Santiago, accounted for nearly 7.5 million inhabitants in 2017, representing around 40 per cent of the nation's population. As in many other Latin American countries, most of the Chilean economic, political and cultural activity is centred on the capital city, a condition that has been part of Chile's socio-political and cultural scene since the creation of the Republic in the early 1800s. In 2015, Santiago accounted for 46 per cent of the total GDP, and ranked third in GDP per capita, after the two mining regions of Antofagasta and Tarapacá. According to Ministerio de Desarrollo Social (2015) the metropolitan region (including Santiago) had the highest average household income in Chile (USD 1,380 per month, approximately), significantly higher than the country average (USD 1,065 per month, approximately). Additionally, Santiago is one of the six regions with the lowest percentage of people living in poverty (7.1 per cent, in comparison with 11.7 per cent at the national level in 2015).

[2] Acronym for Sistema Nacional de Medición de la Calidad de la Educación (National System to Measure Educational Quality), the national Chilean agency responsible for administering standardised census and sample tests in Chile to measure school and student academic achievement in several year levels and subjects.

However, despite the economic prosperity of Santiago compared to other regions of the nation, it scores highest among the Chilean regions on the Gini coefficient for rent incomes, meaning that although economic conditions are relatively better than in other regions, it is one of the most unequal in terms of income distribution. Given that poverty is not comparatively high in Santiago, its unequal income distribution is driven by a high concentration of elite families in some neighbourhoods of the city. While all big cities in Chile exhibit residential segregation (Sabatini, Cáceres, & Cerda, 2001), Santiago shows the highest levels compared to all big cities in the country, with a value of 0.61 in the Dissimilarity Index for the wealthiest group, and 0.42 for the two most disadvantaged groups (PNUD, 2017). Many of the wealthiest families in Santiago reside in only a few areas of the city, while some of the lowest income families concentrate in the outskirts of the city under impoverished conditions (PNUD, 2017).

In 2015, Santiago had 26 per cent (12,001) of the total number of the nation's primary and/or secondary schools, and more than 40 per cent of total student enrolment. The situation in tertiary education is similar: 28 per cent of tertiary institutions in Chile (around 380 in total) are located in Santiago, providing more than 38 per cent of master and doctoral programs offered in Chile. From approximately 1,230,000 students enrolled in tertiary education in 2015, 48 per cent were studying in Santiago.

The creation of a market in education through vouchers has led to significant change in Santiago. Although privatisation has occurred across all areas of Chile, the figures for Santiago are especially striking. According to official figures published by *Centro de Estudios MINEDUC* (2016), of a total of 3,084 primary and secondary schools in Santiago in 2015, 24 per cent were public (municipal) schools, 66 per cent were Private Voucher schools and 9 per cent were Private Fee schools (private schools that are fully funded through fees and do not accept vouchers). The distribution of student enrolments in Santiago followed the same pattern: 27 per cent of students in Santiago attended municipal schools, a further 61 per cent enrolled in Private Voucher schools, and 12 per cent enrolled in Private Fee schools. In all, 73 per cent of students in Santiago studied at a private school. The availability of private education was lower in the rest of the country, where Private Voucher enrolment reached 51 per cent and Private Fee only 5 per cent in 2015.

Santiago shows high levels of student segregation by type of school, concentrating the wealthiest families in traditional exclusive Private Fee schools which are located in the same segregated areas where they live, while aspirational middle-class families attend the most prestigious Private Voucher and Municipal Selective schools, and low-income families concentrate in Municipal and Private Voucher non-selective schools (discussed more in Chapters 3 and 5). The size of the private school sectors, and the high levels of segregation of students from different socioeconomic backgrounds across types of school, are specific features of Santiago that need to be explored further in relation to the effects on social cohesion.

Key research questions

The key research questions which this study will address are the following:

- To what extent are secondary school students in Santiago divided along socioeconomic lines?
- How does the separation of students from different socioeconomic backgrounds affect skill formation and capacity to participate in social life?
- Is there a relationship between school segregation and student values, attitudes and dispositions towards social cohesion?
- What are the implications of school segregation for the promotion of citizenship, social cohesion and social and political integration of young people in Santiago?

To address the research questions calls for an extensive literature review, diverse sources of information and various kinds of analysis. While some of the information gathered for the current study will be analysed qualitatively, the specific question of the influence of segregation on social cohesion in Santiago will be addressed through quantitative methods. The primary source of information for the quantitative analysis is data collected as part of the International Study of City Youth (ISCY), a study conducted in 15 cities around the world including Santiago. The survey involved tests and questionnaires of 10th grade students and their teachers and principals in a representative sample of schools in each city. The implementation of ISCY-Santiago, including the survey design, recruitment of schools and instrument administration, was developed as part of this PhD thesis, and the results refer to data gathered between April and July 2016 on 2,432 students in 27 schools. Details on ISCY-Santiago are provided in Chapter 4.

Other data and information also have been gathered to help address the research questions, including administrative data sets on student performance and recent studies on social inequality, segregation and social cohesion.

Structure of the thesis

The chapters and sections of this thesis have been organised around the main tasks undertaken for the study including the definition of theoretical and conceptual terms associated with segregation and social cohesion, an outline of the methodology and empirical approaches used, and the analysis and discussion of results on the effects of educational segregation on social cohesion.

Chapter 2 elaborates on the concept of education, segregation and their links to social cohesion. The chapter concludes with a conceptual map of the key dimensions involved in the relationship between educational segregation and social cohesion.

Chapter 3 is dedicated to explaining educational segregation in Santiago and Chile. It starts by describing the specific features of the current organization of education in Chile, and basic statistics. The second section of the chapter aims to explain the main causes of educational segregation in Chile and Santiago, addressing issues of history and culture, the institutional arrangement of education, and the context of residential segregation. This section of the chapter is also useful to understand the main historical events of the development of the Chilean educational system, including the neoliberal revolution of the 70s and 80s and current debates.

Chapter 4 presents the methodology that has been used in the study to analyse the influence of educational segregation on social cohesion in Santiago. This chapter outlines the data that were collected for the study, together with the concepts and the measures used in the analysis. In the chapter there is discussion of how social cohesion and educational segregation are understood and operationalised in the study. This includes information on the main indicators used to measure social cohesion, such as measures of generalised trust in others, trust in institutions and sense of belonging, among others. There is also a discussion on the techniques used for analysing the data.

The first section in Chapter 5 presents the results of three segregation indices to analyse the extent of social segregation in the Santiago secondary school system. The second

section conducts similar analysis to explore the association between social segregation and types of school in Santiago.

Chapter 6 presents the results of the analysis designed to explore the association between social segregation and student experiences of quality of school life and dispositions towards learning, while Chapter 7 describes the findings of similar analysis to analyse the relationship between segregation and student academic achievement. The link between school segregation and student social and emotional skills is examined in Chapter 8. Chapters 9 and 10 explore the connection between social segregation and student work and study plans, and their dispositions towards social cohesion such as trust in others and civic engagement, respectively.

Chapter 11 discusses the results in light of the theoretical and conceptual framework used in this study, along with the literature review and the Chilean context.

Chapter 12 offers the conclusions of the study, together with policy implications and possibilities for further research.

2. EDUCATION, SEGREGATION AND SOCIAL COHESION

The idea that education is important to social cohesion was fundamental to the foundation of public education. Studies of the origins of mass public education reveal that the interest of governments in providing formal education to the general population was not only due to the economic needs of increasingly industrialised economies, but also to a political need to consolidate unified nation states (Ramirez & Boli, 1987). For example, the role of public education as a tool to unify the state of Prussia was the primary focus of Frederick William I, sometimes referred to as the father of modern public education (Heyneman, 2009; Ramirez & Boli, 1987). He made public education compulsory in 1717, at a time when Prussia was acquiring new territories. Schooling was a powerful tool to develop a unified national citizenry in moments of crisis or change. Despite their own particularities, the establishment of public schooling in France, the United States and The Netherlands at the beginning of the nineteenth century was seen as a way, among other purposes, of teaching the common attitudes and values needed for national unity, and more than simply being geared to teaching basic skills such as literacy and numeracy (Glenn Jr, 1987).

These conceptions of the social role of public education are in line with the arguments made by Emile Durkheim (1951) who had the view that public institutions play a key role in sustaining a collective consciousness in industrialised societies, a pillar for social cohesion. In his view, educational institutions were fundamental to the process of instilling in young people the essential outlooks, values and skills required by societies for remaining cohesive.

Educational segregation, on the other hand, can inhibit the promotion of the collective consciousness Durkheim refers to, and the development of a unified national citizenry, by threatening the capacity of school systems to provide equal access to resources, opportunities and social outcomes, and by limiting interactions between members of different social groups.

The purpose of this chapter is to elaborate on the concepts of education and segregation and their links to social cohesion. The chapter concludes with a conceptual map of the key dimensions involved in the relationship between educational segregation and social cohesion.

The relationship between education and social cohesion

Economic exchange and development have been key in arguments about the importance of education to social cohesion. In the context of western industrialization, education has been considered to be one of the more important endeavours to teach the skills and provide the socialization needed for children to acquire the values and norms required to participate in the labour market (Green et al., 2006). The rise of human capital theory championed this point of view. It posited that education plays a key role in providing the skills that are necessary for individuals to perform in the labour market, increasing their chances of employment and being rewarded with higher salaries. From this view, education delivers economic as well as social gains, affecting economic growth, development and social cohesion. Economic growth and development protect and support social cohesion, by providing greater availability of public resources to promote equity and public well-being (OECD, 2012).

At the same time, nations with more social democratic traditions stress the importance of education in providing common and shared experiences between individuals and fostering equality and solidarity (Green et al., 2006). From this perspective, education and schools are seen as socially legitimised means for promoting the resolution of tensions and conflict in societies characterised by diversity. The legitimation of educational institutions as promoters of social cohesion rests in their capacity to create and promote mechanisms of inclusion and equality, and reduce sources of social exclusion and inequality (Ottone & Sojo, 2007). Even though this view recognises the human capital purpose of education, it also recognises the role of education in promoting social solidarity.

Empirical research on the links between education and social cohesion is mostly based on these traditions of thought. One of the concepts that has been studied a lot from an empirical point of view is social capital, derived from human capital theory. Even though the concept of social capital had been raised earlier by Bourdieu and Passeron (1979), for example, it was James Coleman (1988) and Robert Putnam (2000) who popularised the concept by studying it in the North American context. They found that educational attainment was a powerful predictor of social capital, even when other variables such as age, gender, wealth and income were considered. They found that more educated individuals were more likely to join voluntary organizations, be engaged in politics and

get involved in political activities. More educated individuals were also more likely to express trust in others (social trust) and in institutions (institutional trust), and to cooperate and collaborate with other members of their community.

From this tradition, trust in others and institutions is seen as an essential component of social capital and social cohesion, because individuals with low levels of trust can hardly engage with others in activity, and societies where the aggregate level of trust is low, are less prepared to face the challenges brought by globalization, diversity and individualization. Putnam (2000) found that people who trust others are more likely to participate in politics, participate more frequently as volunteers, donate to charity, comply with tax obligations, and so on. In his book dedicated to explore the social implications of trust, Fukuyama (1995) argues that economic prosperity and well-being of nations are conditioned by their aggregate levels of trust. The arguments are that trust is crucial to ensure organizational innovation in a constant changing market environment, and that trustful societies spend fewer resources protecting individuals and organizations from being exploited in economic transactions. Trust is therefore associated with stronger economic performance (Knack & Keefer, 1997). However, trust has not only been linked to economic prosperity; there is considerable support for the claim that societies with higher levels of trust among its citizens present better outcomes in terms of life satisfaction, health indicators, democratic performance, and so on (Charron & Rothstein, 2016; Larsen, 2013).

As such, the link between education and trust has received considerable attention from scholars. Not only individuals with more years of education tend to have higher levels of trust, but also richer and more democratic societies benefit from higher levels of trust (Huang, van den Brink, & Groot, 2011; Putnam, 2000). Putnam (2000) reported that after controlling for several other variables, years of education is the strongest individual variable to predict individual levels of trust. Uslaner (1999) states that the best predictor of social trust and participation is education. One of the arguments to explain this relationship is that at the individual level, more educated individuals do better in the labour market, have higher salaries, greater chances of employment and can influence the political systems in a society, and are therefore in a better position to take the risk to trust others. Another explanation is that more educated individuals are better prepared to handle complex information to make choices that require trust (Keefer & Knack, 2005).

At a societal level, one argument is that more educated societies benefit from critical citizens who contribute to improve the quality of government operations and reduce corruption, increasing social trust (Botero, Ponce, & Shleifer, 2013). However, this is not the case for all countries, and contextual characteristics such as the quality of institutions and government may mediate the relationship between education and social trust (Charron & Rothstein, 2016). Finally, the role of mass education in consolidating citizenry and unified nation states during the 19th century has also been understood as a way in which education binds strangers to one another and to society at large.

The research influenced by the social democratic tradition places emphasis on the conditions under which education is provided to explore the effects on social cohesion. The main focus here has been to explore the extent to which education is a reflection and at the same time a cause of social stratification, inequality and differentiation, eroding the conditions for a wider societal cohesion. Higher mean levels of education in countries do not always result in higher social cohesion, and mean levels of adult skills do not always translate into greater aggregate levels of trust (Green & Preston, 2001). Education promotes social cohesion when it leads to greater social and economic equality (Uslaner, 2002). Studies have found a strong correlation at a country level between skill distribution and overall levels of social and institutional trust, civic cooperation and violent crime, and a strong negative correlation between education inequality and social cohesion, suggesting a distributional effect of education on social cohesion (Green, Preston, & Sabates, 2003). From this tradition, the distribution of education and its impact on social equality are fundamental factors for social trust and cohesion.

Segregation, schooling and social cohesion

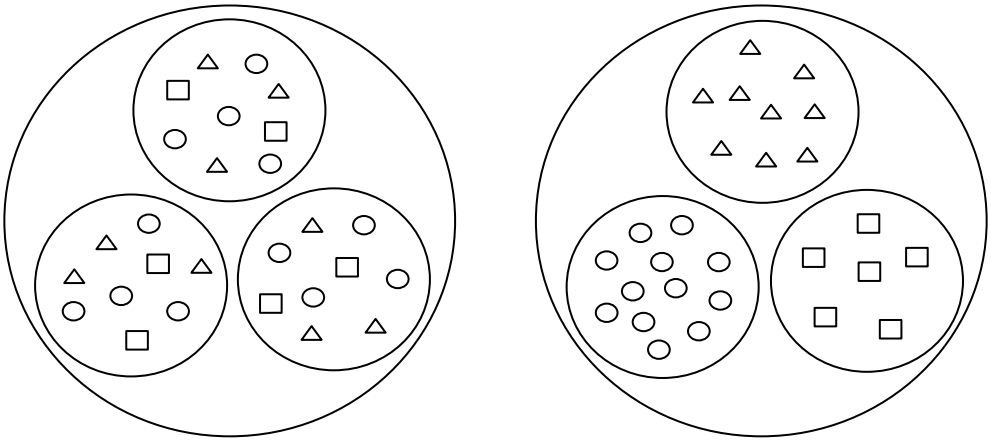
The study of the spatial separation of groups of people in the fields of education, housing, health provision and the labour market has interested social scientists for more than 50 years. One area of interest is the effect of separation on promoting inequality. One view is that the spatial separation of people according to race, ethnicity, gender and wealth, for example, reflects the extent of inequalities across these groups in a society, and the limits on success of policies oriented to reduce them. In this sense, segregation is a mechanism that undermines equality of opportunity and outcomes for groups of people in many fields, and exacerbates existing social inequalities.

Segregation, defined as the separation of individuals according to particular characteristics into homogeneous groups (even if heterogeneous among themselves), is primarily concerned with the reduced probabilities of interaction between members of the different groups and the unequal distribution of benefits among these groups (James & Taeuber, 1985). The first concern is conceptual and inevitable: perfect segregation implies, by definition, that units belonging to different groups are separated spatially and have null chances of contact or interaction with members of the other groups. The second concern relates to issues of social inequality, as the concentration of individuals in a disadvantaged social position has been associated with lower access to resources, opportunities and social outcomes than concentrated advantaged individuals.

Figure 1 shows a conceptual representation of perfect inclusion and perfect segregation. In figures A and B there are the same number of individuals (27) and spatial units (3), and all else is equal. Individuals have been categorised in three different groups according to their shape: circles, squares and triangles. Different variables can be used to identify individuals according to groups, but in this case individuals are defined as students coming from different social backgrounds. And similarly, spatial units can be of different nature, and in this example, they represent schools within a neighbourhood (this last group is represented by the wider circle in each figure). In the example, therefore, there are 12 high SES individuals (circles), 9 middle SES individuals (triangles), and 6 low SES individuals (squares) distributed in three schools in each neighbourhood (A and B).

Figure 1 Conceptual diagram of inclusion and segregation

A. Perfect inclusion B. Perfect segregation



The distribution of students between schools in the neighbourhood in Figure A represents perfect inclusion of students coming from different social backgrounds, as the diversity contained in the whole neighbourhood is represented equally in each of the schools. Theoretically, all students in Figure A have the same probabilities or chances of interacting with students coming from different backgrounds, independent of the school they attend, and these probabilities are the same as if there was only one school in the neighbourhood. Figure B, to the contrary, represents a perfect segregated distribution of students coming from different social backgrounds across schools within the neighbourhood. In this case, no student has the chance of interacting at school with a student from a different background, and their school only provides them the possibility of interacting with students of the same social background. This is despite living in a neighbourhood that is quite diverse in social terms. Each student studies in a school that looks very different from the social composition contained in their neighbourhood, and they would be exposed to very different interactions if there was only one school in the neighbourhood. Note that Figure B also represents a potential problem for the segregated low SES school, as it serves students only from a disadvantaged background, and this isolation may impact the educational conditions and opportunities for learning.

In the field of education, studies addressing segregation have often used information on race, and ethnicity to define groups of students and explore their distribution across schools and classrooms within a system. The primary concern in studies of educational segregation has been to identify its causes (contextual, institutional and sociocultural factors), understand the unequal educational opportunities derived from it (access to school resources, programmes, learning climate and environment) and explore the individual and social consequences associated with it.

Other forms of educational segregation have also been studied in depth, such as gender, academic achievement and social segregation. In most of these cases, the primary concerns are the individual and social consequences associated with the separation of groups of students into different schools. Pettigrew (1981) argues that race and class segregation in education often interact and create a complex form of disadvantage that is more difficult to disentangle and overcome. Orfield, Ee, Frankenberg, and Siegel-Hawley (2016) argue that it is this *double segregation* in schools what perpetuates racial isolation and inequality in several states of the US. However, Cookson and Persell (1991) suggest

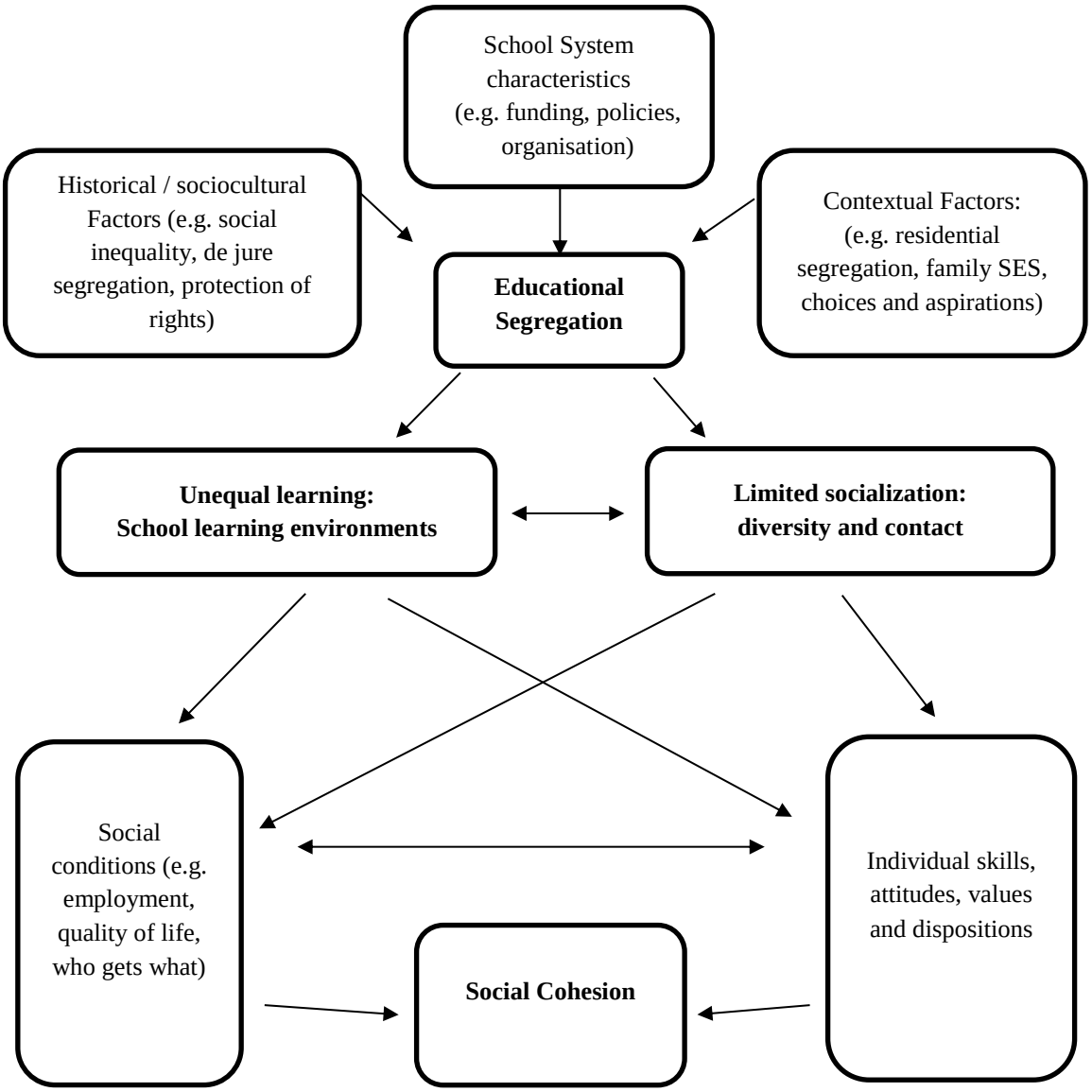
that class stratification is less evident than racial discrimination, and while both are extremely important sources of social differentiation, class is of greater importance precisely because it is less visible. Studies specifically addressing socioeconomic status segregation in education have mainly been concerned with the individual and collective disadvantages that are present in the life of students coming from a low SES background, and how the concentration of these situations in schools creates challenges that are difficult to address, enhancing the reproduction of inequality. As expected, researchers focused on the impact of the mix of students at school to explain student performance and attainment and, even though the evidence is not conclusive, there is evidence to suggest that the characteristic of the student population has an effect in many cases (Thrupp, 1999).

Despite the academic interest in the consequences of educational segregation and the link between education and social cohesion, the influence of educational segregation on social cohesion has rarely been studied. As such, the mechanisms under which educational segregation can influence social cohesion are not clear. The next two sections provide an explanation of the conceptual mechanisms used in this study.

Conceptual map of relationship between educational segregation and social cohesion

Figure 2 presents a diagrammatic representation of some of the key dimensions in the relationship between segregation and social cohesion. It does not aim to be comprehensive, but rather to highlight some of the key dimensions involved.

Figure 2 Conceptual map of the links between segregation and social cohesion



The conceptual map recognises that segregation in education is not an accidental phenomenon, but a result of several social, cultural and institutional factors in a society (Hanushek et al., 2009). First, educational segregation is influenced by the organisation of the school system and educational policies that shape the system, such as the use of vouchers, the share of private schooling, programs and course offerings, unrestricted parental choice, admission procedures, school funding arrangements, and school practices such as student ability selection, grouping and tracking, among others (Bellei, 2010; Elacqua, 2012; Hanushek et al., 2009; OECD, 2010b; Willms, 2010). Several studies have found that in some instances school choice and vouchers can actually reduce segregation

in societies with high residential segregation, as families are not forced to enrol their children at schools in their neighbourhoods and can access more integrated schools in other neighbourhoods (Moe, 2004; Ritter, Jensen, Kisida, & Bowen, 2012). However, researchers have also found that school choice, vouchers and private education can work to intensify educational inequalities and segregation (Frankenberg & Siegel-Hawley, 2013; Orfield, 2013; Orfield & Frankenberg, 2013; Saporito, 2003). In an analysis of the literature, Levin (1998) distinguished three broad reasons why segregation is enhanced by such policies: (1) choice is more frequently exercised by families from a high SES background, concentrating low SES background students into designated or non-chosen schools; (2) families that exercise choice pay special attention to the SES status of other families at school, so the most preferred schools are the most advantaged schools, and (3) students who attend the highest SES background schools benefit from the contextual and peer effects on achievement, exacerbating inequalities in educational outcomes. In an extensive review of charter schools in the US, Frankenberg, Siegel-Hawley, and Wang (2010) conclude that the promotion of choice through charter schools has contributed to the isolation of students by race and class, as they appear to be more racially isolated than public schools.

Second, there are historical and sociocultural factors such as the protection of segregation by law, such as the former apartheid system in South Africa and the "separate but equal" doctrine in the US, the extent of poverty and social inequality and their influence over the access to educational services, and the quality of democracy and the protection of human rights. In earlier times, the racial separation of students in American public schools is a well-documented example illustrating how prejudice against non-white students resulted in the legitimation for nearly 60 years of spatial separation of students based on race, and the decline of white enrolment in urban schools districts, or what some researchers have denominated the "white flight", as a result of desegregation programs after *De Jure* segregation was abolished (see Baum, 2011, Clotfelter, 2004 and Welch, 1987 for literature in these issues).

Third, there are contextual features that affect levels of segregation, such as residential segregation, family wealth, choices and aspirations. Residential segregation has played a key role in educational segregation, especially in systems where schooling options are restricted to where families live (see for example Hanushek et al., 2009). One of the

reasons why schools in the United States remain highly segregated along racial lines despite all the efforts to reduce it is precisely the persistent high residential segregation of Blacks and Whites (Rivkin, 1994). The expansion of choice policies in education has stimulated research on how families choose schools and how these decisions affect segregation. Research in the U.S. shows that it is often the case that wealthier and higher status families choose the most desirable schools and neighbourhoods, and that these decisions are guided by informal social networks of people of similar characteristics, resulting in the reproduction of inequality (Lareau, 2014). Others have argued that risk perceptions and anxiety about the future success of their children is fundamental in the school choices of middle-class families, leading to inequality and segregation (McDonough, 2014).

The conceptual map also acknowledges that social cohesion depends on two main types of direct influences: (1) social conditions associated with quality of life (employment, inequality, income distributions, housing, welfare and basically who gets what), and (2) the skills, attitudes, values and dispositions that individuals develop towards others and towards engagement in social and political life in a community (Green et al., 2006; Jenson, 2010; Villatoro, 2007). The relationship between these two influences on social cohesion is not completely clear, and it is rather understood as a dialectic process where they influence and reinforce each other (Ottone & Sojo, 2007).

The structural dimension of social conditions emphasises the role of institutional arrangements (the state, the economy, and the various networks of public and private institutions) in the creation of conditions for equality of opportunity, fair resource and wealth distribution, and social justice. In this sense, social cohesion is influenced by the conditions which structure levels of inclusion and exclusion in a society, that affect the distribution of opportunities, accumulation of wealth and privileges/disadvantages, and the processes and outcomes of inclusion/exclusion (Villatoro, 2007). Studies that have explored social cohesion from this perspective usually pay special attention to indicators such as income distribution, level of protection of human rights, levels of inclusion in the labour market, indicators of employment and training, distribution of social benefits and core services such as housing, health and education, regional disparities, and indicators of equal opportunities for men and women, generations, different social strata, the disabled, ethnic and race groups, among others (Council of Europe, 2008; Jenson, 2010;

National Research Council, 2014; Valenzuela, Schwartzman, Biehl & Valenzuela, 2008). In this approach to social cohesion, being excluded refers to more than just being unemployed and unable to meet economic needs, it refers to the accumulation of different kinds of disadvantages that severely limit the capacity of individuals to fully participate in and benefit from the social, economic, political and cultural systems and resources (Jenson, 1998; Villatoro, 2007). In this view, exclusion is seen as a failure of social institutions to include or integrate individuals, rather than an issue attributable to individuals (Berger-Schmitt, 2000), creating unrest and social instability.

Social cohesion also depends on the capacity and skills that individuals possess to participate in economic life, and the values, dispositions and attitudes that individuals learn which are part of the construction of a collective identity. The study of social cohesion through this approach uses indicators such as possession of skills for the labour market, general trust in others (social trust), trust in institutions and public figures, willingness to cooperate and help others, sense of belonging, participation in political institutions and voting, interest in political and social issues, willingness to volunteer and donate, indicators of racism, discrimination and classism, perceptions of economic fairness, religious participation, connections in the workplace, informal social connections (friendship and neighbours), altruism, volunteering and philanthropy, reciprocity and honesty, among others (Chan, To, & Chan, 2006; Jenson, 2010; Putnam, 2000).

The map proposes two specific mechanisms through which educational segregation impacts social cohesion. First, segregation can lead to unequal learning, in part because of the differences in resources (material, types of pupils, types of teachers) that occur across schools and the effect this has on school learning environments and student academic achievement. Research suggests that segregation can be associated with different school resources, learning conditions and quality of schooling (Kucsera & Orfield, 2014). These resources include a range of elements such as less qualified and experienced teachers, high levels of teacher turnover, poor learning materials and facilities, less challenging curricula, among others. Recent studies have found that experienced teachers, one of the factors that schools can influence to improve student learning outcomes, are less likely to stay in segregated schools with a high concentration of minority and low SES students (Boyd, Lankford, Loeb, & Wyckoff, 2005; Clotfelter,

Ladd, & Vigdor, 2011; Jackson, 2009). High poverty concentration also influences the way schools are organized and operated, affecting student achievement (Rumberger & Palardy, 2005). School learning environments and student attitudes towards school and learning can be influenced by the unevenness of learning resources and conditions that result from segregation. These can be expressed in student opinions about the quality of life at school, levels of connectedness to school, perceptions about their relationship with teachers, the overall student behaviour at school, engagement towards and value of learning.

Learning environments are crucial for student cognitive achievement and for student social and emotional development (Resnick et al., 1997). Unequal learning environments fostered by segregation can influence student skills, academic achievement and work and study plans (chances of graduation and effects on entry to higher education, employment prospects and careers, and who gets what) which in turn influence the levels of inclusion or exclusion which shape citizenship, behaviour towards others and political and social integration. Conversely, school integration can positively influence academic outcomes, such as school performance and educational attainment, with positive consequences for long term social outcomes such as adherence to democratic values and greater civic engagement (Mickelson & Nkomo, 2012).

Second, segregation also affects social cohesion through its influence on the socialization process involving students at schools. By limiting opportunities for interaction and contact with students from different backgrounds, segregation can influence the development of values, attitudes and dispositions needed for social cohesion, such as respect for pluralism, tolerance for alternative views and trust in others. It may also hinder the development of shared views and values needed to help bind citizens together. Where opportunities for wider interaction are more available, research has pointed to some of the positive effects, such as greater preparedness to form cross-racial friendships, greater acceptance of cultural differences and a reduction in racial fears and prejudice and, later in life, greater likelihood of living and working in more cohesive environments with better intergroup relations (Mickelson & Nkomo, 2012).

Each of these mechanisms also affect the social conditions that shape social cohesion in a society. A segregated educational system that affects student performance and future opportunities helps to reproduce inequalities and stratification which in turn undermine

social cohesion. Similarly, socialization for students in segregated settings characterised by a lack of diversity and opportunity for interaction with different others also has the potential to create the symbolic and cultural conditions to perpetuate and recreate the institutional mechanisms of social exclusion, as it reduces opportunity for students to build competencies for citizenship, such as mutual understanding, mutual respect, appreciation of diversity and tolerance (Anderson, 2007; Satz, 2007).

Evidence on how educational segregation affects social cohesion through the mechanisms outlined in Figure 2 is hard to find. This study aims to provide some evidence from the city of Santiago to contribute to our understanding, by exploring how educational segregation affects social cohesion both through its effects on educational opportunity for student success and also through the skills and attitudes needed to be included in society, and the values and dispositions required to live together.

3. ORGANISATION OF EDUCATION IN CHILE AND SANTIAGO

An analysis of the relationships between school segregation and social cohesion in Santiago requires, initially, a description of the main features of the organisation of education in Chile. Therefore, the first section of this chapter describes the most relevant characteristics of the current organisation of education in Chile, including an overview of the organisational and governance arrangements of schools and an overview of curriculum provision and programs offered in schools. Also outlined are the key reforms that have shaped the current structure of schools and programs. The second part of the chapter describes the impact that the key reforms have had on school provision and patterns of school use, specifically in the city of Santiago.

Organisation of education

The Chilean education system has four levels:

(1) preschool (for children generally from 0 to 5 years of age),

(2) basic or primary education (for children generally from 6 to 13 years of age),

(3) secondary education (for children generally from 14 to 17 years of age) and

(4) tertiary education (for children generally from 18 years of age onwards).

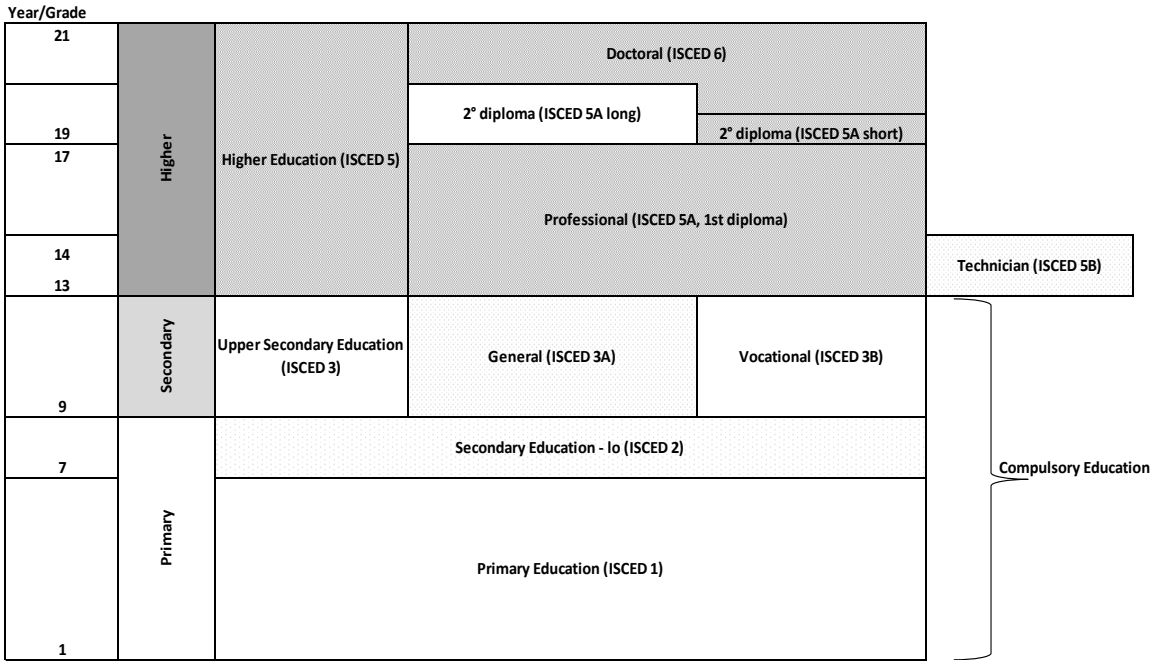
Basic education covers eight years of schooling (from first to eighth grade), and secondary education covers four years: two years for lower secondary education and two years for upper secondary education. Since 2002, compulsory education has included both primary and secondary education, providing for 12 years of compulsory education. However, from 2013, the last year of preschool, called kinder, was incorporated into basic education, making 13 years of compulsory education. In all, there are 10 common years of schooling, eight years of primary education and the first two years of secondary education. The final two years of secondary education provide for specialised courses involving technical-professional and/or humanistic-scientific education.

Figure 3 provides an outline of the structure of the system labelled according to the International Standard Classification of Education (ISCED). The first six years of education in Chile correspond to ISCED 1, while the final two primary school years

correspond to ISCED 2, (lower secondary). Secondary education corresponds to ISCED 3 (upper secondary).

During secondary education students can choose from two alternatives: scientific-humanistic (general or academic) or technical-professional education (vocational)[3]. Both are equivalent to ISCED levels 3A and 3B respectively. Tertiary education includes academic degree programs with a typical duration of four to five years (ISCED 5), professional degrees (ISCED 5A) that take three to four years to complete, and technical certificates typically of two years duration (ISCED 5B). Post graduate programs and diplomas (ISCED5A) are often taken for one year, while master's programs (ISCED 5A) take two years, and doctorate programs (ISCED 6) typically take four years (OECD/The World Bank, 2010).

Figure 3 Structure of the Chilean education system



Source: Ministry of Education of Chile, 2007.

In Chile there are combined schools that provide pre-school, primary and secondary education, while there are other schools that focus on specific stages of schooling. Some secondary schools specialise in delivering specific programs such as technical-professional (vocational) education or scientific-humanistic (academic) education, while

[3] Students can also choose an artistic-sportive alternative for the last two years of secondary education, which is also considered a vocational track.

others offer both kinds of secondary education. Scientific-humanistic education prepares students for university, and from 11th grade onwards, students can choose a science subject in either physics, chemistry or biology. Technical-professional education is designed to prepare students more for entry to the workforce, and students are taught practical lessons in technical areas such as electricity, mechanics, and metal assembly, among others.

Students who successfully graduate from schools that provide vocational secondary education receive a Secondary Education Technical Degree (Título Técnico de Nivel Medio), while students that successfully graduate from humanistic-scientific education receive a certificate of successful completion. Successful completion in either of the two pathways of secondary education is a pre-requisite for taking the national test to enter tertiary education (Prueba de Seleccion Universitaria, PSU), although this test is not required in all tertiary institutions, as will be explained below.

Once students successfully graduate from secondary education, there are different pathways into tertiary education. Firstly, if they are able to gain a place, they can opt for an academic degree, which in most cases is for four or more years (normally two years of bachelor's degree, and an additional three to four years to obtain the academic degree). They can also choose to study a professional degree, which in most cases takes three to four years (since they do not undergo the two years of study required for the bachelor's degree program). Finally, students may opt to study in a two-year technical or vocational program.

Tertiary education institutions in Chile are divided in three main categories: (1) centre for vocational training, (2) professional institutes and (3) universities. Universities are the only tertiary institutions authorised to provide academic degrees and postgraduate degrees, and they must be non-for-profit organizations. Over time they have diversified their service to provide professional degrees and technical certificates. Professional institutes are authorised to provide professional degrees or technical qualifications, but not academic degrees. Generally, they offer professional programs of four years at ISCED 5A level, but also offer a lot of programs at ISCED 5B level. They are private, self-funded institutions, and may be either for-profit or not-for-profit. Centres for vocational technical can only provide technical certificates at ISCED 5B level, which normally require

between two to two and a half years to be completed. They are private institutions and may be for- or not-for-profit.

The current organisation of tertiary education is marked by a distinction established in the reform of 1981 which divides the 59 Chilean universities into two main groups: (1) the group of 16 public and 9 private universities that were founded before the 1981 reform, together with two new public universities founded in 2016, and (2) all the rest. The 27 universities that make up the first group, also known in Chile as the traditional universities, are governed by the National Council of Provosts of Chilean Universities (Consejo de Rectores de las Universidades Chilenas - CRUCH) and receive direct public funding. The second main group of universities are all private and were founded after 1981; they do not belong to CRUCH and do not receive direct public funding. All universities must be non-profit organisations, even though this has been a critical issue over the past five years.

The establishment of a free-market approach to education in Chile occurred in conjunction with the establishment of standardised testing systems to measure student academic achievement and administer tertiary education entrance exams. As mentioned before, from 1982 onwards, Chile implemented an annual national testing procedure called SIMCE to measure content knowledge and student achievement in several subject areas according to the national curriculum in primary and secondary education, and since 1966 makes use of a national admission test to select students for tertiary education (called Prueba de Aptitud Academica – PAA until 2002, and Prueba de Seleccion Universitaria – PSU from 2003).

The creation of PSU in 2003 had the fundamental objective of reducing the gap between the test and school curricula by changing its focus from aptitudes to achievement and subject content. The test measures student skills in four separate instruments—two mandatory tests for language and mathematics, and two elective tests for sciences and history and social studies with a common module and optional modules for biology, physics and chemistry. The tests are based on the updated curricula for the last four years of secondary education.

Students' results in these tests are combined with two other indicators that have been incorporated as markers of school outcomes: the average unstandardised grade of students

in the last four years of secondary education and, for the first time in 2014, the relative position of each student according to the average graduation grade of the previous three cohorts within the school.

Even though the use of the PSU system is not compulsory and universities and other tertiary education institutions are allowed to design and implement their own selection processes, 39 Chilean universities use the PSU as the main tool to select students (all 27 universities from CRUCH and 12 additional private universities). Some of them use other forms of student selection in combination with PSU results.

By contrast, most of the tertiary education institutions that provide vocational certificates or professional degrees do not ask students to provide a PSU grade, and admit students according to their own requirements.

According to Farías and Carrasco (2012), almost 65 per cent of students who completed secondary education in 2008 sat the PSU that year, and about 30 per cent of them had completed technical-professional education. Close to 46 per cent of the students that completed professional-technical education in 2008 sat the PSU, compared to 88 per cent of the students that completed scientific-humanistic education. Moreover, they found that students of similar academic performance that choose technical-professional programs score 0.28 standard deviations below students who enrolled in a humanistic-scientific program. On the other hand, studies demonstrate that PSU is a strong predictor of student performance after their first year at university, even greater than grades at secondary school (Comité Técnico Asesor, 2008; Manzi et al., 2006).

Another alternative students have after school is to study at institutions that prepare and coach them for the PSU. These institutions are commonly known as Pre-university institutions, and they offer an alternative method, especially for low performing students, in training for the test. Some of these institutions are run by universities and professional institutes, while others are private enterprises.

Types and numbers of schools

Table 1 provides information for 2016 on the number and percentage of institutions and students by type of school in Santiago, education type and level[4]. Although the focus of this and the following sections of this chapter is on the city of Santiago, some references to the country level are required to contextualise the specific situation of the capital city. Furthermore, some of the main features of the Chilean educational system are defined nationally, and explanations at the country level are required to unpack the specific situation of segregation and social cohesion in the city of Santiago.

Preschool education in Chile is largely provided by three different types of institutions: Junta Nacional de Jardines Infantiles (JUNJI), a public organization under the auspices of the Ministry of Education and funded since 1970 to provide preschool education to the most vulnerable families in Chile; Fundación Nacional para el Desarrollo Integral del Menor (INTEGRA), a private non-profit institution established in 1990 as part of the Chilean Presidency; and private child care centres, funded entirely by parental contributions. As the last year of preschool education (kinder) has been compulsory since 2013, most schools that provide basic education (from all types of schools) now enrol students from kinder and even pre-kinder. In 2016, there were 688 JUNJI institutions serving almost 65,000 students in Santiago, and 210 INTEGRA institutions serving approximately 21,600 students. In the same year, there were around 32,500 students enrolled in pre-kinder and kinder in Municipal schools, 86,600 in Private Voucher schools and 26,700 in Private Fee schools.

Since the reform of 1981, primary and secondary schools in Chile are largely defined by their administrative and funding scheme, into three main categories.

First are the Municipal schools (public schools), administered by Chile's 345 municipal governments, 294 of them using municipal education administrative departments (DAEM), and 53 of them using municipally controlled non-profit corporations. DAEMs answer directly to the mayor and are subject to more rigid rules regarding personnel management. The municipal corporations are governed by less strict rules regarding

[4] All 2016 statistics on schools and enrolment are the author's own calculations based on statistical information of MINEDUC 2017.

personnel hiring and resource use. In 2016, there were 724 Municipal schools in Santiago, serving around 280,000 primary and secondary students.

Table 1 Schools and students by type of school, education type and level in Santiago

Type of Educational Institution/Level of Education/Type of Education	2016			
	Institutions*		Students	
	N	%	N	%
Pre-School Institutions	**2,703**	**100.0**	**232,434**	**100.0**
JUNJI	688	25.5	64,982	28.0
INTEGRA	210	7.8	21,593	9.3
Municipal	539	19.9	32,490	14.0
Private Voucher	1,045	38.7	86,658	37.3
Private Fee	221	8.2	26,711	11.5
Primary Schools	**1907**	**100.0**	**748,594**	**100.0**
Municipal	611	32.0	201,008	26.9
Private Voucher	1,038	54.4	446,561	59.7
Private Fee	257	13.5	100,797	13.5
Corporation	1	0.1	228	0.0
Secondary Schools	**1066**	**100.0**	**345,627**	**100.0**
Municipal Humanistic-Scientific	163	15.3	56,569	16.4
Municipal Technical-Professional	27	2.5	23,767	6.9
Private Voucher Humanistic-Scientific	563	52.8	143,073	41.4
Private Voucher Technical-Professional	59	5.5	53,652	15.5
Private Fee Humanistic-Scientific	221	20.7	48,111	13.9
Private Fee Technical-Professional	0	0.0	0	0.0
Corporation Humanistic-Scientific	25	2.3	9,562	2.8
Corporation Technical-Professional	8	0.8	10,893	3.2
Tertiary Education Institutions	**94**	**100.0**	**598,002**	**100.0**
Technical Training Centre	26	27.7	51,486	8.6
Professional Institute	33	35.1	197,702	33.1
University	35	37.2	348,814	58.3

Author's own calculations based on statistical information from MINEDUC 2017.
* The total number of institutions cannot be added across education levels, as some institutions provide different combinations of levels of education and have been counted as 1 for each level of education provided.

The second category comprises Private Voucher schools, privately run but with the facility to receive funding through the student voucher. There were a total of 1,987 Private Voucher schools in Santiago in 2016 serving around 643,000 students in primary and secondary education.

The third type of school is those categorised as Private Fee schools which receive no government subsidies and operate entirely on parental contributions. In 2016, there were 303 Private Fee schools in Santiago serving around 148,900 primary and secondary students[5].

Secondary schools of all types can offer vocational (technical-professional) programs, academic (humanistic-scientific) programs, or both. However, Private Fee secondary schools in Santiago offer scientific-humanistic programs only, focusing on preparing student for university admission. According to Centro de Estudios MINEDUC (2018), 52 per cent of Municipal schools in Santiago offered academic programs only during 2016, 15 per cent vocational programs only, and 33 per cent both types of programs. Of the approximate 600 Private Voucher secondary schools in Santiago in 2016, 68 per cent offered academic programs only, 11 per cent vocational programs only, and 21 per cent both types of programs.

Private Fee, Private Voucher and some specific Municipal secondary schools in Chile have been historically allowed to select students based on social, academic, religious, ethnic and other characteristics, and expel students based on academic performance or behavioural issues (Gauri, 1998; McEwan & Carnoy, 2000). Indeed, a few selective Municipal secondary schools in Santiago have a long-lasting tradition of academic excellence based on student selection, and from 2010 to 2012, a new educational public initiative in Chile was implemented to identify 60 high achieving subsidised high schools, called Liceos Bicentenario de Excelencia[6], These schools are known to be high achieving schools, academically focused, and highly selective according to prior academic achievement. Most of them ask students to pass a skills and knowledge test to be selected. Of these 60 schools, 55 of them are Municipal schools and five Private Voucher schools. Additionally, a range of academically and socially selective Private Voucher schools that have not been identified as Liceos Bicentenario de Excelencia select students based on an

[5] Corporation schools refer to 70 public schools, most of them secondary schools, which were transferred in 1980 from the State to not-for-profit organisations representative of industrial, agricultural, construction and commerce sectors, among others.

[6] This initiative aims to promote academic performance of high achieving students by providing a public alternative of schools of excellence. However, it has been criticised for its potential effects on social and academic segregation.

array of methods, from student prior academic records and performance in knowledge based testing, to family interviews and additional fees on top of the voucher[7].

The free market reforms shaping the organisation of education

Some of the features of the current organisation of schooling in Chile had their origins in the period of civic-military dictatorship of Augusto Pinochet (1973-1989). Prior to this time, in the period between 1955 and 1975, the US funded a program to train a select group of Chilean economists, later known as the 'Chicago Boys', to undertake doctoral studies at the University of Chicago under the supervision of Friedrich Hayek and Milton Friedman. The visit to Chile of Milton Friedman in 1975 to give public conferences about the virtues of the free market in education, and a letter from him to Pinochet detailing his political and economic recommendations for Chile, prepared the ground for the implementation of one of the world's most radical neoliberal education reforms (Friedman et al., 2012; Harvey, 2007). The reform called for the introduction of a national voucher system, and the decentralisation, deregulation and privatisation of primary, secondary and tertiary education (Carnoy, 1998; Castiglioni, 2001; Cox, 2003). It involved establishment of a new public funding scheme, one that relied on the market, private entrepreneurship and competition to raise and regulate the quantity and quality of education. The main idea was to create a school market where parental choice would be enhanced due to the proliferation of private school alternatives, and where educational quality would rise as a result of schools competing for the student subsidy. Until this time, school funding for public schools was based on centralised block grants which were replaced by a system in which vouchers of a certain value were given to families to spend (cash in) at approved schools (Cox, 2003; Friedman, 1955). The claim of proponents was that freedom of parental choice through a voucher system would create a competitive system of efficient and effective Private and Municipal schools and would do so because if parents were not satisfied with the service, they could withdraw their children from their current school and send them to another school (Friedman, 1955). Competition for the dollar would incentivise schools and enhance performance.

[7] Note that from 2016 onwards, these current methods of student selection in Private Voucher and municipal schools that have not been identified as excellent schools will no longer be in place and gradually replaced by fair and transparent processes, as stipulated by law N 20.845.

As the scheme worked, the voucher took the form of a subsidy based on a student's monthly average attendance at school, with the voucher being transferable and redeemable at any type of voucher redeemable school, public or private. The voucher was not given directly to the family, as Friedman (1955) proposed, but to the owner of the school (Cox, 2003). With this action came the creation of a new form of school: the Private Voucher school, privately run and with the facility to receive the public subsidy from the State. The voucher scheme incentivised the creation of private schools by setting the value of the student voucher 30 per cent higher than existing funding per student (total public investment divided by the total number of students), and 61 per cent higher than the previous subsidy provided to private subsidised schools (Jofré, 1988). The administrative difficulties and bureaucratic requirements to create and run a private school were reduced (Pinochet, 1979). As a result, the number of private schools supported by public funding expanded rapidly, increasing more than 75 per cent from 1980 to 1990 (from 1,674 to almost 3,000 across Chile), and enrolments in the private sector roughly doubled to 32.4 per cent over the same period (Cox, 2003; Jofré, 1988).

In conjunction with the new funding arrangements there was also a decentralisation of the provision of educational services. After the reform of 1981, the State was no longer the administrator of primary and secondary schools and the employer of school teachers, as this function was transferred to the 325 Municipalities. The State did keep its regulatory role covering the establishment of the curriculum, definition of text books, the implementation of system evaluations and the provision of technical advice to schools. School teachers lost their status as public servants, together with all the public benefits that historically had been given to them by virtue of their role as public servants (Cox, 2003; Jofré, 1988).

After the dictatorship

Following the end of Pinochet rule, there was a consolidation of the existing model of provision, as the voucher system continued and was even strengthened. For example, the system to inform parents about school quality, SIMCE, was expanded and intensified. Even though the system had started in 1982 as part of the process to better inform parents about school competition, it was during the 1990s that results at the school level were made public for the first time, and testing was extended to secondary education and to other subject areas (from language and mathematics to include history and science) (Cox,

2003). It was also in this period when SIMCE results started having consequences for schools and teachers, as many governmental programs used SIMCE results to assess and reward schools and teachers. The National System of Performance Evaluation established in 1996 is an example of how all publicly supported schools were evaluated using mainly student SIMCE results, and monetary rewards were given to the best performing schools to be spent on teacher bonuses. These uses of SIMCE increasingly intensified in the following years.

In 1988 a new law allowed private subsidised schools to charge an additional fee to families of children enrolled in primary education[8]. However, this law only started operating in 1993, and its main rationale was that it would enable increased resources to participating schools and increased fiscal efficiency in resource allocation (as there was a proportional student voucher discount in schools that charged additional fees beyond a limit) (Cox, 2003; Vial, 1998). The second rationale was to increase parental participation and engagement with their children's education. The shared funding mechanism was relatively successful in its intention to bring additional private resources to education (in 2000, 1,530 schools enrolling around 30 per cent of the publicly supported student population were charging additional fees to families). However, it was also detrimental in terms of equity and stratification, as access to school was determined by the purchasing power of the families (Cox, 2003).

This new law which enabled schools to charge extra fees to families was a re-emerging element of the historical practice whereby schools selected their student population. It is a particular feature of Private Voucher schools which allows them to manage student intake (by administering knowledge based and psychological tests, interviewing parents, asking for previous academic records, etc.) and expel students based on their academic performance or behaviour (Gauri, 1998; McEwan & Carnoy, 2000). With the shared funding policy, schools now had an institutionalised mechanism to choose their student population based on the capacity of the families to pay the additional fees, and exclude students from disadvantaged backgrounds. Furthermore, in a system that relied on parental choice to promote quality, it gave aspirational families the possibility of choosing schools according to the socioeconomic background of the families in the school. As a result, the decade of the1990s witnessed a significant outflow of aspirational families

[8] This mechanism is commonly known in Chile as *financiamiento compartido* (shared funding).

from Municipal to Private Voucher schools and an increasing concentration of the lowest income families in Municipal schools (Cox, 2003; Hsieh & Urquiola, 2006).

The core market-based policies on which the educational system was based remained unmodified during the 2000s. But there have been important recent changes. In January 2015, a new law was approved by the Chilean congress to change three fundamental features for schools receiving funding from the student voucher: (1) prohibition of profiting, (2) abolition of extra family fees, and (3) regulation of student selection processes which could no longer consider past or future student performance, income capacity, religion, disability, nationality, ethnicity or culture as criteria to admit students to schools. A new teacher law was also approved to improve initial training quality, new support for professional development, a ladder of promotion, increased salaries, and better working conditions (including increased non-lecture time, and a higher compensation for teachers working in schools with high concentrations of low SES students). A reform to promote public education has been recently approved, which includes higher financial support to public education and the change of the administration from municipalities to new, professionalised local institutions where the local community is represented.

It is worth noting that four important interrelated historical features of the institutional arrangement of the Chilean education system have not been challenged in the recent reforms: parental choice, the participation of the private sector in schooling, the independence of Private Fee schools, and the funding principle of vouchers. Despite the recent reforms, the concept of "freedom to teach" has remained intact, understood as the right of families to freely choose the school for their children, the right of private groups to create schools and educational projects, and the duty of the State to financially support private education. The latest reforms also do not alter the relationship that exists between the State and Private Fee schools, schools whose only state responsibility is to comply with the national curriculum and provide adequate facilities. These are schools which operate as a separate system, free of State funding, and able to impose their own rules of entry.

Today, Chile has two systems of schools: one (largely for the rich or at least those that can afford the fees) which does not rely on any funding from the State and is largely free of State control, and the second (for all of the rest of the population which either doesn't

have the money to pay fees or chooses not to) which is funded by the State through vouchers and involves schools that are either administered by municipal authorities or by private entities or corporations. Student selection and additional family fees differentiate the type of families that attend the publicly funded schools.

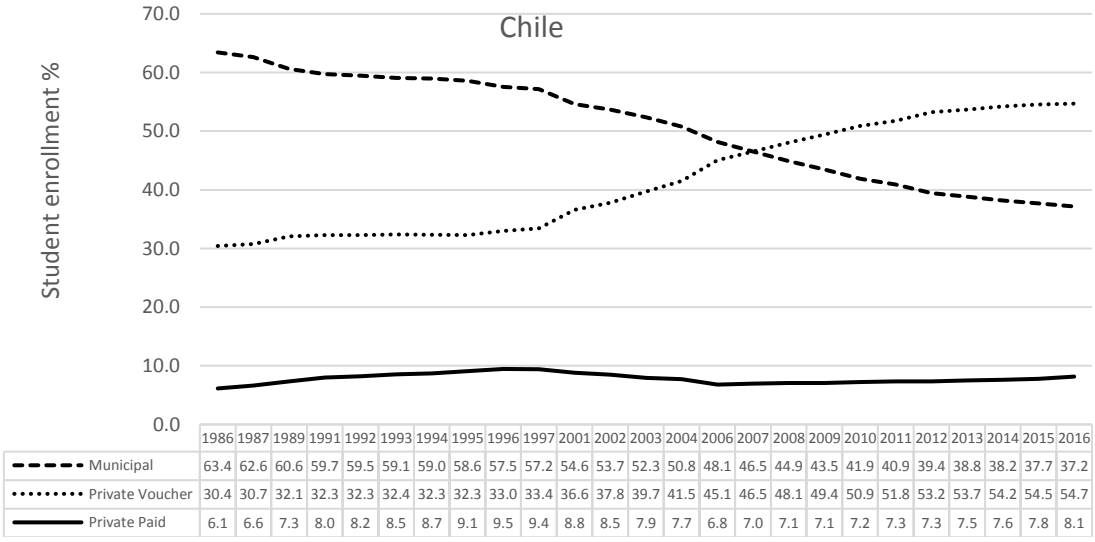
Impact of educational reforms on school provision and use

The segregating impact of the market-based choice system implemented in Chile has been similar to the effects of unregulated choice initiatives employed in the U.S. following the Brown v. Board of Education case in 1954. It has been argued that freedom of choice strategies responding to the legal demand to desegregate schools in the U.S. resulted in higher levels of segregation and inequality (Orfield, 2013; Siegel-Hawley & Frankenberg, 2013). Evidence also suggests that the more recent and expanding mechanism of unregulated choice promoted through charter schools in the U.S. leads to greater segregation (Frankenberg & Siegel-Hawley, 2013). In their extensive examination of the educational effects of choice policies in the U.S., Orfield and Frankenberg (2013) conclude that without explicit obligations to pursue integration, choice policies result in segregation and educational inequality. The case of Chile is not too different, and this section describes the main impact of unfettered choice on school provision and use in Chile and the city of Santiago.

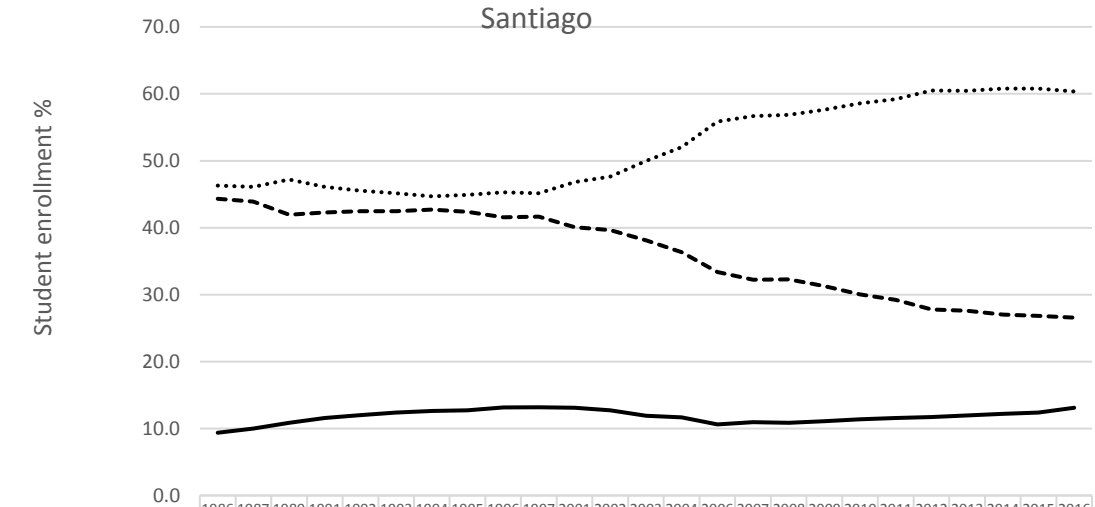
One of the distinctive characteristics of the Chilean educational system, partly thanks to the introduction of vouchers, is the size of the private sector, and the declining share of students in municipal public schools. Figure 4 shows the trends in shares of student enrolment by type of school in Chile and Santiago.

Figure 4 shows that the share of students enrolled in Municipal schools has declined steadily during the last 30 years in Chile, although at an increased rate from 1997 to 2012. This has meant that the share of students enrolled in Municipal schools in Chile was reduced by nine per cent between 1986 and 1996, and by 35 per cent between 1997 and 2016. By contrast, the share of students enrolled in Private Voucher schools has increased steadily over the last 30 years in Chile, and at a faster rate from 1997 to 2012. Figure 4 shows that the share of students enrolled in Private Voucher schools in Chile increased by eight percent between 1986 and 1996, and by 64 per cent between 1997 and 2016. While the share of students enrolled in Municipal schools in Chile more than doubled the

Figure 4 Evolution of student enrolment by type of school in Chile and Santiago



	1986	1987	1989	1991	1992	1993	1994	1995	1996	1997	2001	2002	2003	2004	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Municipal	63.4	62.6	60.6	59.7	59.5	59.1	59.0	58.6	57.5	57.2	54.6	53.7	52.3	50.8	48.1	46.5	44.9	43.5	41.9	40.9	39.4	38.8	38.2	37.7	37.2
Private Voucher	30.4	30.7	32.1	32.3	32.3	32.4	32.3	32.3	33.0	33.4	36.6	37.8	39.7	41.5	45.1	46.5	48.1	49.4	50.9	51.8	53.2	53.7	54.2	54.5	54.7
Private Paid	6.1	6.6	7.3	8.0	8.2	8.5	8.7	9.1	9.5	9.4	8.8	8.5	7.9	7.7	6.8	7.0	7.1	7.1	7.2	7.3	7.3	7.5	7.6	7.8	8.1



	1986	1987	1989	1991	1992	1993	1994	1995	1996	1997	2001	2002	2003	2004	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Municipal	44.3	43.9	42.0	42.3	42.5	42.5	42.7	42.4	41.6	41.7	40.1	39.7	38.1	36.3	33.4	32.2	32.3	31.3	30.0	29.2	27.8	27.6	27.0	26.8	26.6
Private Voucher	46.3	46.1	47.2	46.1	45.5	45.1	44.7	44.9	45.3	45.2	46.8	47.6	50.0	52.0	55.9	56.7	56.9	57.6	58.6	59.2	60.5	60.5	60.8	60.8	60.3
Private Paid	9.4	10.0	10.8	11.6	12.0	12.4	12.6	12.7	13.1	13.2	13.1	12.7	11.9	11.7	10.6	11.0	10.9	11.1	11.4	11.6	11.7	12.0	12.2	12.4	13.1

Source: Author's calculation based on official student enrolment data from the Chilean Ministry of Education[9].

share of students attending Private Voucher schools in 1986, they served the same number of students by 2007, and by 2016 there were nearly 623,000 more students enrolled in Private Voucher schools than in Municipal schools. The share of students attending Private Fee schools in Chile has always been considerably lower, between six and 10 per

[9] The Ministry of Education does not have official student enrolment data published for years 1988, 1990, 1998, 1999, 2000 and 2005.

cent of total student enrolment, a rate roughly similar to the enrolments and size of the private school sector in the US. There have been some variations in time: a steady increase in student enrolment from 1986 to 1996, a decrease from 1997 to 2006, and a steady but mild increase from 2007 onwards, reaching a total of approximately 289,000 students in 2016.

The case of Santiago is different. From 1986, as shown in Figure 4, the share of students enrolled in Private Voucher schools in Santiago was always higher than the share of students enrolled in Municipal schools, suggesting that the process of separation of the student population by type of school had started before the introduction of the market-driven reforms. Although enrolment rates in this sector increased rapidly during the first five years after the introduction of the market-driven reforms in 1981, the private subsidised sector was already strong in the capital city prior to the reform. Indeed, private schools have historically received public funding and support in Chile, ever since the creation of the national education system in Chile in the middle 1800s (Egaña, 2000). As an example, the Constitution of 1833 stipulated that education had to be provided by the State in collaboration with the private sector and the church, and that public resources were needed to support private and public efforts in education (Egaña, 2000; Illanes, 1991). As such, a number of private schools have historically received public funding, most of them located in the city of Santiago. Prior to the reform of 1981, the amount of public funding given to private schools was around 50 per cent of the funding received by public schools (Vargas & Peirano, 2002). The funding was paid to the schools in block grants rather than as a voucher amount per child. With the introduction of the voucher system in 1981, the same amount of funding was provided to schools, private and public, based on student monthly average attendance, promoting the growth of the private subsidised sector, especially in the city of Santiago. So, in the case of Santiago, introduction of the market-based funding reforms were not the original source of school privatisation, which had a longer history, but rather they were policies that helped accelerate and massively deepen privatisation and segregation. By 2016, the proportion of students attending Private Voucher and Private Fee schools in Santiago was 73 per cent, much larger than the proportion of students attending these schools in the rest of the country.

The fluctuations in Private Fee school enrolments in Santiago between 1986 and 2016 follow the same pattern observed in the rest of Chile, although the share of students attending Private Fee schools in Santiago has always been larger than in the rest of the country, reaching 13 per cent of total enrolments in 1996, 1997 and 2016. In 2016, 303 Private Fee schools served around 180,000 students in Santiago.

Figure 4 reveals that while student enrolments in Municipal and Private Voucher schools have changed markedly over the past 30 years in Chile and Santiago, Private Fee schools have been practically unaffected by the transformations and policies of the period. The slight increase in the enrolment level in Santiago between 2007 and 2016, from 11 per cent to 13 per cent, suggests that Private Fee schools have remained untouched by the free-market changes in education, and if affected at all, it has possibly resulted in more student enrolments. Part of the Chilean population continues to use schools which are largely independent of the State and which operate as schools unto themselves. It may be that the same types of families that have always used these types of schools continue to use them in the same way as they have done historically despite the revolution in state funding of schooling which occurred with the introduction of vouchers.

Some Private Fee schools in Chile can cost up to USD 16,000 a year, four times the minimum wage, and on average they charge fees that are five times the size of the student voucher (Mizala & Torche, 2012). As a result, Private Fee schools serve the wealthiest families in Chile, those who can afford the fees. Private Fee schools market themselves, like wealthy private schools in the US, as providing an environment with top quality facilities, high quality teachers and top-notch resources. According to CASEN 2013[10], around 71 per cent of students enrolled in Private Fee schools came from the top three income deciles of the country, while official 10th grade SIMCE data for 2013 show that 91 per cent of Private Fee schools serve families from high SES backgrounds. To compare, 56 per cent of students enrolled in Municipal schools came from the lowest three income deciles, and only seven per cent from the top three income deciles. The numbers for Private Voucher schools were 38 per cent and 18 per cent respectively.

Systems organised around parental choice, school privatisation and vouchers may have sizeable student movement between schools. According to the logic, competition and

[10] Author's calculations based on CASEN 2013.

choice are key drivers of school improvement, with schools expected to use all sorts of business intelligence to market themselves and attract students and their vouchers. Chile does display high levels of student movement across schools. However, this movement does not reach all types of families. Hsieh and Urquiola (2006) found that the movement has been mainly of aspirational families leaving Municipal schools to attend Private Voucher schools, resulting in higher levels of segregation -but without overall quality gains. They report from their research on student achievement that while there have been marked changes in school use as families have shopped around among schools there has not been overall gains in student achievement looking at students from across the whole system. They conclude that it is very likely that Private Voucher schools in Chile responded to the competition promoted by the voucher system not by raising school quality, but by selecting better students, producing a middle-class flight from Municipal schools to Private Voucher schools and greater social segregation.

Other factors also influence the patterns of school use and segregation across schools in Chile. Residential segregation, parental choice, student selection, and additional fees charged to families reflect institutional features linked to social segregation (Bellei, 2013; Elacqua, 2012; Elacqua & Fabrega, 2004; Valenzuela, Bellei & De los Rios, 2008).

Chile and some of its major cities, including Santiago, show high levels of residential segregation along socioeconomic lines (Sabatini et al., 2001). The spatial concentration of poverty in some geographical areas in Santiago is quite evident, and studies have estimated a value around 0.43 in the Duncan Dissimilarity Index for the city (where 0 means none and 1 means total segregation), showing detrimental effects on the social opportunities of the poor, including educational outcomes such as preschool attendance and school drop-out (Larrañaga & Sanhueza, 2007). Studies have confirmed that in the case of Chile, residential segregation is a relevant factor contributing to educational segregation, as parents tend to choose schools that are closer to their home (Carrasco & San Martín, 2012; Gallego & Hernando, 2009). However, evidence shows that educational segregation along social lines is not a mere reflection of the residential segregation that exists in Santiago, indicating that there are other institutional arrangements of the Chilean educational system that contribute to the separation of students along socioeconomic lines (Santos & Elacqua, 2016; Valenzuela et al., 2008; Valenzuela et al., 2013). Schools are more segregated than neighbourhoods, and the

evidence suggests that the interaction between parental choice and student selection mechanisms in a voucher system may promote school segregation beyond residential segregation (Santos & Elacqua, 2016).

While it is difficult to differentiate the institutional elements that shape parental school preferences from the choices of individuals, evidence in Chile confirms the theoretical postulations and international findings that affluent families are more likely to choose higher performing schools than families from lower social strata, producing academic and social segregation. Carnoy and McEwan (2003) found that less educated parents in Chile were less likely to seek higher performing schools than were more highly educated parents, and they theorise that these parents are less likely to use information about the quality of the schools because of the difficulties associated with its availability and interpretation. They also found that this result may be reinforced by the social pressures to exclude low income families from entering the best schools. Elacqua and Fabrega (2004) confirm these findings, reporting that low SES families are more likely to choose schools for practical reasons, are not well informed about the quality of schools despite available information, and use poorer information sources than families with more educated parents. There is evidence indicating that school choice in Santiago may be based more on SES factors than objective academic performance (Schneider, Elacqua, & Buckley, 2006).

A recent comparative study of school choice between Finland and Chile revealed that even though the Chilean educational system enjoys the availability of good quality information for school choice, families choose schools based on the social environment (reflected in the socioeconomic and cultural backgrounds of the families at school) such schools can provide to their children using informal sources of information, such as conversations with family members and acquaintances, friends, and to a lesser extent, school visits (Seppänen, Carrasco, Kalalahti, Rinne, & Simola, 2015). Another study found that over 70 per cent of Chileans prefer to send their children to schools with a similar background to their own (CEP, 2006).

It needs to be kept in mind that while many Chileans can feel stressed in the process of finding a school for their children, most of them accept and support educational choice as a core educational right (Seppänen et al., 2015). Yet, parents with low levels of education are twice as likely to accept a centrally assigned school for their children and significantly

less likely to believe their child would be accepted in their school of choice. The study by Seppänen et al. (2015) shows that while 80 per cent of parents believe that having monetary resources in Chile made school choice easier, and 70 per cent think that education should always be free of charge, low income parents were always more likely to hold these views than affluent parents.

Student selection based on social, academic, religious, ethnic and other characteristics, defies the freedom of parents to choose schools for their children (Gauri, 1998; McEwan & Carnoy, 2000)[11]. One study shows that Private Voucher schools are much more likely to use student selection processes than Municipal schools (Gauri, 1998). The latter are required to accept all applicants unless oversubscribed. In a market system where schools compete for students and their voucher, schools may see advantages in selecting students with academic potential including those from higher SES backgrounds, as they deliver the same funding resource as low SES students, and more likely to show stronger academic results in standardised tests (Valenzuela et al., 2008). This may provide incentives for Private Voucher schools to individually specialise in specific markets of students (Mizala & Torche, 2012). Hsieh and Urquiola (2006) argue that the voucher system in Chile has resulted in social segregation by type of school precisely because schools have responded to competition by selecting students based on academic and social advantages.

Finally, the shared funding policy (schools charging fees in addition to what they receive from the government through student vouchers) that is being gradually removed from 2015 over the next 10 years, was largely identified as a segregation mechanism in Chilean schooling. It was effectively an additional tool for Private Voucher schools to filter their student intake according to the socioeconomic status of families (Mizala & Torche, 2012). Most studies have found that schools that charge extra tuition fees to families in Chile tend to enrol a smaller proportion of low SES students than do fee-free Private Voucher and Municipal schools, and that within the Private Voucher sector, those schools that charge fees are more segregated than fee-free schools, promoting school segregation by type of school (Elacqua, 2012; Valenzuela et al., 2008).

[11] It will be interesting to monitor the effects on segregation of the law approved in 2015 that regulates student admissions in Chile.

As mentioned in the introduction of this thesis, Santiago holds a special or unique position within the country, hosting a large proportion of the country's population, economic productivity and cultural activity, but also showing the highest levels of income inequality, wealth concentration and residential segregation. Santiago has also been the centre of early development of educational privatization and segregation, where the neoliberal reforms have produced strong effects in terms of school provision and use. The relevance of a study of educational segregation and social cohesion in the city of Santiago is underpinned by these contextual characteristics.

4. METHODOLOGY

This chapter outlines the approach taken to studying the influence of educational segregation on social cohesion in Santiago.

The first section describes the methodology, sample and data gathered through the International Study of City Youth in Santiago (ISCY-Santiago) which is the study that provided data for the analysis of the association between educational segregation and social cohesion in Santiago. It then presents information on the various measure of social cohesion employed in the study, including a list of indicators used to examine the effects of segregation on social cohesion. The final section provides a description of the analytical techniques used to examine the data.

Data and sample: the International Study of City Youth in Santiago (ISCY-Santiago)

The data for this study comes from the International Study of City Youth (ISCY)[12]. ISCY is an international comparative and longitudinal study set up to compare how well school systems in 15 cities across Europe, North America, South America, and Australasia are preparing young people for further study, work and life more broadly. ISCY follows cohorts of 10th grade students in every participating city to find out about student pathways through school into further study and work. ISCY includes measures of family background, student achievement in math and reading, school experiences, student hopes and plans for the future, quality of instructional experience, student academic self-esteem, classroom learning climate, quality of student relationships with teachers and peers, social and emotional skills, student attitudes to school and life outside of school, social values and confidence in the economic and political systems. In addition to a student survey, teacher and principal surveys were used to collect information about the school context including school policies and practices as well as teacher perspectives on teaching practices, professional aspirations, teaching resources and program provision, among other things.

The base surveys for 10th grade students in Santiago (ISCY-Santiago) were administered in schools between April and July 2016. ISCY-Santiago included all the instruments

[12] To know more about ISCY, visit www.iscy.org.

developed by ISCY adapted to the local context and translated into Spanish. A qualitative validity procedure was conducted to ensure the quality of the instruments. In all, ISCY-Santiago involved a:

- 40 minute online survey for all 10th grade students in each participating school,
- 20 minute online math test and 20 minute online reading test, both adapted from OECD Programme for International Student Assessment (PISA) instruments,
- 30 minute online survey for all teachers of 10th grade students at each participating school, and
- 30 minute online survey for school principals.

The sample of schools and students for ISCY-Santiago was derived using a stratified cluster sample design. The first stage consisted of the selection of a sample of schools, stratified by organisational type (Municipal, Private Voucher and Private Fee) and by student SES intake (low, lower-middle, middle, upper-middle, high). Inclusion was based on using a proportionate stratified random sampling technique, where the sample size of each stratum defined was proportionate to the population size of the stratum, and schools were then selected randomly within each stratum. All 10th grade students in each participating school were included in the survey.

Available system data were used to group schools by stratum. Chile has extensive system wide official data about aspects of schools. The population of schools in Santiago used to draw the ISCY sample was based on two sources of data: (1) the official 2014 enrolment data of the Chilean Ministry of Education, and (2) the 2013 10th Grade SIMCE data of the Chilean Educational Quality Agency. Both datasets were merged at the school level to have information about student enrolments, gender composition, average SIMCE test scores, and average socioeconomic background of the families at the school. The merged data set provided a total of 958 secondary schools and combined schools with secondary classes covering the Metropolitan Region of Santiago.

The strata were defined by the administrative classification of the school, or what will be referred to as type of school (Municipal, Private Voucher and Private Fee), and the average socioeconomic status (SES) of families at the school defined by SIMCE. SIMCE conducts a cluster analysis using parental years of education, monthly household income and a student vulnerability index to separate schools into five SES categories (1) low, (2)

lower-middle, (3) middle, (4) upper-middle, and (5) high (Agencia de la Calidad de la Educación, 2012).

Schools in Chile are categorised according to their administrative and funding scheme into three main groups. The first is what essentially corresponds to public schools (equivalent to public schools in the United States, for example), which are managed administratively by municipalities (since 1981) with funding based primarily on public sources (student vouchers). According to the population dataset, there are 168 Municipal schools in Santiago providing secondary education, serving nearly 15,200 10^{th} grade students. The second category of schools are 'Private Voucher schools', which are the privately-run schools funded by the state through the student voucher. The population dataset shows that there is information on a total of 596 Private Voucher schools in Santiago serving about 46,000 10^{th} grade students. The third type of school covers the 'Private Fee schools' which are the schools that receive no state subsidies and rely entirely on parental contributions. In the population dataset, there are 194 Private Fee secondary schools listed in Santiago serving around 9,400 10^{th} grade students.

Recruiting schools to participate in ISCY-Santiago was quite demanding, and several benefits were offered to encourage participation, such as school reports with tailored results on their students. Where schools were unable to take part, replacement schools from the same strata were used, selected based on similar geographic location of schools within each stratum. Table 2 shows details on the final achieved sample for ISCY-Santiago by type of school and mean school SES, and the total number of schools and students used for the study. Figure 5 maps the location of the schools in the achieved sample across the urban area of Santiago.

Table 2 shows that there are some categories without any schools or students, such as low SES Private Fee. This is because there are no schools or students in the relevant strata. For example, there are no Municipal schools where the mean SES score of the families of users of the school would place the school in the highest band in Santiago, and similarly, all but 12 of the Private Fee schools in Santiago are in the highest SES band, based on mean scores of the school users. Private Voucher schools exist in every SES band.

There is a further distinction that is not immediately evident form the figures in Table 2, but which is very important to recognise. Some schools, both Municipal schools and Private Voucher schools, select students on the basis of their academic skills while other schools do not. The schools that operate as selective-entry schools tend to have a higher SES intake than schools which do not select students academically. This is a complicating element in looking at school segregation because it means that effectively public schools (Municipal) are of two types — selective and non-selective — and Private Voucher schools are also of two types — selective and non-selective. There are both types of selective-entry schools in the ISC-Santiago sample and it is important to recognise them as distinct.

Table 2 Population and achieved ISCY-Santiago sample, by type of school and SES

Number of schools

School SES*	*Population*				*Achieved Sample*			
	Municipal	*Private Voucher*	*Private Fee*	*Total*	*Municipal*	*Private Voucher*	*Private Fee*	*Total*
Low	71	44	0	115	3	2	0	5
Lower-Middle	69	188	0	257	3	2	0	5
Middle	18	207	0	225	2	5	0	7
Upper-Middle	10	145	12	167	1	3	0	4
High	0	12	182	194	0	1	5	6
Total	*168*	*596*	*194*	*958*	*9*	*13*	*5*	*27*

Number of students

School SES*	*Population*				*Achieved Sample*			
	Municipal	*Private Voucher*	*Private Fee*	*Total*	*Municipal*	*Private Voucher*	*Private Fee*	*Total*
Low	4,311	3,081	0	7,392	220	137	0	357
Lower-Middle	5,784	16,685	0	22,469	246	133	0	379
Middle	2,916	16,176	0	19,092	478	432	0	910
Upper-Middle	2,179	9,514	260	11,953	96	189	0	285
High	0	560	9,163	9,723	0	100	401	501
Total	*15,190*	*46,016*	*9,423*	*70,629*	*1,040*	*991*	*401*	*2,432*

* SES measure taken from year 10 SIMCE 2013 data.

Figure 5 Geographical distribution of schools in the achieved ISCY-Santiago sample

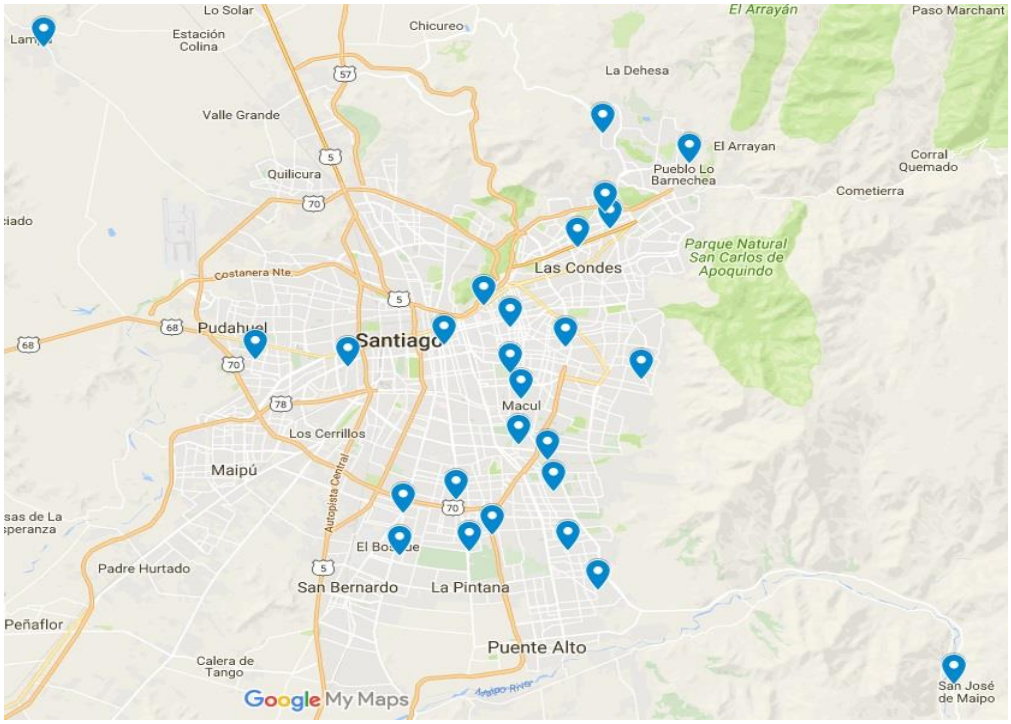


Table 3 Achieved ISCY-Santiago sample by five types of school and average SES

	Number of schools					
School SES*	*Municipal-Non Selective*	*Private Voucher-Non Selective*	*Municipal-Selective*	*Private Voucher-Selective*	*Private Fee*	*TOTAL*
Low	3	2	0	0	0	5
Lower-Middle	3	2	0	0	0	5
Middle	0	5	2	0	0	7
Upper-Middle	0	1	1	2	0	4
High	0	1	0	0	5	6
Total	*6*	*11*	*3*	*2*	*5*	*27*

	Number of students					
School SES*	*Municipal-Non Selective*	*Private Voucher-Non Selective*	*Municipal-Selective*	*Private Voucher-Selective*	*Private Fee*	*TOTAL*
Low	220	137	0	0	0	357
Lower-Middle	246	133	0	0	0	379
Middle	0	432	478	0	0	910
Upper-Middle	0	77	96	112	0	285
High	0	100	0	0	401	501
Total	*466*	*879*	*574*	*112*	*401*	*2432*

* SES measure taken from year 10 SIMCE 2013 data.

In order to recognise the different types of schools, the study has divided Municipal and Private Voucher schools into academically selective and non-selective schools. The sample of schools and students including the new categories are presented in Table 3. There are three large Municipal Selective schools (serving 574 10^{th} grade students in total) and two Private Voucher Selective schools in the sample.

Measures

Student and school socioeconomic and cultural background (SES)

Student SES index scores were created using data on student family background (parental education, parental occupation), and household cultural and material possessions, gathered through the ISCY-Santiago student survey. Applying a similar methodology to that used to create the Index of Economic, Social and Cultural Status (ESCS) developed for the PISA programme of the OECD (2002), this study conducted a principal component analysis to derive individual composite scores based on five scales (standardised) or dimensions. The first dimension was highest attained formal education qualification level of the mother/father, measured by a categorical variable and transformed into years of education. The second dimension was the highest level of parental occupation status, obtained from an open-ended question to students and coded using the International Standard Classification of Occupations 08 (ISCO-08) managed by the International Labour Organization (ILO). ISCO has been regularly employed by the OECD as part of PISA and PIAAC and other programmes, and Ganzeboom and Treiman (2010) describe it as the main instrument of classification and coding in comparative surveys. Once occupations were coded using ISCO-08, they were transformed into occupational status scores using the International Socio-Economic Index of Occupation Status (ISEI-08), which consists of a continuous scale of occupational status rather than a discrete measure, a widely used method to measure occupational stratification (Ganzeboom, 2010). The third dimension measured home possessions or wealth: number of mobile phones, televisions, computers, cars and bathrooms at home. The fourth dimension was based on family resources in the home that support education: availability of a desk to study, a quiet place to study, a computer for school work and internet access at home. The fifth dimension was based on cultural resources in the home measured as possession of musical instruments and number of books.

Table 4 shows the result of the principal component analysis including the five dimensions.

Table 4 Results for scaling student socioeconomic and cultural background (SES)

Index	Variables	Loadings	Cronbach's Alpha
Student SES	Highest level of parental education	0.82	0.70
	Highest level of parental occupation	0.81	
	Home wealth	0.74	
	Home resources for education	0.59	
	Cultural possessions	0.69	

School SES was calculated as the average student SES for each school in the sample.

Social segregation

In a landmark survey of twenty indices of segregation, Massey and Denton (1988) classified indexes into five broad categories: concentration, centralization, clustering, evenness and exposure. Measures of concentration have mostly been used in residential studies and rarely in education, and refer to the relative amount of physical space occupied by minority groups. Measures of concentration seek to observe how minorities are restricted to a small number of neighbourhoods that are also small in terms of the share of space they occupy in the city. Indices of centralization have also been mainly used in residential studies, as they refer to the extent to which minority groups are spatially located in the centre of a broader space, such as a city, a region or a country. Measures of clustering refers to the degree to which areas of minority concentration adjoin one another, forming larger enclaves of minority groups. The dimension of similitude (evenness) refers to the differential distribution of two social groups across areas in a city, so that complete segregation happens when no minority and majority members share a common area, and maximised evenness occur when all areas in a city have the same proportion of minority and majority members as the whole city. Finally, indices of exposure measure the possibilities of contact and interaction between members of different social groups within a given space, and can be understood as the likelihood of members of minority and majority groups sharing the same area. Measures of evenness and exposure are usually highly correlated.

This study is particularly interested in the dimensions of similitude (evenness) and exposure of educational segregation. This is mainly because of the theoretical and empirical framework about the causes and consequences of educational segregation used in this study. According to it, contact with different others and the level of diversity in schools is fundamental to explain the consequences of educational segregation, and indices of evenness and exposure are direct measures of these concepts. As mentioned before, measures of evenness and exposure are usually correlated, but while the first one focuses more on the fairness of distribution of individuals coming from different social groups, the latter emphasises the experience of segregation felt by individuals as a result of the possibilities of interaction and contact between members of different social groups (Massey & Denton, 1988).

There are several indices developed within the dimensions of evenness and exposure. Following the recommendations of Massey and Denton (1988), this study uses the index of dissimilarity as a measure of evenness, and the isolation index as a measure of exposure. The *index of dissimilarity*, also known as the Duncan dissimilarity index (Duncan & Duncan, 1955a), has been widely used in studies of educational segregation, as it estimates the percentage of students from a certain social group that would have to move to another school to achieve an even distribution. It can be interpreted as the proportion of all students in the different groups that need to be transferred so that all schools have the same social composition. The index varies between 0 and 1, where 0 means perfect integration (no minority student would have to move to another schools to achieve even distribution) and 1 implies complete segregation (Massey & Denton, 1988). The international literature suggests that values for this index between 0.0 and 0.3 indicate low levels of segregation, while values between 0.3 and 0.6 reveal moderate levels of segregation, and values above 0.6 reveal high levels of segregation or 'hyper-segregation' (Glaeser & Vigdor, 2000; Massey & Denton, 1993). Even though the dissimilarity index has some limitations, like its sensitivity to the size of the population of the minority group analysed and the number of units in which they can be distributed and that individuals can only be categorised into two social groups, it is easy to interpret and has been widely used and recognised as an adequate measure of educational segregation, which facilitates international comparisons (Massey & Denton, 1988). Furthermore, it has been used by Chilean researchers studying educational segregation (Bellei, 2010; Valenzuela et al., 2013), which will help to validate results derived from the current research. This last

consideration is especially important given that the ISCY study uses a representative sample of secondary schools in Santiago, and the calculation of any segregation index can be biased by the composition of schools and students in the sample.

As a measure of exposure, the *interaction index* estimates the probability that a minority member is exposed to members of the majority group. The interaction index is converse to the isolation index, which estimates the extent to which minority members are exposed only to one another, rather than members of other social groups. Both indices vary between 0 and 1, and in the case of the interaction index for education, it may be interpreted as the probability that a randomly selected minority student shares the same school with a student from the majority group (Massey & Denton, 1988). Unlike measures of evenness, indices of exposure depend on the relative size of groups that are being compared (e.g. if the majority group is a small proportion of the population, minority members will tend to have high levels of exposure to them even if they are not evenly distributed). However, measures of exposure are useful in social sciences as they are simple to explain, are widely used, and attempt to measure the experience of segregation by minority or majority group members.

Another methodology to explore the distribution of students coming from different social backgrounds is to estimate how much variation is observed between-schools compared to within-schools. This methodology is largely conducted in studies that use a multi-level design, where level 1 units, such as students, are nested in level 2 units, such as schools. Multi-level modelling recognises that observations are not independent, but rather related to each other as they are nested in higher units that influence them, such as classrooms, schools, districts and cities. This methodology not only allows for better estimation of the degree of variation in the dependent variable by school characteristics, after accounting for individual student differences, but also for disentangling how much of the variation in the dependent variable is found at each level (Raudenbush & Bryk, 2002; Willms, 2003).

Based on this methodology, the OECD (2016a) has created and repeatedly used the index of social inclusion to measure the degree of socioeconomic diversity across schools in different educational systems. The index of social inclusion is calculated as 100*(1-rho), where rho stands for the intra-class correlation of socio-economic background, i.e. the variance in the PISA index of social, economic and cultural status of students between

schools, divided by the sum of the variance in students' socio-economic background between schools and the variance in students' socio-economic background within schools. This means that a value of 100 in the index of social inclusion indicates perfect social inclusion: the total variance in student socioeconomic background is found within-schools. A value of 0 represents complete segregation, or that the total variance in student socioeconomic background is found between-schools.

All three measures—index of dissimilarity, isolation index, index of social inclusion—are used in the current study.

School learning environment and attitudes towards school and learning

Table 5 reports a number of scales from the opinions of students capturing the quality of school as a learning environment, and student attitudes towards school in terms of how much students value learning at school and how much they are connected and engaged in school. Learning environment is a relevant concept because research suggests that it influences student performance and capacity to learn, and shapes engagement in school work and social and emotional development (OECD, 2016b; Resnick et al., 1997). School learning environments shape students' sense of well-being at school and their perceptions of the quality of life at school. The scales in this section are useful for measuring the extent to which students have positive or negative opinions about their school environments in terms of the relationships with teachers, the disciplinary climate at school and levels of school efficacy. Furthermore, a set of five related scales measure student attitudes towards school and learning in terms of (1) how much students value school and learning, (2) student connectedness to school, and (3) emotional engagement, (4) behavioural engagement and (5) cognitive engagement.

The scale of school efficacy provides evidence of the quality of the academic experience at school from the standpoint of the students, an overall appreciation of the capacity of the school and teachers to deliver a good quality education for them and their future.

Good student behaviour is fundamental to create learning environments that are conducive to learning (OECD, 2016b). The student behaviour scale combines student perceptions about the general quality of student behaviour at school, and their opinions about the quality of student relationships with teachers and their peers.

There are several mechanisms through which positive teacher/student and peer relationships benefit students (see for example Davis, 2003). Positive bonds between students and teachers contribute to student well-being and a conducive climate for learning (Hamre & Pianta, 2001). Students show higher academic engagement when teachers care about them and build their academic confidence. Schools where teachers care about the welfare of their students provide environments that support social and academic outcomes, which are important for the long-term trajectory in school and eventually the labour market (O'Connor, Dearing, & Collins, 2011; Silver, Measelle, Armstrong, & Essex, 2005).

How students view the importance and value of what they do in school can have an impact on how well they do. The *value of learning* scale is directly related to the sense of knowing one's aims and goals, and knowing what to value according to it. The scale reflects how clear students are about their academic goals, and how they see education helping them to achieve those goals. Where students have clear, specific, and challenging goals it has been linked to higher task performance and goal achievement. All four items used for this scale refer to the usefulness of what students learn at school to achieve goals. In this sense, the scale measures how much they value what they learn at school for their future, and how important they believe education is to achieve their future goals.

Student emotional experiences at school affect their capacity to become high achievers, as well as engaged, confident, motivated and social, qualities supporting success in adult life. Increasing evidence suggests that students that feel an emotional connection to school are less likely to engage in antisocial and unhealthy behaviours such as bullying, sexual violence and substance abuse, and report higher levels of well-being (McNeely, Nonnemaker, & Blum, 2002). The school connectedness scale provides a measure of the overall student attachment to school.

Table 5 Results for scales measuring quality of school life

Index	Items	Values	Scaling Method	Loadings	Cronbach's Alpha
School environment measures					
School efficacy	Having really good teachers	Likert scale	PCA	0.68	0.76
	Having interesting subjects to do			0.75	
	Getting good results			0.60	
	Getting the best out of you			0.77	
	Helping you plan your career			0.76	
Student behaviour	Most students get on well with each other	Likert scale	PCA	0.74	0.66
	Most students treat teachers with respect			0.80	
	Students are well-behaved			0.77	
Relationship with teachers	The teachers are friendly	Likert scale	PCA	0.85	0.69
	Teachers really care about their students			0.85	
	I get on well with most of my teachers			0.66	
Attitudes towards school and learning					
Value of Learning	Working hard in school matters for success in the workforce	Likert scale	PCA	0.76	0.83
	What we learn in class is necessary for success in the future			0.87	
	School teaches me valuable skills			0.8	
	My classes give me useful preparation for what I plan to do in life			0.83	
Connectedness to school	I like being at school	Likert scale	PCA	0.80	0.74
	I feel safe at school			0.74	
	I will leave this school with good memories			0.69	
	Happy with life at school	Satisfaction scale		0.77	
Cognitive Engagement	In class, I try to work as hard as possible	Frequency scale	PCA	0.89	0.82
	In class, I keep working even if the material is difficult			0.79	
	In class, I put in my best effort			0.90	

Table 5 – continued from previous page

Index	Items	Values	Scaling Method	Loadings	Cronbach's Alpha
Attitudes towards school and learning					
Behavioural Engagement	Skipped a class without permission	Frequency scale	PCA	0.67	0.66
	Been absent from school for a day without permission			0.58	
	Been in trouble with a teacher because of your behaviour			0.72	
	Been suspended from classes			0.61	
	I get into trouble frequently at school			0.66	
Emotional Engagement	School is often a waste of time	Likert scale	PCA	0.77	0.62
	I find most school work boring			0.78	
	How would you rate your level of interest in school work?	Quality scale		0.72	

There has been a growing interest in the topic of student engagement in school. Student engagement refers to the level of commitment or involvement students have in school, and include three different domains related to how students behave, feel and think.

The literature has generally understood student cognitive engagement as the psychological investment students make to understand, comprehend and master the knowledge and skills that schools intend to teach (Connell & Wellborn, 1991; Newmann, Lamborn, & Wehlage, 1992). In this sense, students who are cognitively engaged are psychologically motivated to learn, and they give their best during classes and do not give up even if the material is challenging or difficult to learn. In general, studies have found that cognitive engagement is positively related to academic outcomes (for example, see Nystrand and Gamoran, 1991).

Some definitions of behavioural engagement are similar to the conceptualization of cognitive engagement, as they stress the importance of student effort to learn and master the skills taught in class. From this perspective, the domains to observe are student effort, persistence, concentration, attention and contribution in class (Birch & Ladd, 1997; Finn, Pannozzo, & Voelkl, 1995; Skinner & Belmont, 1993). However, behavioural engagement has also been understood as the capacity of students to follow school rules and classrooms norms, and to avoid disruptive and forbidden conduct such as skipping

classes or disrespectful talk. Furthermore, some scholars have emphasised that behavioural engagement relates to student participation in extra-curricular school activities such as literacy programs, sports and student council. Studies that have considered these different definitions of behavioural engagement, in general, find a positive correlation with student academic achievement and a negative association with dropping out of school (Fredricks, Blumenfeld, & Paris, 2004). In turn, research around the world has demonstrated that students who drop out from school are more likely to become unemployed, stay unemployed for longer, have lower earnings, and accumulate less wealth during their life (see for example Lamb, Markussen, Teese, Sandberg, & Polesel, 2011). (Lamb et al., 2011)(Lamb et al., 2011)(Lamb et al., 2011)(Lamb et al., 2011)(Lamb et al., 2011)(Lamb et al., 2011)(Lamb et al., 2011)(Lamb et al., 2011)(Lamb et al., 2011)(Lamb et al., 2011)(Lamb et al., 2011)(Lamb et al., 2011)(Lamb et al., 2011)(Lamb et al., 2011)(Lamb et al., 2011)

According to Connell and Wellborn (1991) and Skinner and Belmont (1993), student emotional engagement refers to the affective inner processes in students triggered by school events, such as happiness, anxiety, sadness and boredom. These emotions could be related to student/teacher relationships, peer relationships, school procedures or the learning process. A few researchers have found a positive link between emotional engagement and student achievement, but greater evidence has been gathered about the negative relationship with the likelihood to drop out of school, especially for vulnerable students (see Fredericks et al., 2004).

Student skills

A range of studies over recent years have pointed to diverse sets of student skills as having a direct positive relationship with how well a student does in school as well as her or his future outcomes (see for example, Farrington et al., 2012; Lamb, Jackson, Walstab, & Huo, 2015). In addition to content knowledge and academic skills, students need to develop sets of behaviours, skills, attitudes, and strategies that are important to academic performance in their classes, as well as helping them negotiate transition to further education and careers, and active participation in community life. Although there is debate about which skills these are and their classification (National Research Council, 2013), they are sometimes divided into groupings labelled as ‘cognitive skills’ and ‘social and emotional skills’. Measures of cognitive skills used in this study are captured by

student performance on tests in reading and math. By social and emotional skills, sometimes referred to as "21st century skills", "soft skills" or "deeper learning", this study refers to a set of student self-reported competencies for managing behaviour and emotions to achieve goals, and to express ideas interpreting and responding to messages from others (National Research Council, 2013).

Social and emotional skills are sometimes split into two main sorts: intrapersonal and interpersonal. *Intrapersonal skills* refer to the capacities of individuals to manage behaviour and emotions and help them solve problems and achieve goals. Intrapersonal skills operate across contexts, and are transferable to different situations in life (Hoyle & Davisson, 2011). metacognition, a broad intra-personal skill that allows students to reflect on and adjust their individual learning strategies, is viewed as enhancing student learning and academic performance (Ford, Smith, Weissbein, Gully, & Salas, 1998; National Research Council, 2013; Pintrich & De Groot, 1990; Winne & Nesbit, 2010; Zimmerman, 1990). Self-management and conscientiousness are two well-studied intra-personal skills that help student learning, academic performance and life beyond school.

Self-management, also studied under the concepts of self-control and self-regulation, refers to the ability to successfully regulate one's own emotions, thoughts and behaviours in different situations. Individuals who have high levels of self-management are more able to control their stress levels, manage their impulses and to be motivated. They also have the ability to set personal and academic goals and work towards them. Some related concepts are impulse control, stress management, self-discipline, self-motivation, goal orientation and organizational skills. It has been argued that students with high self-management skills come better prepared to classes, pay more attention during classes, are more likely to follow the directions given by the teacher, allow others to speak without interrupting and work independently with a clear focus. Research has linked self-control with positive outcomes in secondary education and in adult life (Collaborative for Academic Social and Emotional Learning (CASEL), 2017).

In their exploration of the relevance of psychological traits for economics, Almlund, Duckworth, Heckman, and Kautz (2011) argued that personality traits are just as important as cognitive measures to predict academic and economic success, and other social outcomes such as health and criminal activity. They also contended that

conscientiousness is the best of the Big Five traits[13] to predict a series of outcomes, including educational attainment, academic achievement, job performance and wages across a wide range of occupations (Almlund et al., 2011). Other studies have found a strong association between conscientiousness and academic performance and occupational outcomes (National Research Council, 2013; Poropat, 2009, 2014). Conscientiousness can be defined as a form of self-discipline, as the tendency to be organised, responsible, and hardworking (American Psychological Association, 2007). Conscientiousness relates to the capacity of being responsible, dependable, caring, organised, persistent, motivated and above all, it is linked to tenacity or grit. In this study, student conscientiousness is measured by self-reported questions related to student effort displayed in class, getting work done on time, perseverance and hard working.

Interpersonal skills, according to the Collaborative for Academic Social and Emotional Learning (CASEL) (2017) are the skills individuals use to build relationships with other individuals or groups of people. They also involve the ability to communicate clearly, listen to and cooperate with others, resist inappropriate social pressure, negotiate conflicts and seek and offer help when necessary. The dimensions involved include communication skills, collaboration skills, social commitment and teamwork. In a study using nationally representative data on kindergarteners and fifth graders, Duncan and Magnuson (2011) found that children with lower levels of inter-personal skills during elementary school were less likely to graduate from high school and attend college. In this sense, inter-personal skills support deeper learning and enhance academic performance (National Research Council, 2013). From a broader perspective, a whole range of business related literature has developed under the premise that inter-personal skills are fundamental to succeed in the labour market.

The items related to student collaboration used in this study ask students broader inter-personal questions regarding their abilities to understand others feelings, get along with others, work well in groups, treat others fairly and take time to help others. The items designed to measure communication skills relate to the ability to transmit ideas clearly in both written and oral formats, and leadership skills associated with the ability to get ideas across and lead others.

[13] According to the American Psychological Association (2007), the Big Five traits are openness, conscientiousness, extroversion, agreeableness, and neuroticism.

Table 6 shows the list of cognitive and social and emotional skills included in this study. The study followed the conceptual framework and methodology presented by (Lamb, Jackson, & Rumberger, 2015) in the development of the ISCY scales. ISCY-Santiago used an ISCY math and reading online test adapted from the OECD Programme for International Student Assessment (PISA) to measure student proficiency in both subjects. In Santiago, students had 20 minutes to answer 26 items in the Reading test, followed by 20 minutes to answer 32 items included the Math test. The items included were of varying levels of difficulty, and the final student scores were calculated based on the number of correct items scaled according to level of difficulty.

Table 6 Results for scaling student skills

Index	Items	Values	Scaling Method	Loadings	Cronbach's Alpha
		Cognitive Skills			
Reading skill	Test score	Dichotomous	Sum	N/A	N/A
Math skill	Test score	Dichotomous	Sum	N/A	N/A
		Social and Emotional Skills			
Intrapersonal skills					
Self-Management	I am easily distracted in class	Likert scale	PCA	0.72	0.62
	I tend to be lazy			0.79	
	I tend to leave things to the last minute			0.76	
Conscientiousness	In class, I put in my best effort	Frequency scale	PCA	0.72	0.74
	I always get work in on time	Likert scale		0.73	
	I persevere with a job until it is done			0.71	
	I am a hard working student			0.83	
Interpersonal skills					
Collaboration	I understand how others are feeling	Likert scale	PCA	0.72	0.67
	I get along well with others			0.64	
	I work well in groups			0.63	
	I treat others fairly			0.66	
	I take time to help others			0.62	
Communication	I express ideas clearly in oral presentations	Likert scale	PCA	0.79	0.71
	I express ideas clearly in written text			0.71	
	People listen to me			0.65	
	I am good at leading others			0.76	

Student work and study plans

The study uses a set of six measures to explore student work and study plans, described in Table 7. Work and study plans are important because they reflect both personal aspirations which can be influenced by family and peers and the structure of opportunities associated with school organisation and programs. In terms of school organisation, school characteristics and processes like availability of resources, peer relationships, teacher expectations and school climate may all affect student plans.

Table 7 Student work and study plans

Work and Study Plans	Items	Values
High School Program	What type of certificate would you like to study next year?	1=Scientific-Humanistic (Academic); 0=Technical-Professional /Artistic-Sportive (Vocational)
University Entrance Exam	Once you finish school, would you like to sit at PSU?	Dichotomous scale
Post-school Plans	What are your plans after you finish school? • Study at a Pre-university • Study at a University • Study at a Professional Institute/ Centre for Vocational Training • Find a job	Present in any of the first three priorities Present as a first priority

The student work and study plans used in this study have been specifically designed according to the Chilean education system, as student choices are limited by the structure of opportunities provided by the system. There are five main study and work options that 10^{th} grade students need to plan for and decide on:

(1) the type of program they will take in the last two years of secondary education—academic or vocational,

(2) at the completion of high school, whether or not they will sit the university entrance exam which will determine if they can gain a university place,

(3) whether or not they will prepare for the university entrance exam at a pre-university right after school,

(4) the type of tertiary institution they would like to study at, or

(5) whether they will seek to find a job.

In Chile, 10th grade students need to decide what type of high school path they will follow in 11th and 12th grades: Scientific-Humanistic (general academic), Technical-Professional or Artistic-Sportive (both considered vocational programs). All schools are required to provide the same general education during the first two years of secondary education (9th and 10th grade), even though they are offered as Scientific-Humanistic, Technical-Professional or Artistic-Sportive, and then in the final two years provide specialised subjects related to the specific program. Selection of high school program is important because, as in many other countries around the world, the choice of vocational education carries significant consequences for future opportunities (for example see Bishop and Mane, 2004; Lamb, 2008).

In a study of the effects of early career decisions on future opportunities in Chile, Farias (2013) found that student SES, cultural values, pressures from the external environment and self-image were all correlated with enrolment in different types of secondary schools specialising in the different programs. Furthermore, he found that studying at a technical-professional (vocational) secondary school was associated with lower scores in the tertiary education entrance exam, and to lower rates of completion of tertiary education. His findings suggest that the choice between humanistic-scientific and technical-professional education contributes to social inequality in Chile beyond the type of school they attend –public or private. As mentioned before, this is not unique to Chile, and the OECD (2007) consistently presents figures showing that students enrolled in vocational programs in secondary school score significantly lower in academic tests compared to students enrolled at general or academic programs, even after controlling for socioeconomic status. As Arum and Shavit (1995) suggest, this could be due to several reasons, such as less demanding curricula, lower performing teachers, negative peer effects, stigmatization and declining expectations. In this sense, the type of academic path students choose for the last two years of secondary education in Chile is highly relevant for their opportunities to succeed later in life.

The next two measures of study and work plans for secondary students in Chile is firstly whether students sit the tertiary entrance education exam (Prueba de Seleccion Universitaria, PSU) and, secondly, what their plans are after finishing school. A good score in the PSU is fundamental to access a good quality university program in Chile, while technical tertiary education programs in general do not require a PSU score. The

higher the PSU score, the greater the chances to gain access to prestigious university courses and professions, and, subsequently, greater access to the high private returns that some of the more prestigious professions offer (Muñoz & Redondo, 2013). This is very important in Chile, as the differences in salaries of graduates from different types of careers and tertiary institutions vary considerably. Mizala and Romaguera (2004) estimated that in 2000, individuals who completed a university degree earned 3.68 times more than people who completed secondary education. For comparison, the same wage differential in the United States ranges from 1.20 to 1.70. The estimation for individuals who completed a technical higher degree was 1.88, and 1.55 for those who studied but did not finish a university or technical degree. Mizala and Romaguera (2004) argue that the wage gaps found in Chile according to type and level of education are growing and are quite high compared to other countries. Other studies have found that while all university careers in Chile are from a return on investment perspective 'cost-effective', there is significant variation among them in terms of earnings, with engineering and health careers offering the highest rates of internal return and net present value, and teaching and architecture the lowest (Lara, Meller, & Valdés, 2009; Rappoport, Benavente, & Meller, 2004). It is precisely those university careers with higher returns that are more selective and require top scores in PSU. Elfernan, Soto, Coble, and Ramos (2009) found that getting a score in the top 30 per cent of the PSU raises income around 20 per cent.

Given the relevance of PSU scores to gain access to a good career and later employment and income, a number of institutions have formed to prepare and coach students to increase their scores at PSU, called pre-universities. While some students choose to attend these courses during their last year of secondary school and be able to sit at PSU at the end of the school year (usually November of each year), others decide to postpone their participation in the university entrance exam and enrol at a pre-university once they have finished school.

In sum, student choices regarding type of program during the last two years of secondary school, whether or not to sit the PSU and or attend a pre-university, and type of tertiary institution and career, have important future consequences for Chilean students, and the exploration of their plans in these matters help explain differences in opportunities and success in later life.

Skills and dispositions towards social cohesion

The indicators to measure the effects of segregation on student attitudes and dispositions towards social cohesion take into consideration the five categories proposed by Jenson (1998). They are: (1) belonging, (2) inclusion, (3) participation, (4) recognition, and (5) legitimacy. According to Jenson (1998), the dimension of belonging represents the sense of shared identity and values that allow individuals to feel part of a community and commitment to each other and to what the community represents. A sense of belonging to a community is a sense of connection and pride towards that community, and is associated with individuals willing to contribute to that community (Markus, 2013). Being part of a community requires individuals to respect the norms and rules that protect public goods and common welfare. This is a basic rule to live in society. As will be explained later, people that feel part of a community tend to have higher levels of trust in other members of that community than do people that don't feel the same sense of membership. Democracy requires a strong civil society, and individuals who have a sense of the importance of civic engagement to strengthen democracy, and that have an understanding of social inequality and an interest in the welfare of others.

The dimension of inclusion refers to the extent to which citizens have equal access to resources and benefits, including education, employment, healthcare and housing. However, Jenson (1998) argue that this dimension refers mainly to the capacity of economic institutions and especially the market to provide equal opportunities for full participation in society. The opposite side in the spectrum of social inclusion is social exclusion, or failure to participate in key activities of society characterised by economic marginalization through unemployment, low salaries, lack of social protection and benefits, unequal access to healthcare and education, and so on (Burchardt, Le Grand, & Piachaud, 2002).

As mentioned before, participation in civic activities such as doing voluntary work, voting in elections and joining political organizations, has been widely used as an indicator to measure civic engagement and level of social capital (Markus, 2013; Putnam, 2000). Political disenchantment and non-involvement threatens social cohesion (Jenson, 1998).

The dimension of recognition of other world views refers to the degree to which members of a society feel that they are accepted, respected or rejected by others members of the

community. This dimension relates to experiences and opinions about discrimination, prejudice, tolerance and respect of individuality and diversity. It is very important to clarify that this dimension of social cohesion does not attempt to force a single view of society, but rather to accept that pluralism and diversity of ideas and values are beneficial to society and should be respected and appreciated (Jenson, 2010).

Finally, social cohesion depends on the legitimacy of the institutional arrangements of a society. In democratic societies, institutional legitimacy can be explained as the generalised perception that institutions in the social order are valid and fair, and are dedicated to enhance democracy and social well-being. Societies with widespread disapproval of institutional action towards these ends threaten their capacity to remain cohesive (Jenson, 1998). In many cases, institutional legitimacy has been associated with levels of public confidence in institutions such as political, public, private and social institutions.

Table 8 presents descriptive information on the sets of skills and dispositions for social cohesion considered in this study.

Table 8 Skills and dispositions towards social cohesion

Index	Items	Values	Scaling Method	Loadings	Cronbach's Alpha
Sense of belonging					
General Trust	Generally speaking, would you say that most people can be trusted?	Dichotomous	N/A	N/A	N/A
Civic Honesty	Claim government benefits to which you are not entitled Avoid paying a fare on public transport Cheat on taxes if you have a chance	Dichotomous	Standardised Valid Average	N/A	0.46
Importance of Civic Engagement	Always vote in elections	Importance scale	PCA	0.90	0.74
	Being active in social or political associations			0.90	
Importance of Civic Altruism	Helping people in Chile who are worse off than yourself	Importance scale	PCA	0.95	0.88
	Helping people in the rest of the world who are worse off than yourself			0.95	
Sense of fairness					
Economic Fairness	Big corporations make too much profit	Likert scale	PCA	0.74	0.62
	The gap between those with high incomes and those with low incomes is much too large			0.69	
	The economic system generally favours the wealthy			0.73	
	The economic system adequately looks after the poor			0.56	
Civic participation					
Interest in Political Issues	Political issues affecting your local community	Interest scale	PCA	0.90	0.88
	Political issues affecting Chile			0.93	
	Political issues affecting other countries			0.87	
Interest in Social Issues	Air pollution	Interest scale	PCA	0.82	0.85
	Animal welfare			0.75	
	Climate change			0.79	
	Rights of workers			0.75	
	Racism			0.76	
	Terrorism			0.67	
Civic Engagement	Post your views about a political issue on a website	Likelihood scale	PCA	0.73	0.77
	Attend a rally or demonstration			0.75	
	Join an action group of any kind (e.g., Greenpeace, Amnesty International)			0.82	
	Join a student organization or movement			0.80	
Institutional Membership	Do unpaid or voluntary work	Likelihood scale	PCA	0.66	0.48
	Join a political party			0.70	
	Join a church, synagogue, mosque, or other religious institution or organization			0.74	

Table 8 – Continued from previous page

Index	Items	Values	Scaling Method	Loadings	Cronbach's Alpha
Recognition of other world views					
Views on Poverty	Poor people are lazy	Dichotomous	N/A	N/A	N/A
	Most poor people aren't very smart	Dichotomous	N/A	N/A	N/A
Views on School Integration	Do you think Catholic and Non-Catholic students should go to the same schools or to separate schools?	Dichotomous	N/A	N/A	N/A
	Do you think boys and girls should go to the same schools or to separate schools?	Dichotomous	N/A	N/A	N/A
	Do you think rich and poor students should go to the same schools or to separate schools?	Dichotomous	N/A	N/A	N/A
Institutional trust					
Trust in Political Institutions	How much confidence do you have in the following institutions?	Confidence scale	PCA		0.86
	- The government			0.85	
	- The courts			0.73	
	- Political parties			0.89	
	- Parliament			0.91	
Trust in Private Institutions	How much confidence do you have in the following institutions?	Confidence scale	PCA		0.81
	- The press			0.76	
	- The media			0.77	
	- Big firms			0.84	
	- Banks			0.81	

Sense of belonging

Trust is a key measure of sense of belonging, and an important measure of social capital and social cohesion. Trust, according to researchers on social cohesion, enhances cooperation and collective action, and has been associated with significant individual and social benefits (Fukuyama, 1995; Putnam, 2000; Uslaner, 2002). There are many definitions of trust, but one is that trust exists whenever there is a willingness to allow others to have some influence on something that is important and can affect us. Trust is an individual's general disposition to believe that, on average, the consequences of letting others (people, institutions) carry out actions that will have an effect over us are positive.

Studies on the relationship between trust and social cohesion have focused on measures of general trust in others (general social trust) and trust in institutions (institutional trust). Generalised trust is trust towards strangers of whom no direct information is available and that is developed when "a community shares a set of moral values in such a way as

to create regular expectations of regular and honest behaviour" (Fukuyama, 1995). It is easy to understand generalised trust as opposed to particularised trust, which is developed from face to face interactions (Bjørnskov, 2007). Social trust is crucial to understand human collaboration when no self-interest is involved, or when the economic rationale fails to explain the association between individuals who have a common purpose without self-gain (Fukuyama, 1995). In general, countries with higher levels of generalised trust enjoy higher economic growth, institutional development and individual life satisfaction (see for example Bjørnskov, 2007).

The ISCY student survey for Santiago included a variation of the commonly used question used by Rosenberg (1957) to measure general social trust: "Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?". This measure of trust has been criticised for its ambiguity and lack of context: it is not clear who the respondent has in mind when is thinking about "most people" and "careful", and in what circumstances and settings they are thinking of when deciding if they generally trust most people (Nannestad, 2008; Reeskens & Hooghe, 2008). Others have pointed out that the possible answers to the question are not mutually exclusive (Naef & Schupp, 2009), and that they relate more to trust and caution than trust and distrust (Miller & Mitamura, 2003). However, the item has been used as one of the main indicators in surveys and research studying trust over the past four decades around the world (Huang et al., 2011; Uslaner & Brown, 2005), and seems to produce valid and reliable scores to measure generalised social trust (Bjørnskov, 2007). In order to overcome some of the weaknesses of this indicator, the ISCY survey asked "Generally speaking, would you say that most people can be trusted", and used a dichotomous answer of "Yes" or "No". This modification allows to keep comparability with other sources that use the original question of general trust, and at the same time lessens some weaknesses by providing a clearer statement and categories of answers.

The capacity of societies to remain cohesive also depends on the availability of citizens dedicated to the common welfare, even at the cost of individual gains. From a basic sociological perspective, social order depends on individuals willing to comply with social norms and rules that limit individual actions. According to Scott (1971), social norms are learned and internalised through the application of social sanctions, acting as consequences of deviant behaviour. Parsons would argue that social order depends on the

correspondence between institutionalised values or norms and values internalised by individuals, similar to Weber's notion of institutional legitimation (Habermas, 1996). For Weber, social order not only rests on normative consensus; it requires external guarantees such as convention or law, in the form of informal disapproval of deviant behaviour and formal sanction applied by specialised legitimated authority. For Parsons, law represents a safety net for a functional social system interdependence, like a central structure of society. From these perspectives, individuals who accept and internalise society's norms and system of law are well-functioning citizens, and allow the political system to run smoothly; individuals engaged in deviant behaviours put social order at risk.

According to Akers (1973), deviant social behaviour is acquired through direct conditioning and through imitation, and is strengthened when individuals believe that the negative consequences of their behaviours are not enough to offset the positive ones. Deviant behaviour is more likely to result when there are frequent individual interactions with other individuals who engage in and approve crime. The most relevant social instances that shape social behaviour are those in which the group controls the major sources of reinforcement and punishment, providing behavioural models as examples. The most relevant of these instances are the ones that include the family and friends, being schools a significant place to develop social behaviour (Akers, Krohn, Lanza-Kaduce, & Radosevich, 1979).

This study includes three questions oriented to measure student dispositions to deviant social behaviour grouped under civic honesty: if students would ever claim government benefits to which they are not entitled, avoid paying a fare on public transport, and cheat on taxes if they have a chance. These three questions relate to issues that concern the public good, since engaging in these activities is not only against the law, but also imply negative consequences for others and the community in terms of access to social benefits, cost of public transport and government revenues.

From the liberal and policy traditions, civic engagement has been considered one of the most relevant indicators to explain the consolidation of democracies and the promotion of social cohesion (Putnam, 2000). This is because successful outcomes in issues like employment, education, economic growth, poverty and democratic governance, are more likely in societies where individuals are civically engaged with their communities (Putnam, Leonardi, & Nanetti, 1994). On the contrary, problems associated with

democratic governance and even economic success can be attributed to declines in social civic engagement (Putnam, 2000). The discussions around active citizenship, especially in Europe, confirm the idea that active participation in civil society characterised by mutual respect and protection of human rights and democracy, is a promoter of social cohesion (Hoskins, 2006; Hoskins & Mascherini, 2009). Although the debate about the relationships between civic engagement and social outcomes is still open, it is safe to assume that societies benefit from an engaged civil society.

Knowledge of democratic values and institutions, and willingness to participate in society (by voting or joining institutions) have been the most common links between schools and civic engagement (Torney-Purta, 2002). However, modes of engaged citizenship clearly extend beyond these measures, especially in a globalised world of expanding frontiers and redefinitions of individual ties with society. This study uses three approaches to understand student dispositions to engage in civic activities: how important it is for them to participate, how much interest they have in social issues, and how likely they are to join institutions. In this section of belonging and shared values, the interest is on how important students believe that it is to always vote in elections and being active in social or political associations. These questions help to explore if all students have the same awareness of the importance of civic engagement for the well-being of their society.

The scale denominated "importance of civic altruism" measures the level of concern students have of social inequalities in Chile and in the world, and the importance they give to solidarity as a value to promote equality. Altruism refers to the disposition to do something for others for their own sake, rather than pursuing the self-well-being (Post, Underwood, Schloss, & Hurlbut, 2002). The ultimate goal of altruism is to increase the welfare of others (Batson, 1994). It is interesting to note that while altruistic behaviour may be motivated by many factors (personal trait, family, experience, group membership, etc), it has been found to be socially affected and malleable. Research has found that individuals that have had direct contact with individuals in need are more likely to act altruistically, moved either by compassion or by taking the perspective of others (see Mattis et al., 2009, for a brief review).

Civic altruism is relevant for social cohesion because there is a link between social engagement and civic altruism, as individuals who are socially disengaged are less likely to be aware and willing to help others in need (Mattis et al., 2009). On the other hand,

prosocial behaviour like civic altruism promotes collaboration and antisocial behaviour prevents it. It is worth noting that prosocial behaviour not only represents levels of trust in others, it also needs trust to exist (Zischka, 2016). In other words, civic altruism is related to social cohesion in that it is associated with social engagement and levels of trust.

By contextualizing altruism to social units such as Chile and the world, the questions included in the scale "importance of civic altruism" measure student general awareness of social inequalities, and their disposition to increase the welfare of others who are worse than themselves. In this sense, it measures civic altruism as the willingness to help others in general conditions, as opposed to helping someone specific in a precise situation. Ultimately, this scale reflects student values in terms of how much they care for others and how responsible they feel for the fate of those in a disadvantaged position.

Sense of fairness

While there is widespread agreement that unfair economic systems jeopardise the promotion of social cohesion and democratic stability (Nolan et al., 2014; Stiglitz, 2012), recent research has found that individual perceptions of economic fairness have a strong effect on levels of political support and democratic commitment, beyond individual socioeconomic characteristics (Jost & Major, 2001; Kluegel, Mason, & Wegener, 1995; Kumlin, 2002). The implications for social cohesion are relevant, because individual perceptions of economic fairness are not always symmetrical to indicators of income inequality and distribution (Aalberg, 2003; Malahy, Rubinlicht, & Kaiser, 2009; Sachweh, 2012), but they are nonetheless associated with social conflict and lower political engagement (Noll & Roberts, 2003). Zmerli and Castillo (2015) found that in the case of 18 Latin American countries, income inequality affects trust in political institutions through objective measures and subjective perceptions of economic fairness separately. In this sense, social cohesion is not only eroded by economic inequality itself, but also by individuals' perceptions of inequality.

The ISCY student survey approaches the dimension of inclusion through four questions oriented to measure perceived fairness of the Chilean economic system, that were later combined into a scale called "Perceptions of economic fairness". The questions address issues like the amount of profits obtained by big corporations, the income gap between the rich and the poor, and the extent to which the economic system favours the wealthy

and protects the poor. This measure provide a sense of students' perceptions of the level of inclusion/exclusion provided by the economic system in Chile, beyond structural conditions of economic inequality that may also erode social cohesion.

Civic participation

The associative capacity of the civil society through participation in voluntary associations, institutions and democratic processes have been regarded by many as one of the core mechanisms through which societies can promote social cohesion.

The PCA analysis of the data in this study reveals that there are four separate dimensions of participation among secondary students in Santiago: level of student interest in political issues at a local, national and international level; level of student interest in social issues such as animal welfare, climate change and racism; how likely they are to get engaged in civic activities such as posting their views about a political issue on a website, attending a rally or demonstration, joining an action group of any kind (e.g., Greenpeace, Amnesty International), and joining a student organization or movement; and how likely students are to join unpaid or voluntary work, or become members of a political party or a religious institution. These measures provide a good account of the level of engagement and civic participation students are likely to exercise.

Recognition of other world views

The first set of indicators of the level of recognition of other world views relate to students views about poverty. To look at attribution, items were included on whether or not students believe that poor people are poor because they are lazy or also because they are not very smart. Insights into these beliefs are important because attributions of poverty correlate with attitudes towards poverty, and early studies have found that in general people identify internal causes of poverty (laziness, poor effort, lack of intelligence) to be more important than external ones (labour market structure, public welfare, unequal opportunities, etc) or fate (sickness, disability) (Cozzarelli, Wilkinson, & Tagler, 2001). This distinction is relevant to the measurement of social cohesion, since the belief associated with the internal causes of poverty relate to the conviction that the world is a just place where individuals get what they deserve, and tend to neglect the influence that institutions and social arrangements may have over people's chances to succeed (Furnham & Gunter, 1984; Zucker & Weiner, 1993). The acknowledgment that external factors may be part of the cause of poverty is correlated with prosocial behaviour, such

as sympathy for the poor, willingness to help those in need and engage in welfare support. Attributions for poverty blaming individuals have been linked to the opposite behaviours (Bullock, Williams, & Limbert, 2003; Kluegel & Smith, 1986; Zucker & Weiner, 1993).

The second set of indicators relate to student views about school integration, and are designed to explore the views of students about diversity in schools in terms of gender, religion and socioeconomic background. The three items included under this concept measure whether students believe that Catholic/non-Catholic, boys/girls and rich/poor students should attend the same schools or study at different schools. These measures are helpful to understand if students value diversity and pluralism not only from a theoretical standpoint, but from the perspective of their own learning environment. Although the study could not explore the reasons why students chose their answers, they resemble the extent to which they believe education is enriched by diversity and challenge the idea that schools should be contained spaces of members of homogeneous social groups. As explained before, studies have found that schools that promote diversity and positive intergroup contact are better prepared to provide students with the necessary skills to interact with different others while at school and later in life, fostering collaboration, communication skills and the capacity to accept others and to handle difference and diversity (Bjørnskov, 2007; Mickelson & Nkomo, 2012). Social cohesion depends on this, as it increasingly requires individuals ready to cope with growing diversity and dissensus (Jansen et al., 2006).

In all, both sets of measures are helpful to understand how students view the world, and their dispositions towards sharing with different others in a common life.

Institutional trust

Institutional trust is regarded as a key determinant in the legitimation of the social order and institutional arrangements of societies, and as such can be even of greater importance for social and political stability and integration than generalised trust (Newton & Norris, 2000). Institutions are essential for social order and stability, as they frame individual freedom and provide the basic structure -a system- for individuals to function in society (Devos, Spini, & Schwartz, 2002). As societies become increasingly institutionalised, trust in other's dispositions and motives is substituted by trust in institutions' principles, guiding ideas, procedures, monitoring mechanisms and outcomes (Lepsius, 2017).

Institutional trust, therefore, has been considered fundamental in the promotion of social cohesion.

In democratic societies, the trustworthiness of institutions is shaped not only by their performance and capacity to comply with the rule of law, but also by acting in an ethical, fair, just and transparent way, and by serving the general interest of societies (Devos et al., 2002; Zmerli & Castillo, 2015). Individuals develop their sense of confidence in institutions through a repeated fulfilment of their expectations of their performance (Lepsius, 2017). In other words, institutional trust is based on individuals' expectations of the role of institutions and their perceived performance according to those expectations. According to this line of thought, trust in institutions should not be understood as a personality trait, but as a permanent individual evaluation of the performance of institutions around them (Newton, 2001).

The relevant issue here is that institutional trust is highly influenced by the context in which individuals live, as it shapes individuals' expectations and evaluations of institutional performance. Several studies show that not only income distribution, but more importantly the perceived fairness of income distribution, affect political involvement and institutional trust (for a review see Zmerli & Castillo, 2015). In other words, the evaluation of institutional performance is based on the individual's perceived fulfilment of institutional expectations, which in turn is shaped by the individual's social context. As individuals belong to different strata in the social structure, expectations towards institutions and the perceived fulfilment vary, configuring different levels of institutional trust across social classes. Individuals that have been raised in poor and marginalised families, discriminated against, permanently unemployed, exploited and abused, are less likely to trust institutions than people that have been treated generously or rewarded by the prevailing institutional arrangements of society.

Finally, it is important to mention that contrary to what happens with generalised social trust, certain levels of distrust in institutions is not always detrimental for social cohesion (Wiberg, 1986). Being careful and critical of institutional action and performance is also part of strong citizenship. A healthy level of distrust may be expected and desired in cases where the expected and specified use of power of institutions does not follow the social contract by which individuals transfer authority to those institutions (Fuchs & Klingemann, 1995). Similarly, disproportionately high levels of trust in institutions may

reflect an uncritical view of the social order, or as a failure to exercise an evaluation of institutional performance based on a broader understanding of contexts and expectations.

Following the approach taken by many organizations, such as the World Values Survey and the Australian Survey of Social Attitudes, institutional trust was measured by a ten items Likert scale question regarding trust in the following institutions: the church, the press, the government, the police, courts, the media, political parties, parliament, major companies, and banks. For each item students were asked about their level of confidence ranging from "(1) No confidence at all" to "(4) A great deal of confidence". Even though this type of measure of institutional trust has been criticised for its failure to clearly identify what respondents understand by trust, and what it is exactly that they trust/distrust each institution to do, the creation of indices using more than three items helps to overcome this issue as they provide a better construct about the image that people have of these institutions that relate to trust (Dekker, 2012). The results of the PCA shown in Table 8 reveals the existence of two institutional trust indices: trust in political institutions and trust in private institutions. Therefore, they are analysed separately in the following section.

Although the list of indicators described in Tables 5 to 8 is not exhaustive to explore the influence of segregation on social cohesion in Santiago, it represents a broad range of measures of the potential distributional and socialization effects of segregation. The next section describes the analytical technique to study educational segregation in Santiago.

Analytical technique

The approach to test empirically the association between social segregation and social cohesion in Santiago takes advantage of the nested design of ISCY, and uses a distributional approach based on multi-level analysis. As mentioned previously, multi-level modelling provides for more accurate estimations of the degree of variation in the dependent variable explained by school characteristics, after accounting for individual student differences (Raudenbush & Bryk, 2002; Willms, 2003). However, more importantly for this study, it also offers the potential to disentangle how much of the total variance in the dependent variable is observed between-schools compared to within-schools. The analysis of the different models captures the fixed and random effects, and special attention is given to the random effects, as they allow estimation of the amount of between-school variance, and how much of it is reduced by the socioeconomic

composition of the student population in the schools. The general analytic reasoning is that large between-school variances explained by socioeconomic characteristics of students and schools represent strong social segregation effects. When student SES explains large proportions of the between-school variance, the influence of segregation runs through the effect of an unequal distribution of students coming from different socioeconomic backgrounds across schools in Santiago. Cases in which school SES is significant to explain the between-school variance imply that the segregation effect is through the dissimilar school contexts that results from social segregation beyond student characteristics. If type of school is useful to explain the variance between schools, it suggests that there are unobservable characteristics in those types of schools that explain student outcomes and opinions, some of which could be linked to social segregation on top of student SES and segregated school contexts.

The analysis for the different dependent variables included in this study all start with a "null" model or unconditional means model (without any explanatory variables) to estimate how much of the variance in the dependent variable is observed between schools compared to within schools. This can be represented as:

$$\gamma_{ij} = \beta_0 + u_j + e_{ij}$$

where γ_{ij} is the value of the dependent variable i in school j, β_0 is the overall mean across schools, u_j is the effect of school j on the dependent variable, and e_{ij} is a student level residual.

Following the null model, three successive models are estimated introducing variables at the individual and the school levels, calculating how much of the between-school variance is reduced by the inclusion of each variable:

(1) Model 1 includes a range of student level variables—a dummy variable for gender (male being the reference category) and a continuous variable for student SES[14].

[14] Reading and math test scores are not introduced in the models as they are highly correlated with student SES and are not significant predictors of most outcome variables in this study.

(2) Model 2 introduces a school level measure of SES (the average student SES for each school)

(3) Model 3 builds in dummy measures of type of school—Municipal Non Selective, Municipal Selective, Private Voucher Non Selective, Private Voucher Selective, and Private Fee. Municipal Non Selective is treated as the reference category.

To facilitate interpretation of the results, all continuous variables have been scaled to have a sample mean of 0 and a standard deviation of 1. This technique is helpful in comparing variable effects, estimating group differences in descriptive statistics (e.g. type of school or gender), and interpreting the results in the multilevel models.

In some cases, additional descriptive analysis are performed to further explore and illustrate the differences between schools.

5. SEGREGATION IN SANTIAGO

The historical legacy of school privatization and segmentation in Chile, along with sustained policies of school competition, vouchers, parental choice and student sorting for more than 35 years have resulted in a school system that divides students along socioeconomic lines. How segregated is the secondary school system in Santiago, the largest city in Chile? The first section in this chapter explores the level of SES segregation in the Santiago secondary school system using the ISCY-Santiago data and three different indices of segregation: dissimilarity index, interaction index and social inclusion index. The second section explores the level of segregation by type of school.

How segregated is the secondary school system in Santiago?

There are several alternative ways to measure educational segregation each with their own associated strengths and weaknesses (James & Taeuber, 1985). To provide a robust understanding of the levels of educational segregation in Santiago, consistent with the theoretical and empirical framework of this study, the following sections present the results of several measures of similitude and exposure for the case of Santiago.

Index of dissimilarity

The Dissimilarity Index (Duncan & Duncan, 1955b) is a measure that can be used to estimate the evenness with which two groups are distributed across geographic areas or institutions that make up a city or system. The index score derived using the measure can be interpreted as the percentage of one of the groups included in the calculation that would have to move to a different area, school or type of school in order to produce a distribution that matches that of all schools or of the whole area. The index of dissimilarity can be used as a measure of segregation.

The basic formula for the index of dissimilarity is:

$$D = \frac{1}{2}\sum_{i=1}^{N} \left| \frac{x_i}{X} - \frac{y_i}{Y} \right|$$

where in a comparison of students from low and high SES backgrounds

x_i represents the low SES student of the i^{th} school

X = the total low SES population

y_i represents the high SES students of the i^{th} school

Y = the total high SES population

For this study, two comparisons are made. The first is based on the students in the bottom 30 per cent of the SES distribution, and the aim is to use the score derived from the index of dissimilarity to see what proportion would need to move to match the other 70 per cent of students in the SES distribution. The second is to take high SES students (those in the top 30 per cent of the SES distribution) and see what proportion would need to move to match the other 70 per cent of students in the SES distribution. This is similar to the approach taken by Valenzuela et al. (2013) who applied this to students across urban schools in Chile.

In terms of the formula, the approach for students whose families come from the lowest 30 per cent of the socioeconomic index is x_i which represents the students from low SES backgrounds of the i^{th} school, X is the total student population whose families come from the lowest 30 per cent, y_i is students whose families are classified in the remaining 70 per cent of the SES index in the i^{th} school, and Y as the total student population whose families have been identified as coming from the remaining 70 per cent of the SES index in all schools. The second version uses the same formula but this time for students whose families have been identified as coming from the highest 30 per cent of the SES index. For comparison, this study will also calculate the level of segregation for the highest and lowest 10 per cent and 15 per cent of the student population in the SES index, as well as estimate the D value dividing the student population in half according to the median family socioeconomic status.

As with sample-based surveys, the final sample of schools and students may not be a proportionate match of the population of schools and students in Santiago: some categories of schools and students in the sample may be overrepresented or underrepresented. For example, Municipal schools are slightly overrepresented in the sample, and students at Private Voucher schools are underrepresented. The estimation of the levels of segregation in Santiago using a sample of schools requires adjusting the

distribution of the different types of students in the sample as much as possible to their distribution in the population from which the sample was drawn, so that each type of individual in the sample represents the same proportion as of the population (Winship & Radbill, 1994). A sample weight was created using a two-stage sampling weighting technique. Preliminary weights were first constructed using sample response rates, followed by a post stratification adjustment procedure using population-based information on type of school, SIMCE SES and student gender. According to this information, each case was assigned a factor weight to add up to the total sample number.

Table 9 shows the estimated D values for 10th grade students in Santiago using the ISCY-Santiago weighted sample. The results confirm high levels of social segregation in the secondary school system in Santiago, with a D value of 0.56 for the student population coming from the lowest 30 per cent of the SES index, and a D value of 0.59 for the student population coming from the highest 30 per cent of the SES index. These values are very similar to the ones reported for 10th grade students in urban schools in Chile in 2006 and 2008 by Valenzuela et al. (2013), and represent values close to hyper-segregation (Glaeser & Vigdor, 2000; Massey & Denton, 1993).

Levels of segregation are higher when the definition of the SES groups is restricted to the extreme deciles of the top SES index compared to definitions of broader SES groups. In other words, the level of social segregation of students coming from the highest 10 per cent of the SES index is higher than the level for students coming from the highest 15 per cent, 30 per cent and 50 per cent of the SES index. However, this does not happen in the group of vulnerable students, where the D values are between 0.54 and 0.56 across all groups. It is important to highlight that even when the whole student sample is classified in two groups according to the median value in the SES index, 54 per cent of students would have to move to another school to obtain a homogenous distribution of students coming from the two SES groups across schools in Santiago. Using 2000 and 2003 PISA information for 27 countries of the OECD, Jenkins, Micklewright, and Schnepf (2008) found that the D values for all countries were below 0.45 (Hungary) when they divided students according to the median score of the family background index, with Nordic countries such as Sweden and Norway showing the lowest scores around 0.27, and countries with separate academic tracks such as Austria and Germany with scores around

0.4. The estimated D value for New Zealand, the United States, Australia and England were around 0.29, 0.33, 0.34 and 0.36 respectively.

It is interesting to note that the data show that the highest level of social segregation in the secondary school system in Santiago is found in the group of the wealthiest 10 per cent of the student population, with an estimated D value of 0.78, considerably higher than the 0.55 found for students in the lowest 10 per cent of the SES index. This means that elite families are more concentrated in a few schools than the concentration of the poorest families in disadvantaged schools. Valenzuela et al. (2013) using data across Chile report a similar pattern. The estimated D values for the lowest and highest 15 per cent in the SES index are 0.56 and 0.74 respectively, confirming the tendency of higher segregation among students of wealthy families.

Table 9 shows the estimations of D for different SES groups using the sample weight in the calculations.

Table 9 Dissimilarity Index for 10th grade students in Santiago by different SES group definitions

SES Group Definition	D
Group of vulnerable students	
10 per cent lowest SES	0.55
15 per cent lowest SES	0.56
30 per cent lowest SES	0.56
50 per cent lowest SES	0.54
Group of affluent students	
10 per cent highest SES	0.78
15 per cent highest SES	0.74
30 per cent highest SES	0.59
50 per cent highest SES	0.54

The dissimilarity index value can be interpreted as the percentage of students from a certain SES background that would have to move to another school to achieve an even distribution. Therefore, the findings show that according to estimations of the dissimilarity index in Table 9, 56 per cent of students whose families have been classified in the category of the lowest 15 per cent on the SES index would have to move to schools with low poverty concentration to reach a fair distribution of these students across all schools in the sample. Regarding the most affluent families, the findings show that 78 per

cent of students whose families come from the top 10 per cent of the SES index would have to move to schools with low concentration of these families to achieve a homogeneous distribution. This number is 74 per cent and 59 per cent for those coming from the top 15 per cent and top 30 per cent of the SES index, respectively.

In all, the results shown by the ISCY-Santiago sample reveal a high level of social segregation, suggesting that the school system for 10th grade students in Santiago is highly segregated along SES lines, almost reaching the threshold of hyper-segregation defined in the literature in most cases (0.6). The results show that while segregation levels are very high for all SES groups in Santiago, the highest levels of segregation are found in the groups of students coming from the wealthiest backgrounds. In other words, segregation in the secondary school system in Santiago is higher among the wealthiest than among the poorest in the sample. Put crudely, because of the organisation of schools and choice, the wealthy stick together avoiding those from other backgrounds. They pool together even more tightly than the poor are avoided, though the poor are also forced together even if not to the same extent.

Segregation levels calculated for different SES groups within the lowest 50 per cent bracket in the SES index do not change considerably, meaning that students coming from the poorest 10 per cent of the SES index are segregated at a similar rate to students coming from the lowest 10 per cent, 15 per cent and 30 per cent of the SES index. While segregation is still high for these groups, it is homogeneously high. A different pattern is found for the more affluent half of the sample: the segregation level of students from the top 10 per cent is much higher than for students in the top 15 per cent, which in turn is higher than for students in the top 30 per cent and 50 per cent in the SES index. In this case, the higher the SES of the group, the more separated they are from students coming from a different socioeconomic background.

Index of social interaction

Another useful measure of the extent of segregation is the index of social interaction. This is different to the Dissimilarity Index in that it measures the probability of interaction between students of different social backgrounds, and provides additional useful information on the opportunities that students have to "rub shoulders" with members of other social classes and learn from the life experience of students coming from different

social backgrounds, and are exposed to a wider perspective of the social reality in Chile. This measure is relevant because it gives an idea of how diverse secondary schools are in Santiago along socioeconomic lines, and the extent to which the schooling system truncates the socialization process of students by limiting contact with students and families who come from the same social group, and exclude families coming from other social groups. What is the probability, expressed as a percentage, of students from high SES backgrounds mixing with students from low SES backgrounds in the secondary school system of Santiago? The Index of Interaction will provide us with an answer to that question.

The basic formula for the index of interaction is

$$_xE *_y = \sum_{i=1}^{n} \left[\frac{x_i}{X}\right]\left[\frac{y_i}{t_i}\right]$$

where x_i is the number of students coming from the lowest deciles of the SES index in school i, X is the total number of students coming from the lowest SES deciles in the sample, y_i is the number of students coming from the highest SES deciles in school i, and t_i is the sum of students coming from the lowest and highest SES deciles in school i.

Table 10 shows the values of the interaction index for equivalent groups of students in Santiago coming from opposite positions in the distribution of the SES index. By grouping students coming from opposite SES deciles, the interaction index estimates the probabilities of interaction between groups of students of the same size, controlling for possible biases introduced by group size. This strategy estimates the probability of interaction of students coming from opposite positions in the SES index in Santiago, from a classification of two large SES groups of those below or above the median score in the SES index, to the more extreme cases of probability of interaction between student coming from families in the lowest 10 per cent and highest 10 per cent in the SES index.

Table 10 Interaction Index for 10th grade students in opposite SES groups

SES Group Definition	E
Interaction between 50 per cent lowest and 50 per cent highest SES	0.24
Interaction between 40 per cent lowest and 40 per cent highest SES	0.17
Interaction between 30 per cent lowest and 30 per cent highest SES	0.12
Interaction between 20 per cent lowest and 20 per cent highest SES	0.07
Interaction between 10 per cent lowest and 10 per cent highest SES	0.03

The results in Table 10 show that the probabilities of interaction between students coming from different socioeconomic backgrounds in the Santiago secondary school system are very low. The probability that a randomly selected student coming from the lowest 10 per cent of the SES index shares school with a student coming from the highest 10 per cent is practically nil (3 per cent). This probability reaches only seven per cent for students coming from the lowest two and top two deciles, and only 12 per cent for students coming from the lowest three and top three deciles. Even when the sample of students is divided in two halves according to the median SES value, the probability that a randomly chosen student coming from one of these groups shares the same school with a student coming from the other group is only 24 per cent.

Index of social inclusion

The level of social segregation in a school system can also be calculated by estimating the amount of SES variation between-schools (compared to within-schools). With the advent of multi-level models and their application in education it has been possible to measure accurately the level of inequality across and within schools. To do this, the current study uses the index of social inclusion developed by the OECD (2016a). The index is calculated as 100*(1-rho), where rho stands for the intra-class correlation of socioeconomic background, i.e. the variance in the SES index of students between schools, divided by the sum of the variance in students' socioeconomic background between schools and the variance in students' socioeconomic background within schools. Sample weights are not considered in the multi-level analysis given that the variables used to define the strata in the sample design (school SES and type of school) are incorporated as covariates in the models (Pfeffermann, Skinner, Holmes, Goldstein, & Rasbash, 1998).

The results show that 58 per cent of the variance in student SES is found between schools and 42 per cent within schools. According to these results, the value of the index of social inclusion is 42. Recall that a value of 100 in the index of social inclusion indicates perfect social inclusion (the total variance in student SES of the population is found within schools), and a value of 0 represents complete segregation, or that the total variance in student SES is found between-schools. These results reveal high levels of segregation in Santiago schools. To compare, in PISA 2015, the OECD (2016a) reports a value of 55 in the social inclusion index for Chile, the lowest among OECD members. According to this

report, only three OECD partners show lower values than Chile in the social inclusion index: CABA Argentina (47), Peru (49) and Indonesia (54). The estimated values of the social inclusion index for the United States, United Kingdom, New Zealand and Australia are 73, 80, 83 and 75 respectively (OECD, 2016a).

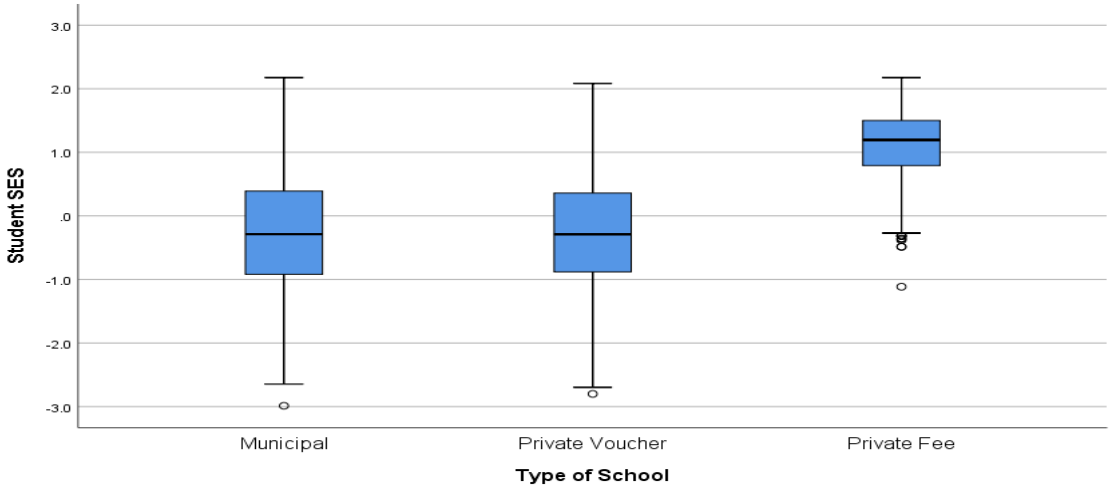
Social segregation by type of school in Santiago

An important question in the case of Santiago is whether social segregation is the same for all types of schools in the city. As mentioned before, compared to school systems in other nations the Chilean school system is one of the most privatised, with schools largely defined by their ownership status and main source of funding. Evidence from the US suggests that choice and privatisation in the form of charter schools has contributed to social and racial segregation (see for example Frankemberg et al., 2010). It is therefore relevant to explore if private schools in Santiago are more or less segregated than Municipal schools.

Figure 6 shows the distribution of student SES by the three types of school, and reveals that the most selective and homogeneous schools socially are the Private Fee schools, which account for 12 per cent of the school population in Santiago. In these schools 66 per cent of students have an SES score more than one standard deviation above the mean, compared to only seven per cent in Municipal schools and four per cent in Private Voucher schools. A comparison of mean student SES using a one-way ANOVA procedure reveals that the mean student SES is significantly higher in Private Fee schools than in the other two types of schools, but not statistically different between students at Municipal and Private Voucher schools.

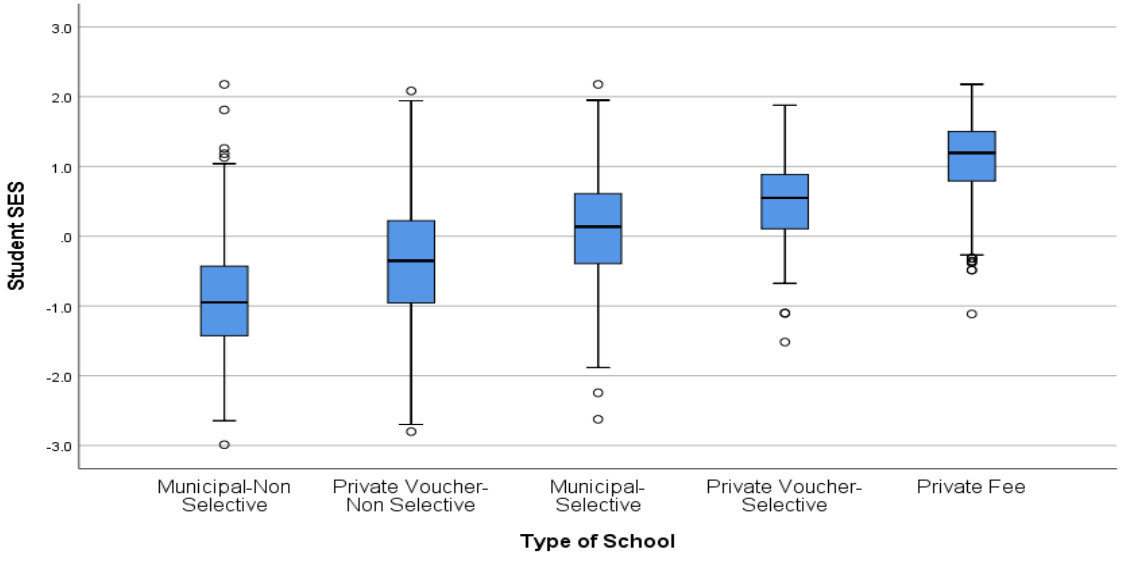
It is important to recognise distinctions between types of schools based on selection practices. There are a few Municipal schools that academically select students while the majority do not. There are a number of Private Voucher schools that academically select students and others that are open to everyone. Figure 7 shows the distribution of student SES across types of schools taking these selection practices into account.

Figure 6 Distribution of student SES by type of school



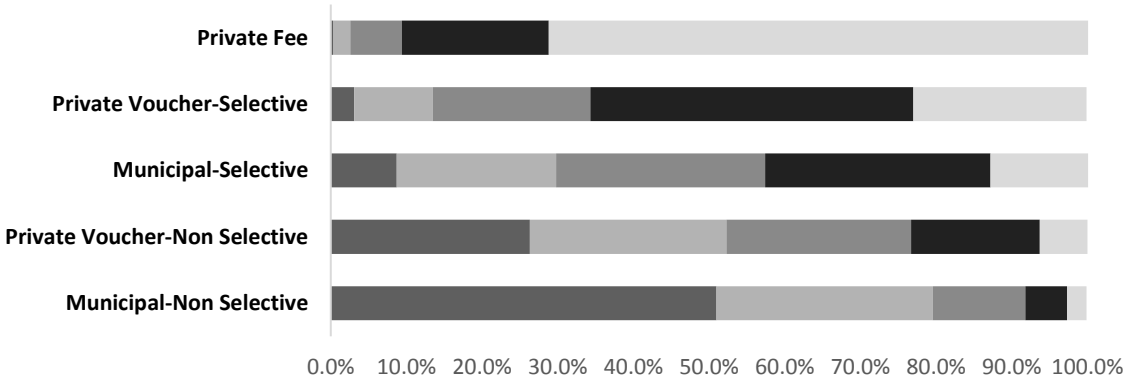
The results confirm that the most segregated schools socially are the Private Fee schools. However, the results now show that Municipal Selective and Private Voucher Selective schools have a markedly different student SES composition than the Non-Selective Municipal and Private Voucher schools. Based on the results, 62 per cent of students at Municipal Selective schools have an SES value above the sample mean, compared to only 13 per cent of the students at Municipal Non Selective schools. Similarly, 76 per cent of students at Private Voucher Selective schools show an SES value above the sample mean, compared to only 27 per cent of students at Private Voucher Non Selective schools. A one-way ANOVA analysis reveals that the differences in mean student SES are significant across all types of schools except between the Municipal Selective and the Private Voucher Selective schools.

Figure 7 Distribution of student SES by modified type of school



To further explore the level of social segregation by type of school, Figure 8 shows the student SES composition within type of school, and Figure 9 shows the distribution of students from different SES across types of schools.

Figure 8 School differences in SES composition, by type of school and quintile of student SES (%)



	Municipal-Non Selective	Private Voucher-Non Selective	Municipal-Selective	Private Voucher-Selective	Private Fee
Lowest	51.0%	26.3%	8.7%	3.1%	0.3%
Lower middle	28.6%	26.0%	21.1%	10.4%	2.3%
Middle	12.2%	24.4%	27.6%	20.8%	6.8%
Upper middle	5.5%	17.0%	29.8%	42.7%	19.4%
Highest	2.6%	6.3%	12.9%	22.9%	71.3%

Figure 8 shows that half of students enrolled in Municipal Non Selective schools come from the lowest SES quintile, almost a third from the lower middle quintile and only 8 per cent from the upper middle and highest social backgrounds. Although Private Voucher Non Selective schools also serve low income families, they do so at a lower extent than Municipal Non Selective schools: lowest, lower middle and middle SES quintile students each represent a quarter of total enrolment in Private Voucher Non Selective schools. Municipal Selective schools pool students from all social backgrounds, although lowest SES students represent only 9 per cent of total enrolment in these schools. Private Voucher Selective schools mostly serve families from middle, upper middle and highest social backgrounds, while 7 out of 10 students in Private Fee schools come from the highest SES quintile, 2 from the upper middle bracket and 1 from a middle social background.

Figure 9 SES distribution of population, by type of school (%)

	Lowest	Lower middle	Middle	Upper middle	Highest
Municipal-Non Selective	40.4%	22.5%	9.7%	4.4%	2.1%
Private Voucher-Non Selective	47.6%	46.6%	44.2%	30.6%	11.3%
Municipal-Selective	11.1%	26.6%	35.2%	37.8%	16.4%
Private Voucher-Selective	0.7%	2.3%	4.6%	9.4%	5.1%
Private Fee	0.2%	2.1%	6.3%	17.7%	65.2%

As depicted in Figure 9, almost 50 per cent of students coming from the lowest SES quintile attend Private Voucher Non Selective schools, 40 per cent Municipal Non Selective schools, and 11 per cent Municipal Selective schools. A large proportion of lower middle SES students attend Private Voucher Non Selective schools (47 per cent), and practically all the rest are divided between Municipal Non Selective and Selective schools. Students from the middle social background mostly attend Private Voucher Non selective and Municipal Selective schools, and a few enrol at Private Voucher Selective (5 per cent) and Private Fee schools (6 per cent). Student from upper middle SES families mostly attend Municipal Selective and Private Voucher Non Selective schools, and some are enrolled in Private Fee schools. The great majority of the highest SES students are enrolled in Private Fee schools, although some of them attend Municipal Selective and Private Voucher Non Selective schools.

These results show that the different types of secondary schools serve different parts of the population in Santiago based on SES. The extent to which this happens can be quantified by using a multi-level model to predict student social background. By adding a variable for school type, it is possible to measure what additional explanatory power to

identifying student SES is given by just knowing the type of school that the student attends. The findings are reported in Table 11.

The fixed part of Model 1 in Table 11 confirms that compared to Municipal Non-Selective schools students attending all other school types have significantly higher family SES, except for Private Voucher Non Selective schools which are higher but not significantly higher. The differences in average student SES by type of school are striking: students at Private Voucher Selective schools come from families that on average are 1.39 standard deviations higher in SES than students from Municipal Non Selective schools. The estimated average difference for students at Private Fee schools is 2.07 standard deviations, revealing a clustering of the upper class in these schools.

Table 11 Multilevel model using student socioeconomic background as dependent variable

Parameters	Null Model	Model 1
Constant	-0.12	-0.91**
School Level		
Type of School (Ref: Municipal Non Selective)		
Private Voucher Non Selective		0.47
Municipal Selective		1.01**
Private Voucher Selective		1.39**
Private Fee		2.07**
Explained Variance (%)		
Within-school	[42]	0
Between-school	[58]	80
N cases	2169	2169

*p < .05. **p < .01.

However, the most relevant finding from Table 11 is how much of the between-school variance in student SES is explained by type of school. As stated before, the data shows that 58 per cent of the total variance in student SES is found between schools, revealing that there is much more between school variance in student SES than there is within school pointing to a high level of social segregation in Santiago. Model 1 shows that 80 per cent of the observed between-school variance in student SES (80 per cent of the 58 per cent between-school variance) is explained by type of school. This means that most of the social segregation found in the Santiago secondary schools system can be explained by the differences in types of schools, and that the segmentation of the student population across types of schools is a marker of the social segregation in the system. In this sense,

affluent secondary students are pooled in Private Fee schools in Santiago, and these schools are segregated from the other types of schools. Aspirational middle-class families are pooled in Private Voucher Selective and Municipal Selective schools, and low SES students are concentrated in Private Voucher Non Selective schools, while highly concentrated in Municipal Non Selective schools.

Summary

The various measures of segregation used in this section, together with the exploration of segregation levels by type of school, have yielded consistent results with previous research in Chile, and reveal the extent to which the secondary school system in Santiago is highly segregated along SES lines. The different analysis and results of this section portray a system in which many schools serve only part of the population, and where students have fairly low chances of sharing schools with students from different social backgrounds. This situation is largely driven by the different types of schools that operate in the system which are a product of the privatization of schooling fuelled by free-market funding policies, coupled with practices of student academic selection, and the operation of a sizeable pool of independent Private Fee schools which have served the wealthy classes in Chile for generations and sit outside of State influence (as a completely separate school system like a nation within a nation). Private voucher schools that serve the lowest SES students are more segregated than Municipal schools. These are the parts of the apparatus fostering segregation in the Santiago school system.

6. SCHOOL LEARNING ENVIRONMENT

The Conceptual Map of the influence of segregation on social cohesion presented in Chapter 2 suggests that segregation influences social cohesion through its actions on two facets of schooling: (1) in producing unequal levels of classroom learning, academic achievement and student success in school and later outcomes in life, and (2) in affecting the acquisition of values, skills, and outlooks for citizenship through limited interaction with others. This chapter, and the next three chapters (chapters 7, 8and 9), examines the evidence from ISCY-Santiago on the first of these sets of actions—the extent to which the high levels of social segregation in Santiago produce unequal learning leading to differences in student attainment of academic skills and school outcomes including further study and work. The current chapter looks not at effects on student outcomes, which will be the focus of the next three chapters, but at its effects on school as a learning environment. It is through the quality of life that is created in each school as a learning community that opportunities for academic success and student performance are made. The next three chapters look at effects of these opportunities on student achievement, plans for further study and careers, and development of 21st Century skills, respectively. Chapter 10 will turn to the second set of actions of segregation—effects on the development of citizenship and skills for social cohesion.

To what extent does the quality and character of school life, which are sometimes referred to as school climate, vary based on where students are located in Santiago? Does segregation influence things such as classroom life, relationships between students and teachers, connectedness to school, engagement with learning and school efficacy (how well school works for students)? These are the questions that this chapter explores. It begins by providing descriptive results on measures of quality of school life, before turning to regression results to estimate the independent and add on effects of social segregation.

Quality of learning environment

From the survey undertaken by students as part of ISCY-Santiago, a set of scales were created which capture aspects of the school as a learning environment. The concept of learning environment encompasses what happens in classrooms, disciplinary climate, instructional practices and quality of teachers. Learning environments can be viewed as

either positive or negative. The aspects of the learning environment related to school climate and school engagement examined in this chapter are summarised in Table 12 which reports the proportion of students with positive views on each dimension of the school as a learning environment. Having a positive view means achieving an above average score on the relevant scale.

Table 12 Proportions of students with positive views on and attitudes towards school and learning, by type of school

	Municipal-Non Selective	*Private Voucher-Non Selective*	*Municipal-Selective*	*Private Voucher-Selective*	*Private Fee*
School environment measures					
School efficacy	32.7	40.3	46.9	43.6	48.1
Student behaviour	34.2	47.3	54.3	62.0	69.5
Relationships with teachers	30.1	39.0	29.6	60.0	52.2
Attitudes towards school and learning					
Value of learning	47.4	52.0	40.8	36.7	48.6
Connectedness to school	35.1	49.0	50.1	53.8	70.4
Cognitive engagement	39.8	46.2	41.6	38.9	53.4
Behavioural engagement	54.2	56.6	64.2	69.1	66.8
Emotional engagement	36.4	48.3	44.7	55.6	60.6

The results in Table 12 suggest that there are important differences in school learning environments in Santiago depending on the type of school. Take, for example, student behaviour. This scale encompasses attendance at school and behaviour in classes. One of the goals of schools and teachers is to create an environment that is conducive to learning. This requires, first and foremost, that students turn up to school and to class and that students keep noise at bay and are orderly and can concentrate on academic tasks. Students in Private Fee schools are much more likely to record above average scores on this scale than students in all other school settings. The level—69.5 per cent—is more than double the rate recorded in Municipal Non Selective schools—34.2 per cent.

It is similar for relationships with teachers. Students need support from teachers and need to have good relationships with them if they are to make the most of the learning opportunities available to them. ISCY-Santiago asked students the extent to which their teachers got on well with them, cared about them and were friendly. Student responses were combined to create the index of relationships with teachers in such a way that

positive values indicate that students perceive having positive relationships with teachers. On the scale, students at Private Voucher Selective schools—60.0 per cent—and at Private Fee schools—52.2 per cent—record much more positive relationships with teachers than students in Municipal Non Selective—30.1 per cent—or Municipal Selective Schools—29.6 per cent.

There are also important differences in the appreciation students have of the efficacy of their schools, in terms of the quality of their teachers, and the capacity of their school to engage them in interesting subjects, getting the best out of them and delivering a good quality education for their future. Students in Municipal Non Selective schools have the lowest proportion of students with positive views based on the efficacy of school—32.7 per cent. This is compared to 48.1 per cent of students in Private Fee schools, 46.9 per cent in Municipal Selective schools, the types of schools that persistently record the highest scores in the national standardized tests and university entrance exam (Agencia de la Calidad de la Educación, 2016; DEMRE, 2015). The results reveal very different student perceptions of the efficacy of the school learning environment based on whether attending a Municipal Non Selective school or not.

School environments are related to student attitudes towards school and learning and Table 12 shows that there are important differences across types of schools. Schools do not seem to have the same capacity for building student connectedness. The scale of connectedness, which is based on whether students like being at school, feel safe there and will leave with good memories, measures how well schools can create an environment that can connect and engage students. There are major differences in the results for this scale depending on the type of school. The proportion of students recording above average scores on this scale in Municipal Non Selective schools—35.1 per cent—is almost half the level of those at Private Fee schools—70.4 per cent—and considerably lower than in all other types of school.

It is similar for the level of commitment or involvement students have in school activities. Learning benefits from student emotional, behavioural and cognitive engagement, and the results show important differences in how students behave, feel and think by type of school. Students in Private Fee schools are much more likely to record above average scores on the cognitive and emotional engagement scales than students in all other school

settings. The levels—53.4 per cent and 60.6 per cent, respectively—are substantially higher than the rate recorded in Municipal Non Selective schools—39.8 per cent and 36.4 per cent, respectively. Although the proportion of students in Private Fee schools recording an above average score on the behavioural engagement scale is also higher than the proportion of students in Municipal Non Selective schools, the differences are not as sharp as for the other two engagement scales, and not very different from students in selective Municipal and Private Voucher schools.

It is worth noting that despite being less connected to school, the proportion of students in Municipal Non Selective schools that record above average scores on how much they value learning—47.4 per cent—is very similar to the proportion of students in Private Fee schools—48.6 per cent—and higher than for students in selective Municipal and Private Voucher schools—40.8 per cent and 36.7 per cent, respectively. It would seem that while students in Municipal Non Selective schools find the environment less engaging, they recognise in equal measure the importance of learning. How much students value what they learn at school for their future, and how important they believe education is to achieve their future is similar across types of schools, even though student connectedness to school varies.

The previous analysis shows that there are important differences in student opinions about the learning environments and quality of school life by type of school, which are reflected in differences in student dispositions towards school and learning. Compared to students in other types of schools, students at Municipal Non Selective schools study in contexts where they report weak school efficacy and where there are higher chances of disruptive student behaviour and less positive relationships with teachers. Consequently, they report lower levels of connectedness to school, and lower levels of cognitive, behavioural and emotional engagement to school. In contrast, based on what students record, students at Private Fee schools study in more supportive learning environments and display positive attitudes towards school and learning.

In order to estimate the extent of between-school differences in school learning environments and attitudes towards school and learning, Table 13 shows the Variance Partition Coefficient (VPC) for the scales described above.

The results confirm that there are considerable differences in learning environments and student dispositions towards school and learning across schools, and suggest that not all the variance is contained within schools. This is especially strong in the case of perceptions about student behaviour, where 20 per cent of the total variance is observed between schools, and in student connectedness to school, where the variance between schools reaches 11 per cent. Even though the VPCs for school efficacy, relationship with teachers, value of learning and behavioural engagement are lower, the sizes are large enough to warrant further exploration in relation to the influence of school segregation. The between-school variances for the other two scales—cognitive and emotional engagement—are sufficiently small to dismiss the need to approach the analysis using a nested model. Therefore, in the analysis that follows, random intercept multilevel models are used to explore the between-school variance in six scales, while OLS full regression models for the other two scales can be found in the Appendix.

Table 13 Between-school variance in school learning environment and attitudes towards school and learning

	Between-School Variance (%)
School environment measures	
School efficacy	7
Student behaviour	20
Relationship with teachers	7
Attitudes towards school and learning	
Value of learning	6
Connectedness to school	11
Cognitive engagement	2
Behavioural engagement	7
Emotional engagement	4

Table 14 shows the results of three models designed to explain the 20 per cent between-school variance in student behaviour. Model 1 reveals that the individual variables considered in the model (gender and student SES) are not significant predictors of student opinions regarding the level of respect students show in class, and towards their peers and teachers. Model 2 reveals that School SES is a powerful predictor of student opinions regarding student behaviour at school, with a one standard deviation increase in school SES associated with almost 0.5 standard deviation increase in student behaviour. In other words, there is a strong contextual effect of school SES composition on student opinions

regarding student behaviour at school. This may come as no surprise, as schools that teach the most vulnerable students have to deal with behavioural issues that are often associated with social disadvantage, such as family violence, social resentment, discrimination, etc. When the dummies for type of school are included in Model 3, none of them are significant in explaining student views on levels of positive student behaviour at school. Type of school takes away some of the explanatory power from school SES, due to the high correlation between type of school and school SES characteristic of the high socially segregated education system in Santiago.

As described earlier, a special interest in the analysis is to explain the between-school differences in levels of behaviour at school. The multilevel models show that 64 per cent of the total between-school variance in reported student behaviour at school is explained by school SES. None of the student variables are significant, nor are the different types of school. These findings reveal that the large differences (20 per cent) between schools are not explained by the student characteristics included in the models, and are mostly explained by differences in the SES compositions of the schools.

Table 14 Multilevel model estimates of student behaviour

Parameters	Null Model	Model 1	Model 2	Model 3
Constant	-0.02	-0.05	0.00	-0.07
Individual Level				
Gender (Ref: male)		0.06	0.06	0.07
Student SES		0.04	0.00	0.00
School Level				
School SES			0.49**	0.43**
Type of School (Ref: Municipal Non Selective)				
Private Voucher Non Selective				0.04
Municipal Selective				0.13
Private Voucher Selective				0.02
Private Fee				0.15
Explained Variance (%)				
Within-school	[80]	0	0	0
Between-school	[20]	13	77	78
N cases	2111	2111	2111	2111

*p < .05. **p < .01.

The results of the fixed and random effects of Table 14, therefore, suggest that there are important differences in the reported levels of student behaviour between schools, and

that these differences are mostly explained by the different school contexts that result from the social segregation in the school system in Santiago. In other words, the separation of students by SES across schools promotes different school contexts associated with student behaviour, where lower SES schools have to deal with student behavioural issues that are not present in higher SES schools to the same extent, according to what students tell us about behaviour at their schools.

Table 15 shows the results of the multilevel models designed to explain student levels of connectedness to school, a scale that reflects the overall satisfaction with their life and experiences at school. Being female is associated with a more positive connection to school than being male is, in all models, even when school SES and type of school are included. All models show that student SES is a significant predictor of student level of connectedness to school, even after controlling for school characteristics in Models 2 and 3. This is highly relevant because it suggests that no matter what the school SES is or what type of school, affluent students report a stronger connection to school than low SES students do. Regardless of the context, there is something about student SES that affects perception of how happy, safe and joyful they feel about school.

Model 2 shows that a one standard deviation increase in school SES is associated with a 0.2 standard deviation increase in student connectedness to school. However, this effect loses significance in Model 3 when type of school is added. Although there are large differences in student levels of connectedness to school by type of school, they are not significant due to high standard errors. This means that type of school and school SES are highly correlated, and after controlling for school SES, type of school does not make a significant difference. Again, this result suggests a relevant effect of student and school SES, as the most important variables to explain student connectedness to school, revealing that student experiences and wellbeing at school are of a higher quality in the segregated elite schools than in the residual low SES schools, based on student views.

Table 15 Multilevel model estimates of connectedness to school

Parameters	Null Model	Model 1	Model 2	Model 3
Constant	-0.01	-0.06	-0.04	-0.29
Individual Level				
Gender (Ref: male)		0.12*	0.12*	0.12*
Student SES		0.12**	0.09**	0.09**
School Level				
School SES			0.20*	-0.02
Type of School (Ref: Municipal Non Selective)				
Private Voucher Non Selective				0.19
Municipal Selective				0.12
Private Voucher Selective				0.34
Private Fee				0.62
Explained Variance (%)				
Within-school	[89]	1	1	1
Between-school	[11]	31	45	57
N cases	1983	1983	1983	1983

*p < .05. **p < .01.

The random part of the Null Model in Table 15 (the variance analysis), indicates that 11 per cent of the total variance in student connectedness to school is attributed to differences between schools. As depicted in Model 1, 31 per cent of the between-school variance is explained by student SES, and Model 2 shows that student SES and school SES explain 45 per cent of the between-school variance. The variations in distributions of students by SES across schools in Santiago, which also affects the average SES of the schools, explains an important proportion of the variance in student connectedness to school. When type of school is incorporated in Model 3, the variables included explain around half of the total between-school variance in student connectedness to school. The results support the view that social segregation in the Santiago school system translates into different capacities of schools to connect with or engage students: students in schools that concentrate the most affluent families report higher levels of happiness, safety and positive school memories than students at schools that concentrate disadvantaged families. Even though half of the between-school variance in student connectedness to school remains unexplained, it could be argued that social segregation affects levels of connectedness to school and therefore the potential to promote learning, where learning is dependent on student connectedness.

Even though the total variance between schools on the measure of quality of student relationships with teachers is comparatively modest—7 per cent—it is still worth analysing between-school differences further. Model 1 in Table 16 shows that as SES increases so does reported quality of relationships with teachers, but this effect is fairly weak and ends up disappearing in the ensuing models when school variables are included. The addition of type of school in Model 3 reveals that students at Private Voucher Selective schools report significantly more positive relationships with teacher than students at Municipal Non Selective schools, suggesting an effect of type of school on how students perceive their relationships with teachers. This may be of no surprise, as these are schools that select students on the basis of academic performance, fees and other factors. Students at Private Fee schools also report positive relationships with teachers, but are not significant due to high standard errors. Students at Municipal Non Selective schools report the lowest scores on the scale of quality of relationships with teachers.

The random part of Table 16 shows that when type of school is added in Model 3, almost half of the between-school variance is explained, confirming that an important proportion of the between-school variance in how students rate their relationships with teachers is explained by the social segregation embedded in the different types of schools operating in Santiago.

Table 16 Multilevel model estimates of relationships with teachers

Parameters	**Null Model**	**Model 1**	**Model 2**	**Model 3**
Constant	0.06	0.07	0.07	-0.18
Individual Level				
Gender (Ref: male)		0.01	0.01	0.01
Student SES		0.08**	0.06	0.06
School Level				
School SES			0.09	-0.09
Type of School (Ref: Municipal Non Selective)				
Private Voucher Non Selective				0.22
Municipal Selective				0.07
Private Voucher Selective				0.66*
Private Fee				0.47
Explained Variance (%)				
Within-school	[93]	0	0	0
Between-school	[7]	14	18	48
N cases	2095	2095	2095	2095

*p < .05. **p < .01.

Table 17 Multilevel model estimates of student behavioural engagement

Parameters	Null Model	Model 1	Model 2	Model 3
Constant	0.00	-0.16**	-0.15**	-0.15
Individual Level				
Gender (Ref: male)		0.34**	0.34**	0.34**
Student SES		0.09**	0.06	0.06
School Level				
School SES			0.14*	0.17
Type of School (Ref: Municipal Non Selective)				
Private Voucher Non Selective				0.02
Municipal Selective				0.06
Private Voucher Selective				0.09
Private Fee				-0.10
Explained Variance (%)				
Within-school	[93]	2	2	2
Between-school	[7]	33	43	46
N cases	2086	2086	2086	2086

*p < .05. **p < .01.

Table 17 reports results on student behavioural engagement. It is worth observing that girls have much higher levels of behavioural engagement than boys (estimated at a 0.34 standard deviation gain) which is unaffected by other factors and holds across all models. In other words, no matter what SES background, type of school or mean school SES, girls report a significantly higher level of behavioural engagement in school than boys, measured in terms of attendance and classroom behaviour.

At the same time, Model 1 indicates that student SES is positively associated with behavioural engagement, but this effect is no longer significant once school SES is introduced in Model 2, suggesting a stronger school rather than individual SES effect.

The random part of Table 17 (variance analysis) shows that a third of the between-school variance in student behavioural engagement is explained by student gender and SES. Further analysis introducing gender and student SES separately reveals that gender and student SES, respectively, explain 9 per cent and 22 per cent of the total between-school variance in student behavioural engagement. This may be because gender segregation in the sample, the extent to which girls and boys are separated between schools, is not as prominent as social segregation. When school SES is included in Model 2, the total between-school variance explained rises to 43 per cent. Additional analysis shows that

school SES by itself explains 33 per cent of the total between-school variance in student behavioural engagement. Finally, Model 3 indicates that type of school is not relevant to explain differences in student behavioural engagement between schools, although students at Private Fee school seem to have lower behavioural engagement than other students.

The results show that although 54 per cent of the total between-school variance (seven per cent) in student behavioural engagement remains unexplained, an important proportion is explained by gender, student SES and school SES, the last two related to social segregation in Santiago. It would seem based on these results that social segregation in Santiago is associated with differences across schools in student behaviours such as not skipping classes, not missing school for an entire day, avoiding getting into trouble with teachers due to bad behaviour, and not getting suspended from classes. Students at low SES schools show significantly lower levels of behavioural engagement, indicating that social segregation may work against their chances to develop the necessary commitment and attitude to succeed at school and later in the labour market.

Table 18 shows the results of the fixed and random effects of the multilevel models to explain how effective students believe their schools are in terms of having good teachers, interesting subjects, getting good results, getting the best out of them and helping them plan their career. Although student SES is positively associated with school efficacy in Model 1, the effect is not significant in the following models, even if the estimates remain positive. As evident from Model 3, all the variables that significantly explain school efficacy are contextual variables. Students at all types of schools believe their schools are more effective than do students at Municipal Non Selective schools. This is especially the case for students in Private Fee schools. The multicollinearity between type of school and school SES, precisely due to segregation, explains why when both school SES and school type are included, school SES becomes significant and negatively associated with school efficacy. If school SES is excluded from Model 3, only students in Private Fee schools have significantly more positive views about the efficacy of their school than students at Municipal Non Selective schools, with an estimated coefficient of 0.43.

Table 18 Multilevel model estimates of school efficacy

Parameters	Null Model	Model 1	Model 2	Model 3
Constant	-0.02	-0.02	-0.01	-0.49**
Individual Level				
Gender (Ref: male)		0.01	0.01	0.01
Student SES		0.07*	0.06	0.06
School Level				
School SES			0.06	-0.30*
Type of School (Ref: Municipal Non Selective)				
Private Voucher Non Selective				0.33*
Municipal Selective				0.55*
Private Voucher Selective				0.54*
Private Fee				0.99**
Explained Variance (%)				
Within-school	[93]	0	0	0
Between-school	[7]	10	11	50
N cases	1983	1983	1983	1983

*p < .05. **p < .01.

The variance analysis shows that seven per cent of the total variation in student opinions about the efficacy of their school is found between schools. Model 3 reveals that 50 per cent of the total between-school variance is explained by the variables included in the model, in which only type of school and school SES are significant. However, the results suggest that although there are relevant differences between schools in student views about their school efficacy, some of these differences may be related to individual variables grouped unevenly across schools not considered in this study.

Table 19 shows the fixed and random effects for student perceptions of the value of learning. Earlier analysis showed that value of learning was the only scale in which the proportion of students recording above average scores in Private Fee schools was not higher than the proportion of students in other types of schools, including Municipal Non Selective schools. Interestingly, the lowest proportions were found in Private Voucher Selective and Municipal Selective schools, while the largest proportions were recorded in students at Private Voucher Non Selective schools.

Table 19 Multilevel model estimates of perceived value of learning

Parameters	Null Model	Model 1	Model 2	Model 3
Constant	0.03	-0.03	-0.05	-0.23
Individual Level				
Gender (Ref: male)		0.13**	0.13**	0.14**
Student SES		0.02	0.05	0.05
School Level				
School SES			-0.19**	-0.34**
Type of School (Ref: Municipal Non Selective)				
Private Voucher Non Selective				0.18
Municipal Selective				0.01
Private Voucher Selective				-0.01
Private Fee				0.50*
Explained Variance (%)				
Within-school	[94]	0	0	0
Between-school	[6]	0	22	61
N cases	2145	2145	2145	2145

*p < .05. **p < .01.

As depicted in Models 1 to 3 in Table 19, girls persistently value learning more highly than do boys, even after controlling for other individual and school characteristics. Student SES does not seem to be significant in explaining differences in perceived value of learning. In fact, Models 2 and 3 show that as the average SES of the school decreases, perceived value of learning increases, even after controlling for gender and student SES. Model 3 may reflect the presence of multicollinearity because the negative estimate for mean school SES increases (compared to the estimate in Model 2) and type of school estimates are mainly positive. All else equal, students in Private Fee schools appear to value learning at a significantly higher level than students in Municipal Non Selective schools.

The random part of Table 19 (variance analysis) indicates that although gender is very important to explaining differences in the perceived value of learning, it's inclusion in Model 1 does not influence the level of between-school variance. School SES, by contrast, explains 22 per cent of the total between-school variance, suggesting a modest social segregation effect. When type of school is introduced in Model 3, the explained variance between schools jumps by 40 points, indicating that type of school contributes to between school differences in perceived value of learning among students.

Summary

The findings in this chapter provide evidence that social segregation in the secondary school system in Santiago is associated with different learning environments and student attitudes towards school and learning. The analysis reveals that the quality of student life at school in terms of student behaviour, relationships between students and teachers, connectedness to school, engagement with learning and how well school works for students depends on where students are located, beyond individual characteristics. The separation of students along SES lines promotes differences in the quality of school environments and differences in student attitudes towards school and learning, in a way in which the quality of learning environment as measured by student connectedness and behaviour appears to be poorest in Municipal Non Selective schools. Private Fee schools, based on the results, appear best able to create the conditions needed to foster strong levels of student connectedness to school and student engagement in learning. The differences in learning environments and quality of school life promoted by social segregation may have considerable impact on student learning and on other student outcomes, including further study and work, something to which we now turn.

7. STUDENT ACHIEVEMENT IN MATH AND READING

The previous chapter presented information on the extent to which the school learning environment is affected by social segregation. It is likely that differences in the learning environment affected by segregation impacts the quality of learning and achievements of students. This chapter looks at the effects of segregation on achievement as measured by math and reading scores. Studying the relationship between social segregation and student proficiency in reading and math provides valuable information on how well the secondary school system in Santiago distributes opportunities for all types of students regardless of the school they attend.

Variations in student achievement in math and reading

Students participating in ISCY-Santiago completed a reading and math test to capture student achievement. Table 20 shows the proportions of students who scored above the average on the reading and math tests, by type of school.

Table 20 Proportion of above average reading and math performers, by type of school

	Municipal-Non Selective	*Private Voucher-Non Selective*	*Municipal-Selective*	*Private Voucher-Selective*	*Private Fee*
Reading score	17.2	36.6	65.6	61.5	80.4
Math score	29.5	42.6	54.0	51.1	70.1

Table 20 reveals marked differences in the proportions of above average students in reading and math. While 80 per cent of students in Private Fee schools perform above average in reading, only 17 per cent do so in Municipal Non Selective schools. Although the differences are lower in the case of math test scores, the proportion of high performers in Private Fee schools is still 2.3 times greater than that in Municipal Non Selective schools.

The results reveal large differences in student reading and math achievement by type of school, but to what extent are the results due to differences in the types of students attending the different schools, and to what extent are they due to the differences in learning environments created between schools? Given the structure of the Santiago

school system, it may be of little surprise that students at Private Fee schools, which disproportionately enrol students from high SES backgrounds, outperform students from the other types of schools in both tests. Conversely, students at Municipal Non Selective schools, disproportionately drawn from the poorest and most disadvantaged families, record the lowest proportion of above average achievers. But are the differences due to the different students or does the segregation contribute in some way to performance differences?

In order to measure the effects of schools on student reading and math achievement, and to explore the extent to which social segregation is associated with differential student performance, multi-level OLS modelling was conducted. Table 21 shows the Variance Partition Coefficient (VPC), or the percentage of the variance of student test scores that can be attributed to differences between schools, derived form an unconditional model in which no explanatory variables are added. According to the results, 31 per cent of the total variance in student reading levels can be attributed to differences between schools. The total variance in student math scores attributed to differences between schools is lower—15 per cent—but still represents an important proportion of student variance in math. In both cases, it is important to measure the features of school clustering in Santiago that contribute to the levels of variation between schools.

Table 21 Between-school variance in student test scores

Subject	Between-School Variance (%)
Reading	31
Math	15

Table 22 presents the results of multilevel analysis introducing student and school-level variables to both predict student reading test scores and measure the extent to which they help explain the large differences between schools found in the unconditional model.

The results show that when gender and student SES are included (Model 1), only the latter is significant in predicting student test scores, indicating that in Santiago in 10th Grade there are no significant differences between males and females in reading skills. This is at odds with what has been reported in most OECD countries (e.g. see OECD, 2016a). There are significant differences based on the SES background of students: students of

higher SES record significantly higher achievement in reading than students from lower SES backgrounds.

Table 22 Multilevel model estimates of reading achievement

Parameters	Null Model	Model 1	Model 2	Model 3
Constant	-0.03	-0.01	0.06	-0.18*
Individual Level				
Gender (Ref: male)		0.00	0.00	0.00
Student SES		0.15**	0.11**	0.11**
School Level				
School SES			0.58**	0.47**
Type of School (Ref: Municipal Non Selective)				
Private Voucher Non Selective				0.20*
Municipal Selective				0.46**
Private Voucher Selective				0.24
Private Fee				0.34*
Explained Variance (%)				
Within-school	[69]	1	1	1
Between-school	[31]	36	94	98
N cases	1917	1917	1917	1917

*p < .05. **p < .01.

Despite the importance of student family background to reading achievement, the inclusion of student SES (and gender) adds only a modest amount to explaining between-school differences. For reading, taking account of student SES and gender helps explain 36 per cent of the large amount of between-school differences (estimated at 31 per cent as reported in Table 22). They only explain one per cent of the within-school variation.

Model 2 introduces a single variable to the model—school-level SES. The coefficients in the fixed part of Model 2 indicate that there is a strong effect on student reading achievement, where a 1 unit increase in average school SES is associated with a 0.58 standard deviation increase in student reading test scores. In other words, after taking account of student SES and gender, the mean SES of the school contributes significantly to student performance in reading. The inclusion of this one school-level variable increases the level of explained between-school differences to 94 per cent (from 36 per cent in Model 1), meaning that school SES accounts for the vast amount of between-school effects. There is little left to explain after including mean school SES.

The inclusion of type of school (Model 3) reveals significantly stronger results for students at Private Voucher Non selective schools, Municipal Selective Schools and Private Fee schools than for students at Municipal Non Selective schools, even after accounting for school SES and individual SES. There are weak but significant school type effects. The type of school you attend matters.

As depicted in the random part of Model 1, 36 per cent of the total between-school variance in student reading test scores is explained by student SES. This result represents the unequal distribution of students from different SES across schools. The addition of school SES in Model 2 is important to understanding the effects of social segregation on student reading achievement, as it explains 94 per cent of the total between-school variance together with student SES. In other words, the contextual effect of school SES is not only a powerful predictor of student reading achievement in Santiago, it is also a crucial variable to explaining the large differences in achievement across schools. When type of school is added in Model 3, practically all of the variance between schools in student reading test scores is explained.

The implication of these results is that in the secondary school system of Santiago, 31 per cent of the variation in reading is linked to differences between schools, and the major part of this is accounted for by the different school SES contexts created by segregation.

Table 23 shows the results for math. The number of cases to perform the analysis is lower than for the reading test score models, because a total of 283 fewer students answered the ISCY-Santiago math test. The results show that unlike for reading, boys perform significantly better than girls in math, even after controlling for student SES. There is a sizeable gender gap in math achievement which remains across all the models and is little changed by the inclusion of school-level variables. In other words, after controlling for the socioeconomic background of the student, and what school they go to, girls perform significantly less well than do boys.

However, student SES is also a significant and positive predictor of math test scores, consistent with the findings for reading. Even though the effect size of student SES decreases once school SES is accounted for, it remains significant and reveals a strong individual effect of SES over student math achievement despite contextual effects. Models 2 and 3 suggest that there is also a strong effect of school SES, where a 1 unit

increase in the average SES of the school is associated with an estimated 0.28 standard deviation increase in student math scores, after controlling for individual and school type variables (Model 3). However, in contrast to reading, there are no significant differences in math achievement by type of school. This means that the contextual effect in math is linked to the mean SES of the families at the school, and once this effect is accounted for, school type does not have any independent effects on math achievement. In other words, social segregation appears to be the key driver.

Table 23 Multilevel model estimates of math achievement

Parameters	**Null Model**	**Model 1**	**Model 2**	**Model 3**
Constant	-0.03	0.13	0.18**	0.03
Individual Level				
Gender (Ref: male)		-0.28**	-0.28**	-0.27**
Student SES		0.12**	0.07*	0.07*
School Level				
School SES			0.35**	0.28*
Type of School (Ref: Municipal Non Selective)				
Private Voucher Non Selective				0.16
Municipal Selective				0.16
Private Voucher Selective				0.10
Private Fee				0.26
Explained Variance (%)				
Within-school	[85]	2	1	1
Between-school	[15]	35	86	91
N cases	1634	1634	1634	1634

*p < .05. **p < .01.

The random part of the models in Table 23 indicates that student individual characteristics (gender and SES) explain 35 per cent of the between-school variance in math achievement. Additional multilevel models were estimated to separate the effects of gender and student SES, including only gender and subsequently only student SES as covariates to explain student math scores. The analysis revealed that gender explains 2 per cent of the total within-school variance and 0 per cent of the total between-school variance in student math test scores, and student SES explains 0 per cent of the within-school variance and 38 per cent of the between-school variance. These results again support the view that social segregation, the unequal distribution of students from different SES across schools in Santiago, explains a large amount of the variance in student achievement in math. The fact that student SES does not contribute to explaining

the within school variation in math achievement may reflect a high level of SES homogeneity of students in each type of school.

Just as with reading, Models 2 and 3 show that school SES is the most relevant variable to explaining the between school variance in math scores, and contributing to overall variance in math achievement. The results suggest that the different school contexts created by social segregation in the secondary school system of Santiago has a strong effect on student math achievement.

Summary

The results in this section show that in a socially segregated educational system like Santiago, there are significant differences in how students learn and achieve in reading and math, and that the differences are largely explained by the SES composition of the student body in the schools formed through the organisation of schools and associated funding policies. The academic levels students reach are not only a product of who they are in terms of gender and individual SES of family background, but also to who they get to mix with in schools in terms of the overall SES composition of the type of school attended.

Student performance in pivotal subjects such as math and reading is associated with chances of continuing in further education and being successful in the labour market (Larrañaga, Cabezas, & Dussaillant, 2014; Mizala & Romaguera, 2004). The results in this section reveal that social segregation in the secondary school system in Santiago is associated with large differences in student reading and math achievement, and jeopardises future chances for success. Participation in post-school study and work partly depends on performance at school, and to the extent that social segregation across Santiago secondary schools influences success at school it also influences later career opportunities. This feature of Santiago schooling undermines particularly the opportunities of segregated low-income students who rely on their local municipal schools to participate actively in further education and in the labour market.

8. SOCIAL AND EMOTIONAL SKILLS

Proficiency in math and reading are necessary but not the only important skills for the future success of students. As mentioned in Chapter 4, recent literature has focused on the need for students to develop social and emotional skills, or what are sometimes termed 21st Century or soft skills. They have recently been recognised as important to explaining future life outcomes, as important according to some as cognitive skills (or maybe even more relevant) (Belfield et al., 2015; Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011; Heckman & Kautz, 2012; Levin, 2012). The skills include things such as conscientiousness, grit, resilience, creativity, communication and team work or collaboration. This chapter will examine the relationships between segregation and the levels of selected social and emotional skills.

Differences in social and emotional skills

Two types of skills are considered in this chapter. Firstly those related to what are termed interpersonal skills or the skills used when communicating and interacting with other people, both individually and in groups. Second, those that are described as intrapersonal skills or the sorts of skills associated with how individuals manage, organise and conduct themselves. Four skills (two of each sort) are reported.

Table 24 shows the proportions of students who scored above average on the two intrapersonal and two interpersonal skills considered in this study by type of school. As depicted in the table, there are some major differences in the proportions by type of school, although not as strong as for cognitive skills (math and reading achievement in Chapter 7).

One thing to note is that the differences between students in Private Fee and Municipal Non Selective schools are much more marked for interpersonal skills than for intrapersonal skills. The smallest gaps are in self-management skills, where the proportions of students above average are close to 50 per cent across all types of schools. Self-management refers to how organised students report being in managing their time, and staying on task. In the case of the other intrapersonal skill—conscientiousness—the proportions of above average students in Private Voucher Non Selective, Municipal Selective and Private Voucher Selective schools are around 50 per cent, slightly less in

Municipal Non Selective schools at 45 per cent, and reaching 69 per cent in Private Fee schools. Conscientiousness refers to effort, perseverance and hard work, and the results suggest students in Private Fee schools record higher levels than do students in Municipal Non Selective schools.

In the case of interpersonal skills, there are higher variations in the proportions of above average students by type of school than in intrapersonal skills. The lowest proportions of students above average in collaboration and communication skills are found in Municipal Non Selective schools, followed by students in Private Voucher Selective schools, while again the largest proportions are found in Private Fee schools. Students enrolled in Private Voucher Non Selective schools and Municipal Selective schools have similar proportions of students above average in collaboration and communication skills – around 47 per cent and 55 per cent respectively.

Across all types of schools, students in Private Fee schools show the highest levels of social and emotional skills, while students at Municipal Non Selective schools show the lowest, apart from self-management.

Table 24 Proportion of students above average in intrapersonal and interpersonal skills, by type of school

	Municipal-Non Selective	*Private Voucher-Non Selective*	*Municipal-Selective*	*Private Voucher-Selective*	*Private Fee*
Intrapersonal Skills					
Self-Management	51.6	51.7	53.4	46.6	49.6
Conscientiousness	44.9	53.6	52.7	50.6	69.3
Interpersonal skills					
Collaboration	37.5	47.9	45.4	43.0	63.9
Communication	44.7	55.9	54.0	49.4	74.1

Random intercept multilevel models were conducted to identify the percentage of between-school variance in social and emotional skills. Table 25 shows the VPC for the different scales of social and emotional skills. The results indicate that the between-school variance in student social and emotional skills is much lower than in cognitive skills (math and reading achievement in Chapter 7), and confirm larger between-school differences in interpersonal skills than in intrapersonal skills. The results suggest that differences in social and emotional skills are found in Santiago largely within schools, and that schools

do not contribute as much to diversity in levels of skills. In other words, despite the sizeable levels of social segregation, schools do not contribute as much to differences in social and emotional skills. Though there are some differences in interpersonal skills that are worthy of note.

The results in Table 25 suggest that the separation of students along SES lines may be having a larger influence on those skills that require relationships with others or groups of people. The between-school variance for the intrapersonal skills scales are sufficiently low to dismiss the need to approach the analysis using a nested model. Therefore, because of this study's interest in the effects of segregation on student skills, the analysis that follows is focused on interpersonal skills only.

Table 25 Between-school variance in student social and emotional skills

	Between-School Variance (%)
Intrapersonal skills	
Self-Management	2
Conscientiousness	4
Interpersonal skills	
Collaboration	6
Communication	7

Models 1 to 3 in Table 26 show that the two student variables included in the models, gender and student SES, are significant predictors of the capacity of students to work well in groups, understand, get along with others, help others, and treat others fairly. Being a girl increases this capacity compared to boys, and being from a higher SES background is a significant influence on having higher level skills.

Model 2 reveals that school SES has a positive effect on student collaboration skills, although this effect is no longer significant once type of school is introduced in Model 3. The type of school does not seem to be significant to explain student levels of collaboration skills in Model 3. However, it is worth noting that the sign of the effects points to less collaboration skills in selective schools than in other school types.

The random part of Model 1 in Table 26 reveals that student gender and SES explain about half of the variance between schools (47 per cent). When school SES is added in Model 2, 59 per cent of the between-school variance in student collaboration skills is explained. This is increased to 75 per cent when type of school is added to the model. In

other words, about one-quarter of the between-school differences is due to type of school and mean school SES.

Table 26 Multilevel model estimates of collaboration skills

Parameters	Null Model	Model 1	Model 2	Model 3
Constant	0.00	-0.07	-0.06	-0.10
Individual Level				
Gender (Ref: male)		0.16**	0.16**	0.16**
Student SES		0.13**	0.09**	0.09**
School Level				
School SES			0.15*	0.17
Type of School (Ref: Municipal Non Selective)				
Private Voucher Non Selective				0.13
Municipal Selective				-0.07
Private Voucher Selective				-0.23
Private Fee				0.07
Explained Variance (%)				
Within-school	[94]	1	1	1
Between-school	[6]	47	59	75
N cases	2025	2025	2025	2025

*p < .05. **p < .01.

Communication skills are crucial in today's world. The models in Table 27 indicate that the most important variables considered in the analysis for explaining levels of communication skills are student SES and Private Fee schools. The effect of student SES is slightly reduced when school variables are included in Models 2 and 3, but remains strong and significant in predicting student communication skills. Studying at a Private Fee school significantly increases the chances of having stronger communication skills than studying at a Municipal Non Selective school.

Table 27 Multilevel model estimates of communication skills

Parameters	Null Model	Model 1	Model 2	Model 3
Constant	0.00	0.02	0.02	-0.10
Individual Level				
Gender (Ref: male)		0.00	0.00	-0.01
Student SES		0.22**	0.20**	0.20**
School Level				
School SES			0.07	0.01
Type of School (Ref: Municipal Non Selective)				
Private Voucher Non Selective				0.17
Municipal Selective				-0.01
Private Voucher Selective				-0.10
Private Fee				0.30
Explained Variance (%)				
Within-school	[93]	2	2	2
Between-school	[7]	68	70	91
N cases	2023	2023	2023	2023

*p < .05. **p < .01.

The unconditional model in Table 27 indicates that seven per cent of the total variance in student communication skills is found between schools. Much of this is due to the students rather than the schools. The random part of Model 1 shows that student SES explains more than two thirds of the total between-school variance in student levels of communication skills. Even though school SES and some types of schools are not significant predictors of student levels of communication skills, they help reduce the unexplained between-school variance to around nine per cent in Model 3. In other words, social segregation contributes, even if in fairly small quantum, to the variation in levels of communication skills of students.

Summary

The findings in this chapter show that social segregation in Santiago is associated with different levels of student social and emotional skills, specifically the interpersonal skills of communication and collaboration. However, the estimated effect of segregation on these skills is lower than the effect on cognitive skills discussed in the previous chapter.

Student SES is a strong positive predictor of communication and collaboration skills, and given the levels of social segregation in the system, a powerful variable for explaining between-school variance. Beyond individual student SES, mean school SES has an effect

on student collaboration skills, such that students at lower SESs schools have less success in developing collaboration skills than do students at higher SES schools. Although type of school is not a significant predictor of student levels of communication and collaboration skills, it considerably reduces the unexplained between-school variance in both types of skills.

Differences in student interpersonal skills associated with social segregation found in Santiago could have follow-on effects in terms of opportunities to thrive academically, graduating from high school and enrolling in higher education, as well as affecting further work opportunities and chances to achieve economic security (Duncan & Magnuson, 2011; National Research Council, 2013).

9. WORK AND STUDY PLANS

Student work and study plans can influence decisions and paths taken into further education, which in turn affect chances of getting a good job and being employed. In Santiago, there are four main study and work options that 10th grade students have available to plan and decide on:

(1) the type of program they will take in the last two years of secondary education—academic or vocational,

(2) at the completion of high school, whether or not they will pursue a university place

(3) at the completion of high school, whether or not they will pursue place in a Professional Institute or Centre for Vocational Training, and

(4) at the completion of high school, whether they will try to find a job.

If students plan to pursue a university place then there are two further things to decide on:

(5) sitting the university entrance exam which will determine if they can gain a university place, without further preparation, or

(6) whether or not they will defer sitting the entrance exam and prepare for the exam through a pre-university course.

This chapter looks at differences in student work and study plans by type of school and social background. Initially, the results are provided descriptively before turning to model estimates to examine the effects of segregation.

Variations in work and study plans

Tables 28 to 30 present the main work and study choices of students by type of school.

Senior school program

Table 28 shows the percentages of students wanting to enrol in an academic course in the two final years of secondary school and those wanting to enrol in vocational education. The percentages of students who would like to continue into an academic program vary quite markedly across types of schools: roughly eight in 10 students in selective schools

would like to follow a scientific-humanistic program the following year, compared to six in 10 students at Private Voucher Non Selective schools and only three in 10 students at Municipal Non Selective schools. The rate for students in Private Fee schools choosing academic programs is almost three times that of students in Municipal Non Selective schools—75.5 per cent compared to 27.3 per cent.

Table 28 Senior years academic or vocational education plans, by type of school (%)

	Municipal-Non Selective	*Private Voucher-Non Selective*	*Municipal-Selective*	*Private Voucher-Selective*	*Private Fee*
Academic program	27.3	58.2	80.5	78.5	75.5
Vocational education program	72.7	41.8	19.5	21.6	24.5

Pursue a university place

At the end of high school, students decide whether or not to sit the university entrance test (PSU). They may also decide to wait until they are better prepared by undertaking pre-university training which focuses on preparation for the PSU. Table 29 presents figures on those who plan to sit the PSU and whether or not they will wait to sit the test by going to a pre-university course. Estimates are also provided of those who separately indicated that they intend to go to university as part of their future plans.

Table 29 Future university plans, by type of school (%)

	Municipal-Non Selective	*Private Voucher-Non Selective*	*Municipal-Selective*	*Private Voucher-Selective*	*Private Fee*
Sit the PSU	79.8	94.0	98.4	95.7	96.6
Enrol in pre-university course	46.0	43.1	39.6	40.4	23.6
Enrol at university	54.9	79.0	91.1	87.2	94.6

In terms of those planning to sit the university entrance test, the numbers at all schools apart from Municipal Non Selective schools are almost universal—over 94 per cent. Most students would like to sit the PSU once they finish school. For students at the non-selective Municipal schools the rate is lower at 79.8 per cent, but still involves the majority. The PSU figures in the thinking of most 10th Grade students in Santiago, irrespective of type of school.

Most students may aspire to go to university, but some may feel that they first need to better prepare for the university entrance exam by enrolling at a pre-university, which can involve study for up to one year. Table 29 shows if entering university figures in any of the three main options for students after leaving school, and whether enrolling at a pre-university appears in these priorities. The plan to enter a pre-university course may reflect a lack of confidence in sitting the PSU right off the bat after completing school, or a desire to sure-up chances.

There are differences in student plans to attend university, despite intentions to sit the university-entrance test. While university figures in the plans of most students in selective schools—up to 95 per cent of students in Private Fee schools think of university as their priority after school—it does not show up in the plans of 45 per cent of students at Municipal Non Selective schools. Although university plans of students at Private Voucher Non Selective schools are less prominent than in selective schools, eight in 10 students would like to enter university at some stage after school.

Table 29 also reveals that while university figures in the plans of virtually all students at Private Fees schools, almost 24 per cent of them believe that they will require to enrol at a pre-university to prepare for the PSU. The rates for those planning to enrol in a pre-university course are higher in all other types of school, and up to almost double in in Municipal Non Selective schools (46.0 per cent).

Type of school displays differences in student plans to attend university at some point in life, and also differences in how confident students feel about their chances of doing so, expressed by differences in plans to enrol and invest time and resources in a pre-university course to prepare for the PSU.

Vocational study or work

Table 30 presents the results of students choosing to enrol in a Professional Institute or Centre for Vocational Training as their first priority after school, as well as the percentage of students who plan to find a job as their first priority after school.

Table 30 Studying at a Professional Institute/Centre for Vocational Training and finding a job as the first priority after school, by type of school (%)

	Municipal-Non Selective	*Private Voucher-Non Selective*	*Municipal -Selective*	*Private Voucher-Selective*	*Private Fee*
Study at Professional Institute or Centre for Vocational Training	15.9	8.9	4.5	5.4	0.8
Find a job	15.9	10.8	3.8	3.2	2.6

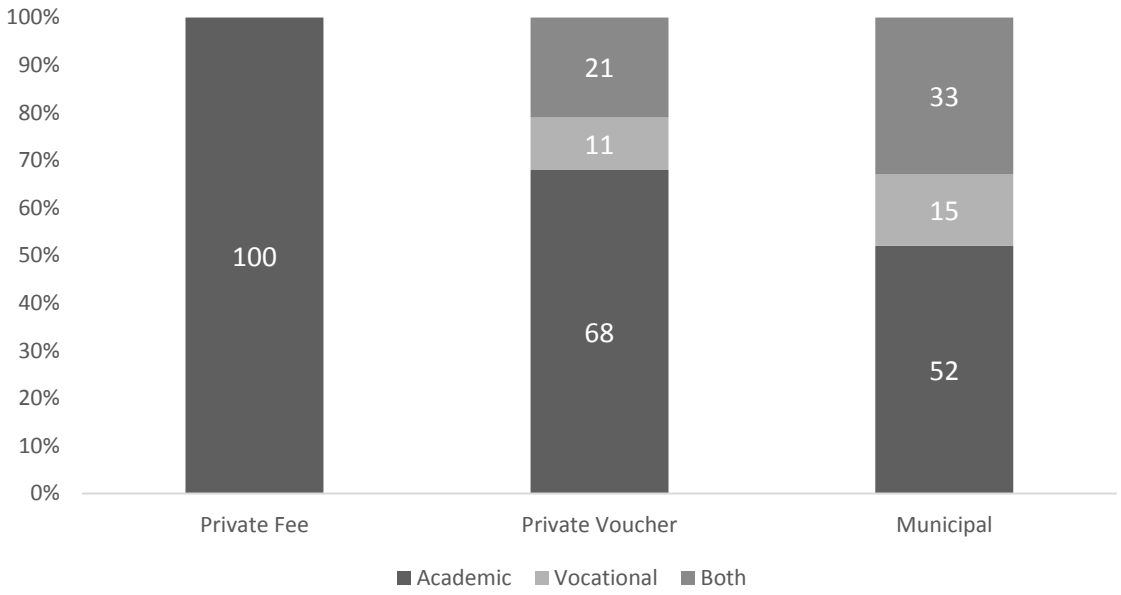
Although Chile has experienced a large increase in university enrolment rates over the past decade, many universities are still quite selective and expensive, and Professional Institutes and Centres for Vocational Training have become an attractive alternative for further study plans due to lower barriers to entry and costs. Even so, relatively few students in 10th Grade are planning to pursue a place in a Professional Institute or Centre for Vocational Training. The numbers are highest among students in non-selective Municipal schools (15.9 per cent) with virtually no students in Private Fee schools (0.8 per cent) planning this pathway.

The proportions of students planning to find a job rather than pursue study once they leave school is similar to the pattern for those planning to study at a Professional Institute or Centre for Vocational Training: 15.9 per cent in non-selective Municipal schools, 3.8 per cent in Municipal Selective schools, 3.2 per cent in Private Voucher Selective schools and 2.6 per cent of students in Private Fee schools.

Senior school programs

As mentioned previously in Chapter 3, in the senior years secondary schools in Chile can offer different sorts of courses: humanistic-scientific (academic), technical-professional (vocational), or both. Type of program offered is highly dependent on the type of school. As Figure 10 shows, there are no Private Fee schools providing vocational programs in Santiago, and Municipal schools are more likely to offer vocational or academic/vocational alternatives than are Private Voucher schools, with 48 per cent of Municipal schools in Santiago offering these types of programs, compared to 32 per cent of Private Voucher schools.

Figure 10 Type of senior secondary programs offered in Santiago, by type of school (%)



Source: Mineduc, 2018.

According to the ISCY Santiago sample, those Municipal and Private Voucher schools in Santiago that are academically selective focus solely on preparing students for university entrance, and do not provide vocational programs. There are seven schools in the ISCY sample that provide vocational programs exclusively or in combination with academic programs, four of them are Municipal Non Selective schools and three Private Voucher Non Selective schools.

The program focus of schools provides a further layer of stratification and segregation. While selective-entry schools and Private Fee schools focus only on academic programs and do not offer vocational alternatives, a number of Private-Voucher Non-Selective schools and Municipal Non-selective schools also offer only academic program options, as apparent from Figure 10. In the ISCY-Santiago sample it is clear that within Municipal and Private Voucher non-selective schools the program focus of the school further separates the population along academic and social lines. Table 31 presents information on the background characteristics of students by type of school and by type of program offered at the school. For Municipal and Private-Voucher non-selective schools the results are presented separately for students in schools that only offer academic programs and students in schools that offer vocational options.

Table 31 Background characteristics of students, by type of school and program focus of school

	Municipal non-selective		Private voucher non-selective		Municipal Selective	Private Voucher Selective	Private Fee
	Academic only	Vocational options	Academic only	Vocational options	Academic only	Academic only	Academic only
Gender							
Boys	53.5	45.3	48.1	57.5	70.9	44.0	54.8
Girls	46.5	54.7	51.9	42.5	29.1	56.0	45.3
SES							
Lowest quintile	47.8	51.2	16.7	65.5	6.8	3.4	0.4
Lower middle	22.8	31.0	26.8	26.4	17.3	10.2	2.5
Middle	13.0	12.3	31.3	6.0	27.8	22.0	6.7
Upper middle	12.0	3.4	19.2	1.7	27.8	40.7	19.0
Highest quintile	4.3	2.0	5.9	0.5	20.3	23.7	71.5
Math test score							
Lowest quartile	35.6	42.3	22.7	28.1	21.3	13.8	13.1
Lower middle	28.7	23.5	25.6	33.9	18.9	26.6	13.1
Upper middle	19.5	20.6	27.8	25.7	27.1	27.7	18.2
Highest quartile	16.1	13.6	23.9	12.3	32.6	31.9	55.7

Information is provided on the SES background of students (grouped into quintiles of SES), gender and maths test scores (grouped into quartiles). The results show that schools which offer vocational options (either as the only option or an option along with the academic program) have the most socially disadvantaged students and the weakest maths students compared to the corresponding type of school. For example, 82.2 per cent of students in Municipal Non Selective schools that offer vocational options are from low SES origins (lowest and lower middle quintiles of SES) compared to 70.6 per cent of students in other Municipal Non-selective schools. The differences are even more striking in Private Voucher Non Selective schools—91.9 per cent of students in schools that offer vocational options compared to only 43,5 per cent of students in schools that offer academic programs only. Similarly, 62 per cent of students in Private Voucher schools that offer vocational options are the weakest maths achievers (bottom two quartiles) compared to 48.3 of students in Private Voucher schools that offer the academic program only.

Type of program offered by schools produces a further layer of segregation of students socially and academically.

The decision to opt for an academic program or vocational education during the last two years of secondary school is in part determined by the type of program offered at the school students are enrolled in during 10th Grade. Given the association between type of school and type of program offered, it is worth looking at what predicts whether someone enrols in a school that only offers an academic program compared to enrolling in a school that offers vocational programs. It is also worth considering the influence of future plans—wanting to go to university, find a job, enter a vocational training centre, or enter a course to prepare for PSU. The results of the modelling undertaken using a logistic regression procedure are presented in Table 32. The results are based on a control or comparison group comprising boys from the highest quintile of SES and the highest quartile of maths achievers who plan to enter university as their first priority after completing school. Significant increases or falls in enrolment at academic program only schools are marked in the table. The results of the models are presented as predicted or modelled probabilities (the likely rate of enrolling) expressed as percentages. The likelihood of high SES, high achieving boys attending a school that offers only an academic program is very high (90.4 per cent). The percentages listed in the column below this figure (Model 1) are the changes in percentages associated with a change in characteristic of the student. For example, for boys the plan to enter a Professional Institute or Centre for Vocational Training rather than go to university reduces the chances of enrolment at an academic program school to 55.5 per cent. Plans to enter the workforce directly or enter a PSU preparation course also significantly reduces the chances of being at an academic program only school.

Results in Table 32 show that the likelihood of students enrolling in schools that offer an academic program only compared to enrolling in a school that offers vocational options differ significantly depending on student background. The odds of being enrolled at an academic program only school decreases significantly as student SES falls. The likelihood of being at a school that only offers academic programs if you are from low SES families (lowest quintile) is 30 percentage points below that for students from high SES families (highest quintile). This holds after accounting for student achievement and for post-school plans.

Table 32 Enrolment at a school that provides an academic program only: probabilities expressed as percentages

Parameters	Model 1	Model 2
Comparison group	90.4	99.3
Gender (Ref: boys)		
Girls	87.8**	99.3
Post-school plans (Ref: Enter University)		
Enter a pre-university course to assist PSU	57.4**	99.3
Enrol in Professional Institute or Vocational Study	55.5**	97.8
Find a job	65.2**	97.0
Student SES (Ref: Highest quintile)		
Lowest quintile		67.5**
Lower middle		86.8**
Middle		95.9*
Upper middle		98.6
Math test score (Ref: Highest quartile)		
Lowest quartile		98.5
Lower middle		98.7
Upper middle		99.1
Nagelkerke R Square	18.5	47.2

Note: The comparison group comprises boys from the highest quintile of SES and the highest quartile of maths achievers planning to go to university as their first priority after leaving school

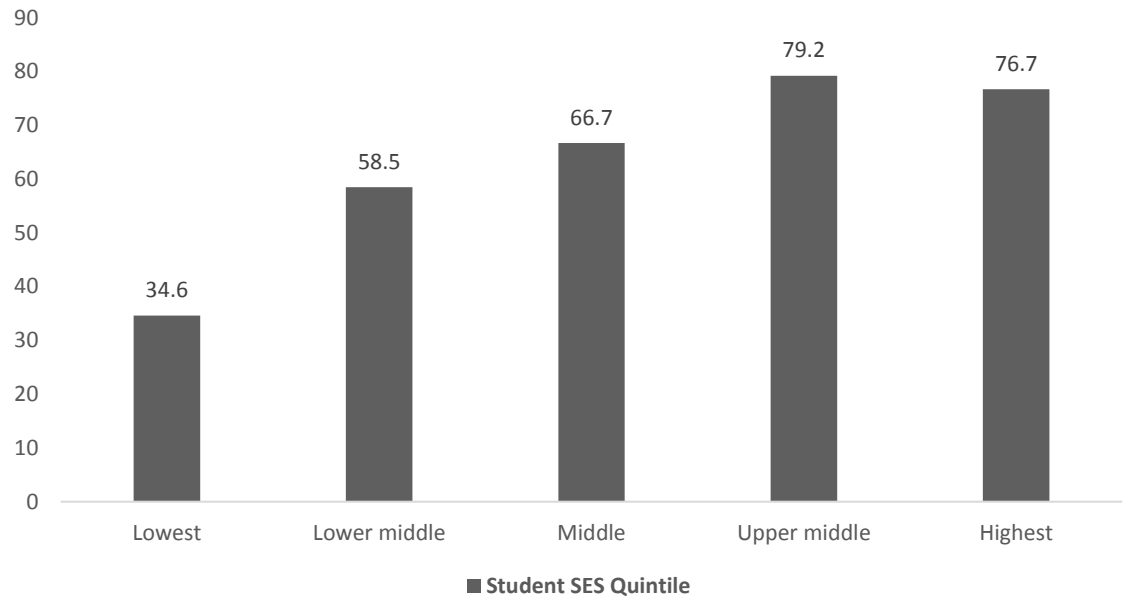
*p < .05. **p < .01.

Social background is the critical factor in determining enrolment at an academic program only school. A feature of model 2 in which student SES is introduced as well as math achievement is that differences in post-school plans are no longer a significant influence, independent of SES which is the key independent predictor. The results don't mean that future plans aren't important to the type of school attended based on program but that the plans are mediated by SES. In other words, SES shapes future plans and also the type of school attended based on program. However, SES has a large independent effect meaning that irrespective of plan, SES shapes enrolment. This is consistent with an intensification of SES differences in stratification and segregation associated with the organisation and operation of schools, programs and vouchers.

Senior school program plans

Figure 11 shows that there is a relationship between student plans to study an academic program and student SES—plans rise with SES. The percentage of students in the lowest SES quintile that plan to take an academic program in the last two years of secondary education—34.6 per cent—is less than half the percentage of students in the upper middle and highest SES quintiles (79.2 and 76.7 per cent, respectively) who are planning this option.

Figure 11 Plans to pursue an academic course in Year 11, by SES quintile (%)



In order to estimate the independent effects of background variables on study plans, a logistic regression model was fitted. The estimated coefficients in Table 33 represent the predicted odds of students planning the academic program in the senior years. Estimates less than one indicate that the odds of planning to enrol in an academic program are lower than they are of planning a vocational program in the last two years of secondary education, while an estimate greater than one indicates higher odds of planning an academic program than a vocational program. A coefficient of 1.34 for girls, for example, indicates that compared to boys girls have 1.34 to 1.0 odds of planning an academic program over a vocational program in the final years of secondary school. The comparison group for the full model (model 3) comprises boys from low SES backgrounds (lowest quintile) who are low maths achievers (lowest quartile) and planning to enter the workforce after completing school.

Table 33 Odds of planning to study an academic (Humanistic-Scientific) program estimated using a logistic regression model

Parameters	Model 1	Model 2	Model 3
Comparison group	0.45**	0.41**	0.29**
Gender (Ref: boys)			
Girls	1.34**	1.35**	1.26
Student SES (Ref: Lowest quintile)			
Lower middle quintile	2.73**	2.22**	1.88**
Middle	3.93**	3.42**	2.55**
Upper middle	7.54**	6.16**	4.59**
Highest quintile	6.44**	4.73**	3.09**
Reading score (Ref: Lowest quartile)			
Lower middle quartile		1.28	1.19
Middle		1.42*	1.27
Upper middle		1.50*	1.27
Highest quartile		1.28	1.19
Post-school plans (Ref: work as first priority)			
PSU preparation at Pre-university			1.11
Enter University			3.34**
Enter Professional Institute or Centre for Vocational Training			0.68
Nagelkerke R Square	0.39	0.46	0.49
N cases	1863	1863	1863

*p < .05. **p < .01.

Model 1 in Table 33 reveals that the odds of planning to continue into a humanistic-scientific course are significantly higher for girls than for boys (odds of 1.34). SES is a key predictor. Compared to low SES boys (lowest quintile of SES), being from high SES backgrounds (highest quintile) multiplies the odds or the probability of planning to enter an academic program by about 6.44.

Model 2 reveals that the effects of gender and SES remain strong and significant when student reading test score is included. After taking account of post-school plan, gender is no longer a significant predictor, but SES remains so (Model 3).

Sitting the PSU

Sitting the PSU and gaining a high score is important in Chile for pursuing a professional career at a good quality university. Some students may opt not to sit the PSU right after

finishing school for several reasons including concerns about not doing well as well as things such as wanting a gap year to travel. Figure 12 shows that nearly all students in the sample plan to sit the PSU after leaving school regardless of the type of school they attend, except for students at Municipal Non Selective schools, where one in five students do not plan to pursue this option.

Figure 12 Plans to sit the university entrance exam (PSU), by school type (%)

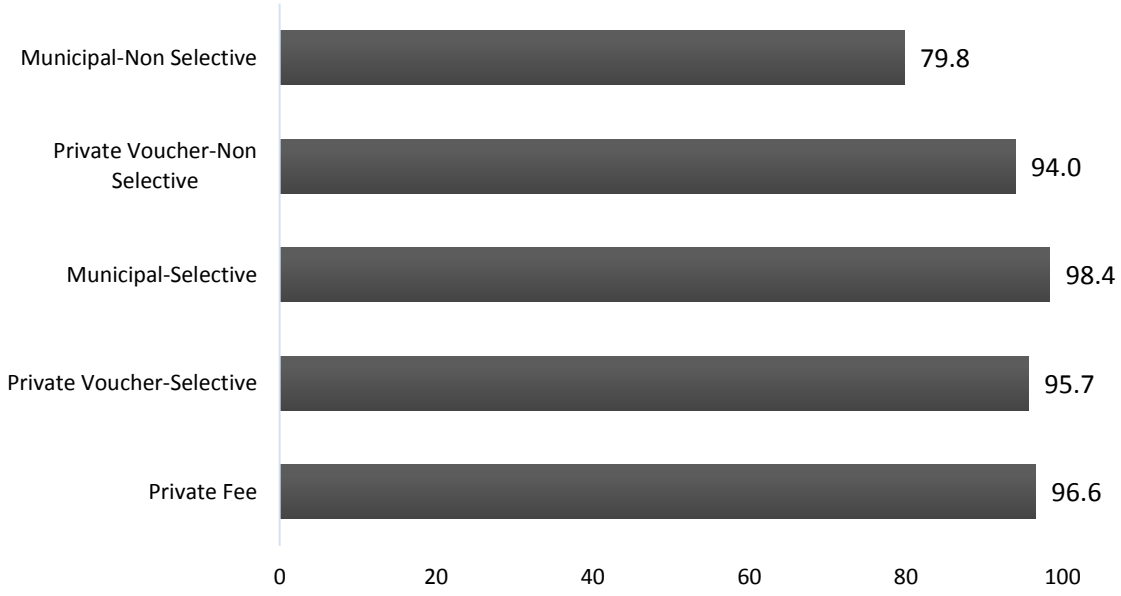


Table 34 shows the odds of planning to sit the PSU estimated using a logistic regression model. The results show that the odds of planning to sit the PSU after finishing school are higher for girls compared to boys, though not significantly so. The odds increase significantly with student SES, revealing that a 1 unit increase in student SES increases odds to 2.09 (Model 1), all else equal. Higher SES students are more likely to plan to sit the exam. Models 2 reveals SES is significant after controlling for reading achievement, though reading achievement is also a significant predictor of plans to sit the PSU.

Table 34 Odds of planning to sit the university entrance exam (PSU)

Parameters	Model 1	Model 2
Constant	17.14**	20.48**
Gender (Ref: male)	1.15	1.09
Student SES	2.09**	1.75**
Reading score		1.59*
N cases	2128	2128

*p < .05. **p < .01.

University plans

It is the case in Chile as elsewhere that studying at a university is important to entering a professional career and earning higher salaries (Mizala & Romaguera, 2004). It is therefore important to explore if attending university figures in the future study plans of students, and if they are influenced by the school that they are attending. Figure 13 reveals that the proportion of students planning to study in a university at some stage is much lower among students in Municipal Non Selective schools—54.9 per cent— than in all other types of schools, where the proportions can be as high as 90 per cent or more (Municipal-selective and Private Fee schools).

Figure 13 Plans to enter University, by school type (%)

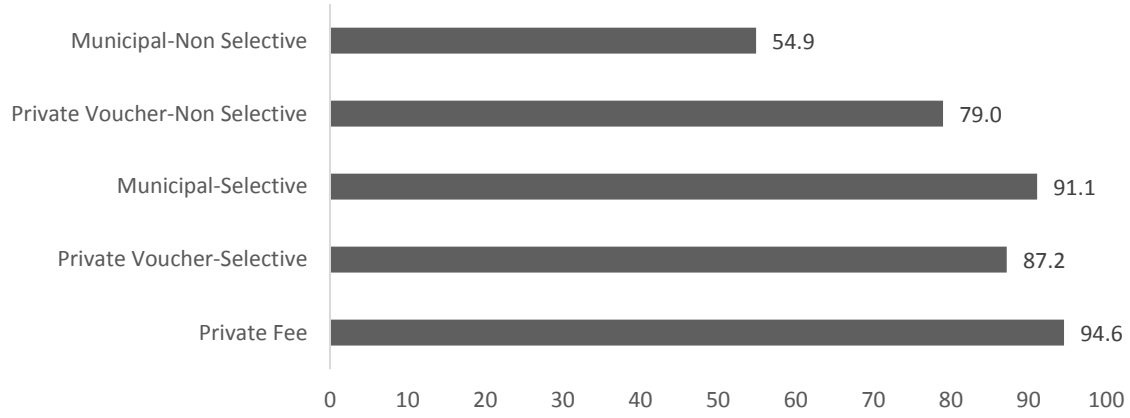
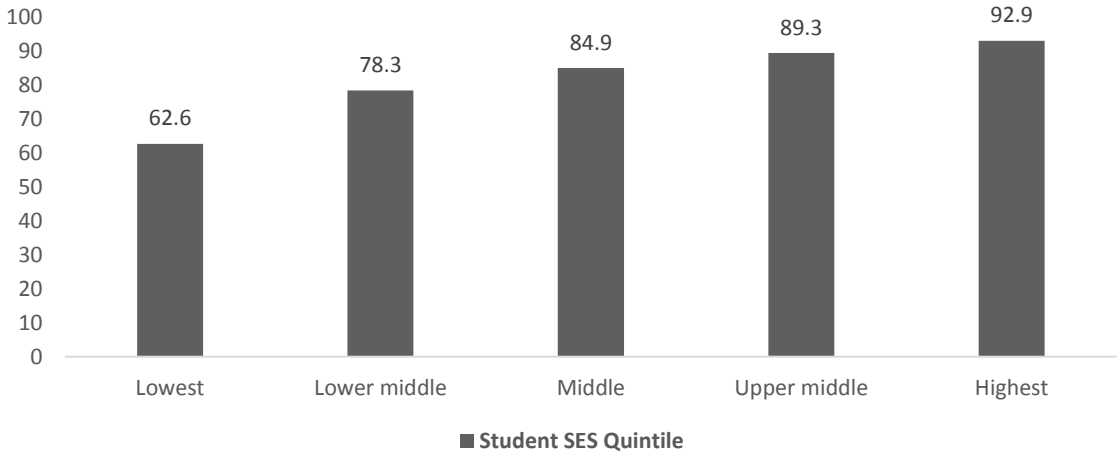


Figure 14 reveals that student SES is also associated with differences in the extent to which university figures in the study plans of students after they complete school. The percentage of students considering university among their priorities after school increases with rises in SES—it is higher among students in the lower middle SES quintile than in the lowest SES quintile—78.3 compared to 62.6 per cent, respectively—and reaches 89.3 and 92.9 among students in the upper middle and highest SES quintiles.

Figure 14 Plans to enter University, by student SES Quintile (%)



The results of the multilevel logit model in Table 35 show that girls have significantly increased odds of planning to enter university after completing school than do boys and this holds after controlling for different student and school characteristics, except the inclusion of school type (Model 4) where the odds are still higher for girls than for boys but not statistically significantly so.

Student SES is a significant predictor of the odds of planning to attend university. The odds of planning to enter university increase to 1.29 with a standard deviation increase in student SES, even after controlling for gender, reading score and contextual variables in Model 4. Reading score is also a significant predictor of the odds of considering university among future plans.

The results for Model 3 suggests that the SES of the school also affects student aspirations to study at a university, although it is no longer significant in Model 4, when the different types of schools are included. Model 4 reveals that being at a Municipal Selective school and Private Voucher non-selective school significantly increases the odds of university figuring in the future plans of students compared to students at Municipal Non-Selective schools.

In all, student aspirations to do future study at a university, and therefore increase their opportunities to find a professional job and earn higher salaries, are influenced not only by their SES and academic performance, but also by the school they attend.

Table 35 Odds of planning to study at a University estimated using a multilevel logit model

Parameters	Model 1	Model 2	Model 3	Model 4
Constant	4.18**	4.69**	5.15**	2.23**
Individual Level				
Gender (Ref: male)	1.40**	1.34*	1.32*	1.30
Student SES	1.63**	1.45**	1.28**	1.29**
Reading score		1.58**	1.50**	1.48**
School Level				
School SES			1.84**	1.27
Type of School (Ref: Municipal Non Selective)				
Private Voucher Non Selective				2.37**
Municipal Selective				4.19**
Private Voucher Selective				2.01
Private Fee				3.10
N cases	2139	2139	2139	2139

*p < .05. **p < .01.

While university may figure in the future plans of students, some may feel less confident about their performance in the entrance exam (PSU), and may opt to prepare for the exam at a pre-university training provider or coaching institution which focuses on this role. Figure 15 shows that roughly four in ten students are considering enrolling at a pre-university course among their priorities after school, except for students in Private Fee schools, where just over two in ten students are considering this option. This may suggest that students in Private Fee schools are more confident in their chances of success in the PSU than are students in all other types of schools, including those in the academically selective municipal and Private Voucher schools.

Figure 15 Plans to enrol in a Pre-university, by school type (%)

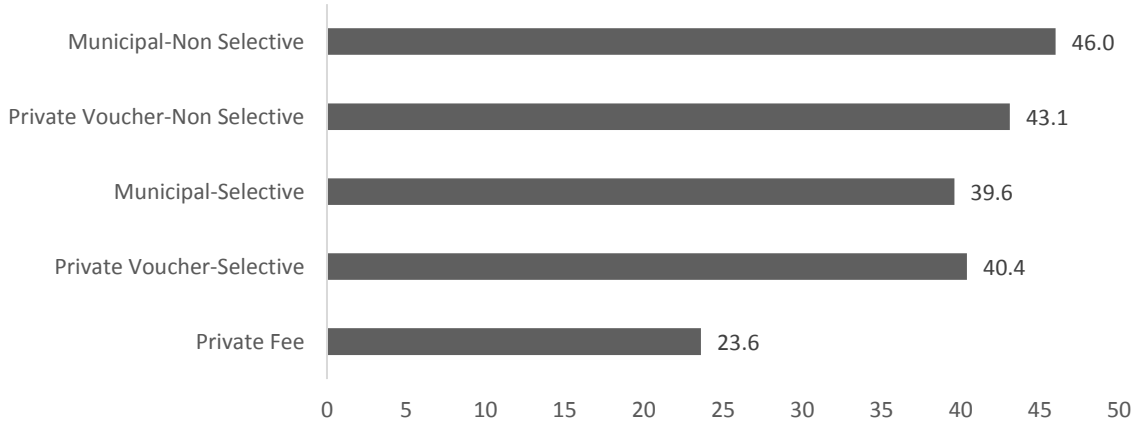
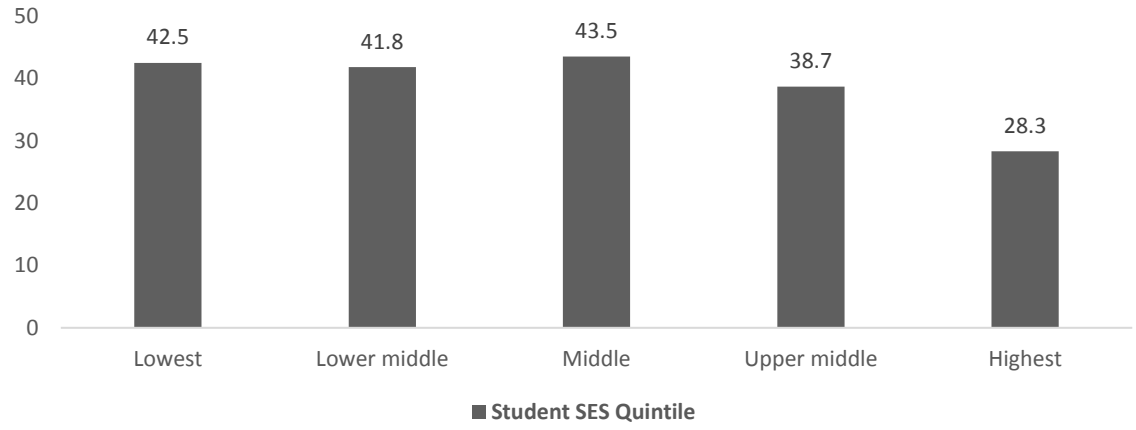


Figure 16 shows a similar picture of the likelihood of planning to enrol in a pre-university by student SES quintile. A similar proportion of students—around four in ten students—in all but the highest SES quintile are considering enrolling in a pre-university among their priorities after school, while less than three in ten students in the highest SES quintile plan to do so.

Figure 16 Plans to enrol in a Pre-university, by student SES Quintile (%)



The results in the multilevel logit models in Table 36 help clarify the effects at the individual and school levels measured as the odds of planning to study at a pre-university to prepare for the PSU. The results show that the odds of planning to study at a pre-university institution among the priorities after finishing school are much the same for both males and females, and do not seem to be different for students from different SES and reading achievement backgrounds.

Model 3 shows that the odds of students planning to study at a pre-university institution are reduced significantly by a one unit increase in school SES. Although this school effect remains in Model 4 when type of school is introduced, it is no longer significant.

Table 36 Odds of planning to enrol in a pre-university course estimated using a multilevel logit model

Parameters	Model 1	Model 2	Model 3	Model 4
Constant	0.61**	0.63**	0.60**	0.72
Individual Level				
Gender (Ref: male)	1.07	1.07	1.09	1.08
Student SES	0.91	0.93	1.05	1.06
Reading score		1.00	1.06	1.06
School Level				
School SES			0.62**	0.77
Type of School (Ref: Municipal Non Selective)				
Private Voucher Non Selective				0.95
Municipal Selective				0.85
Private Voucher Selective				0.93
Private Fee				0.53
N cases	2139	2139	2139	2139

*p < .05. **p < .01.

Post-school plans for vocational training

Wage differentials by type of career and tertiary institution in Chile are very high compared to other countries, and studying at a Professional Institute or Centre for Vocational Training rather than a university is associated with lower future earnings. Mizala and Romaguera (2004) estimated that individuals who completed a university degree earned 3.68 times more than people who completed secondary education, much higher than the differential found in the United States (between 1.20 and 1.70). The estimation for individuals who completed a technical higher degree in Chile was 1.88, and 1.55 for those who studied but did not finish a university or technical degree (Mizala & Romaguera, 2004). It is therefore important to explore whether studying at a Professional Institute or Centre for Vocational Training figures as a first priority for students, and the individual and school variables that may affect this aspiration.

Figure 17 gives a first indication that while plans to study in a Professional Institute or Centre for Vocational Training as a first priority are generally low, they are much more common among students in Municipal Non Selective schools than in other schools, with 16 per cent of students in Municipal Non Selective schools planning to study in these types of institutions, compared to nine per cent of students in Private Voucher Non Selective schools, only around five per cent of students in selective Municipal and Private Voucher schools, and practically no students in Private Fee schools.

Figure 17 Plans to study at a Professional Institute/Centre for Vocational Training as a first priority, by type of school (%)

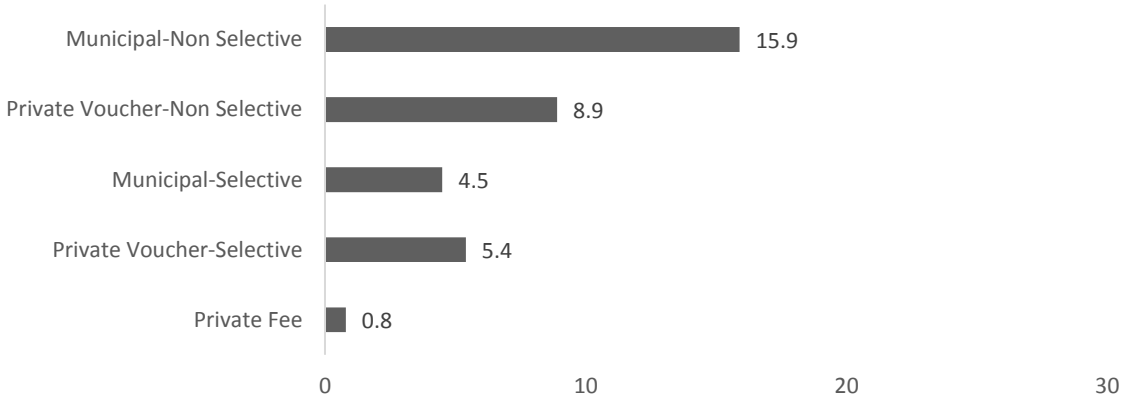


Figure 18 reveals that student plans to study in a Professional Institute or Centre for Vocational Training as a first priority are also markedly different according to student SES, with 15 per cent of students in the lowest SES quintile considering this option, compared to only 2.5 per cent of students in the highest SES quintile.

Figure 18 Plans to study at a Professional Institute/Centre for Vocational Training as a first priority, by student SES Quintile (%)

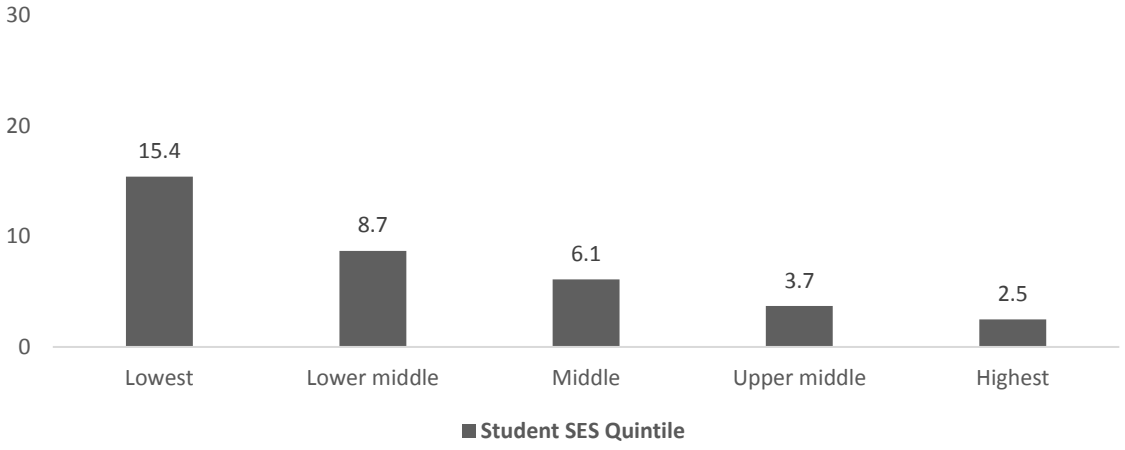


Table 37 shows that the odds of planning to study at a Professional Institute or Centre for Vocational Training institution as the first preference after completing school are lower for girls than for boys, and significant in models 1, 2 and 4. This finding may be due to the types of careers that are associated with Professional Institute or Centre for Vocational Training education. Larrañaga et al. (2014) suggest that the best paid vocational careers correspond to those typically entered by men, such as industrial mechanics, mining, electricity, chemistry and automotive mechanics, while women tend to enter the lower

paid vocational careers such as hospitality, secretarial, food and social programs. Model 4 reveals that this gender effect over planning to attend a Professional Institute or Centre for Vocational Training as the first priority following school, holds even after controlling for student SES, reading score, school SES and type of school.

Model 1 reveals that the odds of planning to pursue vocational or technical study post school significantly decrease as student SES rises, but the effect reduces when school SES and type of school are introduced in models 3 and 4. Mean school SES has a strong independent effect, with the results suggesting that the odds of planning to study at a Professional Institute or Centre for Vocational Training as the first priority after school are lower for students in schools where mean SES increases, independent of individual student SES. The results show a strong school effect. School SES remains significant when type of school is introduced in Model 3.

Table 37 Odds of planning to study at a Professional Institute or Centre for Vocational Training estimated using a multilevel logit model

Parameters	Model 1	Model 2	Model 3	Model 4
Constant	0.08**	0.07**	0.06**	0.08**
Individual Level				
Gender (Ref: male)	0.63*	0.68*	0.69	0.68*
Student SES	0.62**	0.67**	0.84	0.83
Reading score		0.61**	0.67**	0.68**
School Level				
School SES			0.45**	0.53*
Type of School (Ref: Municipal Non Selective)				
Private Voucher Non Selective				0.80
Municipal Selective				0.67
Private Voucher Selective				1.47
Private Fee				0.41
N cases	2124	2124	2124	2124

*p < .05. **p < .01.

Plans to enter the workforce

Some students plan to find a job and not do further study as their first priority after completing school. Figure 19 shows that in general finding a job is the first priority of a minority of students across all schools, but with relevant differences in the percentages across them. Around 16 per cent of students at Municipal Non Selective schools declare

that their first priority after school is to find a job, compared to only three and four per cent of students in selective schools.

Figure 19 Plans to find a job as a first priority, by type of school (%)

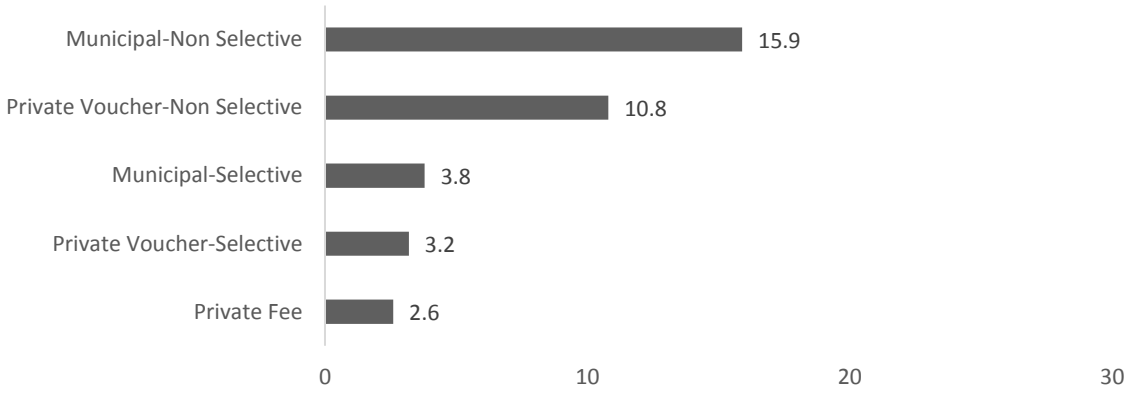


Figure 20 shows a similar pattern by student SES quintile: only four per cent of students in the upper middle and highest SES quintiles report that their first priority after school is to try to find a job, while 16 per cent of students in Municipal Non Selective schools plan to do so.

Figure 20 Plans to find a job as a first priority, by student SES Quintile (%)

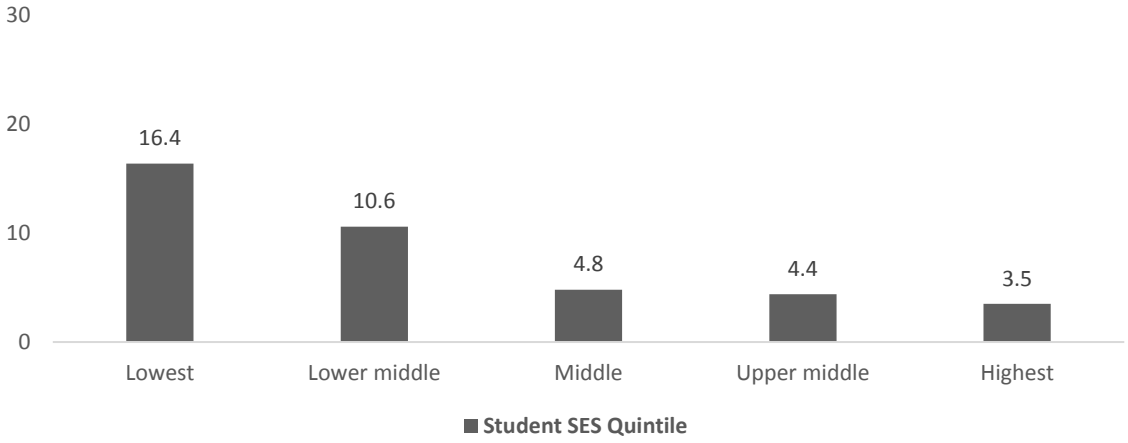


Table 38 shows that the odds of planning to seek a job after completing school, rather than pursue further study, are not significantly different for boys and girls, though slightly lower for girls. The estimate for student SES is significant with the odds falling as student SES rises, suggesting that low SES students are more likely to plan to look for a job as a first priority on leaving school than high SES students. This result holds in all models, indicating a significant student SES effect after controlling for other individual and school

characteristics. Model 2 shows that the odds of planning to find a job after school decrease significantly as student reading achievement scores increase, although the significance of this effect disappears in Models 3 and 4 after controlling for school level variables.

Model 3 suggests an inverse SES school effect on the odds of students planning to find a job after school: the higher the SES of the school, the lower the odds of students planning to seek entry to the labour force. However, this effect while still quite strong in odds terms is no longer significant when type of school is introduced in Model 4. While studying in a Municipal Non Selective school increases the odds of students planning to work after leaving school compared to students in all other types of school, the effect is not statistically significant.

Table 38 Odds ratios of finding a job estimated using a multilevel logit model

Parameters	Model 1	Model 2	Model 3	Model 4
Constant	0.08**	0.08**	0.07**	0.10**
Individual Level				
Gender (Ref: male)	0.95	0.94	0.95	0.93
Student SES	0.62**	0.64**	0.76*	0.76*
Reading score		0.79*	0.85	0.87
School Level				
School SES			0.57*	0.69
Type of School (Ref: Municipal Non Selective)				
Private Voucher Non Selective				0.84
Municipal Selective				0.44
Private Voucher Selective				0.53
Private Fee				0.73
N cases	2124	2124	2124	2124

*p < .05. **p < .01.

Summary

The descriptive analysis and the results of the regression models in this chapter show that there are marked differences in how students think about their plans for future work and studies across secondary schools in Santiago. Given that work and study plans can affect decisions and paths for life after school and influence the level of integration into the labour market, the marked social differences in work and study plans found in secondary students in Santiago represent a risk for social cohesion.

The analysis has shown that student work and study plans are influenced by family, peers and the structure of opportunities associated with school organisation and programs in

Santiago. Programs on offer at schools reflect the goals of the different types of schools and fuel the social and academic differentiation that occurs across schools. Selective schools and Private Fee schools do not offer alternatives. Vocational programs are available in the Municipal and Private Voucher Non-Selective schools, but they contribute to further stratification in these types of schools in SES terms, since low SES students more often enrol at schools offering vocational programs. Students of lower SES, lower reading scores and lower aspirations (less likely to plan to plan university) are more likely to attend schools that offer a vocational program than are higher SES. So even in a segregated system, in social, academic and fee terms, program offerings work to further stratify the population.

This plays out in the plans of students. Above and beyond the type of program offered in a school students currently attend, high achievers and to some extent high SES students are more likely than low achievers and low SES students to plan to take an academic course during senior secondary education.

Similarly, although most students plan to sit the PSU after school, being of higher SES and doing well in reading increase the likelihood of planning to do so. Beyond these effects, however, studying at a Municipal Non Selective school is associated with significantly lower odds in planning to sit the PSU, suggesting a contextual effect on student aspirations.

Studying at a university does not figure equally in the plans of all students in Santiago. As student SES and reading scores increase, students are more likely to conceive university as part of their plans after school. Furthermore, school context matters, and those students who attend Municipal Non Selective schools are much less likely to consider university studies as part of their plans after school than students at any other type of school, controlling for school SES and other individual characteristics. The results show that not only are higher SES students in high SES schools much more likely to think of university than are their counterparts, but they also feel much more confident of doing well in the PSU, as they are significantly less likely to consider the need to enrol at pre-university course to prepare for PSU among their priorities post school. This is the case for students in all types of school compared to students at Municipal Non Selective schools, but especially for those in Private Voucher Non Selective and Municipal Selective schools, after controlling for all the other variables in the models.

The likelihood of planning to enter a vocational program as a first priority after school by enrolling at a Professional Institute or Centre for Vocational Training is significantly lower for girls than boys and decreases with student SES and reading achievement. Beyond these effects, the overall SES composition of the school influences student views independently as being in settings with a concentrated pooling of higher SES students reduces the odds of considering a vocational post-school pathway as the priority after school.

The odds of entering the workforce and not pursuing any further study fall as student SES increases, with some suggestion that they also fall as reading scores increase. However, student work and study plans are not only a product of who students are in terms of individual family SES, but also of who they get to mix with in schools in terms of the overall SES composition and the type of school attended. Beyond these effects, being at a Municipal Selective school seems to increase the odds of considering a job as a first priority after school.

In Santiago, student work and study aspirations, shapers of later opportunities in the labour market and social integration, vary by who students are (gender, SES and academic skills), and the schools they attend. The results in this chapter lend support to the view that social segregation in Santiago influences student work and study plans in a way that increases the odds of social differences in student aspirations, and the gaps in those planning to pursue university study and the professional careers associated with it, representing a risk for social integration and cohesion.

10. SKILLS AND DIS+POSITIONS TOWARDS SOCIAL COHESION

As well as contributing towards unequal levels of learning and achievement in school, social segregation also works to undermine social cohesion through its actions impacting the acquisition of values, skills, and outlooks of citizenship and dispositions towards others. Sandel (2012) makes this point strongly arguing that by preventing social interaction with students from different social backgrounds, segregation across schools affects the development of shared values and the formation of citizens willing to share in a common life and care for the common good. It is consistent with the views of Allport (1979) whose work supported the idea that by keeping groups apart segregation fails to help young people develop the attitudes towards others from different backgrounds that support intergroup relations and social and political integration. From this perspective, lack of contact works to prevent school providing the basic conditions for individuals to form, as much as possible, wider social perceptions and to avoid development of prejudice, discriminating attitudes towards others and group conflict.

This chapter examines the evidence from ISCY-Santiago on the effects of social segregation across the schools in Santiago on the development of citizenship and skills for social cohesion. The main dispositions and skills explored in this chapter relate to sense of belonging, sense of fairness, civic engagement, recognition of other world views and levels of trust in the main institutions of Chile. Does segregation influence the formation of skills and dispositions related to these dimensions? We begin by looking at the aspect of sense of belonging.

Sense of belonging

Sense of belonging is sometimes assessed using measures of trust in others or the extent to which someone has trust in those around them. Table 39 shows the percentage of students supporting the view that generally speaking most people can be trusted.

Table 39 Percentage of students agreeing that most people can be trusted, by type of school

All	*Municipal-Non Selective*	*Private Voucher-Non Selective*	*Municipal-Selective*	*Private Voucher-Selective*	*Private Fee*
30.2	23.1	24.2	31.3	28.8	48.7

The percentage of students in the whole sample agreeing that most people can be trusted is 30.2 per cent. According to the World Values Survey (2010-2014), general trust in Chile is low compared to other countries: in Chile only 12 per cent of the people surveyed agreed that most people can be trusted, compared to 25 per cent of people surveyed in the United States, 51 per cent in Australia, 45 per cent in Germany, 55 per cent in New Zealand and 60 per cent in Sweden. Although other studies report slightly higher levels of general trust in Chile, such as in the studies by Latinobarometro (2015) and PNUD (2016) with values of 15 per cent and 24 per cent respectively, results tend to highlight that Chile shows persistently low levels of trust.

Table 39 shows that when the results of general trust are calculated by type of school, levels of trust vary depending upon which school you attend. The figures show that schools tend to cluster into three groups: (1) less than one quarter of students trust others in Municipal Non Selective schools (23.1 per cent) and Private Voucher Non Selective schools (24.2 per cent), (2) around one third of students in Municipal Selective schools (31.3 per cent) and Private Voucher Selective schools (28.8 per cent), and (3) about one half of students (48.7 per cent) in Private Fee schools. In all, the percentage of students who trust others in Private Fee schools is double the percentage of students that do so in Municipal and Private Voucher Non Selective schools.

Sense of belonging can also be measured by behaviours linked to civic honesty (not cheating on taxes, for example), recognising the importance of civic engagement (e.g. turning up to vote), and civic altruism (e.g. helping those less fortunate than yourself). The results in Table 40 show some patterns similar to those for trust: students at Municipal Non Selective schools show lower levels of civic honesty and civic engagement than students at the other types of schools, while students at Private Fee schools show very high levels (above 80 per cent). The proportion of students who think that civic engagement is important in Private Fee schools is almost three times higher than the proportion in Municipal Non Selective schools. Although there are similar proportions of students in Private Voucher Non Selective, Municipal Selective and Private Voucher Selective schools with a positive disposition towards civic honesty, the proportions vary in the importance given to civic engagement, the lowest being among students at Private Voucher Non Selective schools.

Table 40 Proportion of students with a positive sense of belonging, by type of school

	Municipal-Non Selective	*Private Voucher-Non Selective*	*Municipal-Selective*	*Private Voucher-Selective*	*Private Fee*
Civic Honesty	56.5	65.9	67.5	67.5	81.8
Importance of Civic Engagement	31.3	38.0	56.2	61.7	85.2
Importance of Civic Altruism	41.7	41.0	34.4	27.2	42.3

The largest gaps between types of schools are found in student perceptions of the importance of civic engagement, a crucial component of social cohesion. The results for civic altruism are different: students at Private Voucher Selective schools show the lowest proportion of students with a positive disposition towards civic altruism, while the proportions of students at Municipal Non Selective, Private Voucher Non Selective and Private Fee schools are much the same.

Table 41 shows the results of a multilevel logit model to predict student general trust. The results in Model 1 reveal that, compared to boys, girls have significantly lower odds of trusting others, while higher levels of SES significantly increase the odds, all else equal. The individual effects on the odds of trusting others remain even when school variables are added to models.

School SES also has an effect on the odds of trusting others (Model 2), above and beyond the effects of individual SES, revealing a school contextual effect on trust. Model 3 shows that this effect is no longer significant when type of school is introduced. Even though the odds of students trusting others in Private Fee schools almost doubles the odds of students in all other types of school, it is not significant due to high standard errors in the estimation. These results suggest that the key driver of trust is social background (SES) and that the population is so divided along SES lines across school types that school type is not itself significant.

Table 41 Odds of trusting others (either trusting others or not trusting others) estimated using a multilevel logit model

Parameters	Model 1	Model 2	Model 3	Model 4
Constant	0.40**	0.55**	0.57**	0.51**
Individual Level				
Gender (Ref: male)		0.51**	0.50**	0.50**
Student SES		1.38**	1.22*	1.21*
School Level				
School SES			1.36*	1.04
Type of School (Ref: Municipal Non Selective)				
Private Voucher Non Selective				0.93
Municipal Selective				1.04
Private Voucher Selective				1.02
Private Fee				1.91
N cases	2029	2029	2029	2029

*p < .05. **p < .01.

When it comes to civic honesty, which is a continuous scale based on responses to several items, Models 1 to 3 in Table 42 show that girls score significantly higher than do boys, after controlling for other individual and school variables. That is, they are less likely than boys to want to claim government benefits to which they are not entitled, less likely to avoid paying a fare on public transport, and less likely to cheat on taxes if they had a chance. Model 1 reveals that student SES is positively associated with civic honesty, although this effect disappears when school SES is included. School SES also significantly predicts student civic honesty (Model 2), but not when type of school is introduced.

The variance estimates part of the Null Model in Table 42 shows that eight per cent of the variance in student civic honesty is due to differences between schools. Model 1 shows that student SES and gender explains one quarter of the between-school variation in student civic honesty. School SES explains an additional 15 per cent (Model 2). The addition of type of school increases the explained variance to 54 per cent. Although school type is useful to explaining the between-school variance in civic honesty in Santiago, almost half of the variance in civic honesty is due to characteristics not identified in the study.

Table 42 Multilevel model estimates of civic honesty

Parameters	Null Model	Model 1	Model 2	Model 3
Constant	0.61**	0.59**	0.59**	0.53**
Individual Level				
Gender (Ref: male)		0.05**	0.05**	0.05**
Student SES		0.03**	0.02	0.02
School Level				
School SES			0.05*	0.00
Type of School (Ref: Municipal Non Selective)				
Private Voucher Non Selective				0.06
Municipal Selective				0.06
Private Voucher Selective				0.04
Private Fee				0.14
Explained Variance (%)				
Within-school	[92]	0	0	0
Between-school	[8]	25	40	54
N cases	1990	1990	1990	1990

*p < .05. **p < .01.

Voting in elections and being active in social or political associations denote in some way how much students value civic participation. Models 1 to 3 in Table 43 show that gender is not a significant predictor of student perception of the importance of civic engagement, while student SES significantly explains it, even when school variables are considered. This means that no matter what type of school, students of lower SES score less on civic engagement than students of higher SES.

Model 2 shows that there is a composite effect of student SES at the school level on top of individual characteristics, as a one standard deviation increase in school SES accounts for a 0.32 standard deviation increase in the importance given to civic engagement.

Model 3 reveals that it is not mean school SES per se but type of school that accounts for differences in the importance students give to civic engagement: controlling for all other variables students at Private Fee schools give more importance to civic engagement than students at other types of schools, as do students in Municipal Selective schools.

Table 43 Multilevel model estimates of importance given to civic engagement

Parameters	Null Model	Model 1	Model 2	Model 3
Constant	-0.05	-0.07	-0.03	-0.24**
Individual Level				
Gender (Ref: male)		0.09	0.08	0.08
Student SES		0.20**	0.14**	0.14**
School Level				
School SES			0.32**	0.05
Type of School (Ref: Municipal Non Selective)				
Private Voucher Non Selective				-0.01
Municipal Selective				0.32**
Private Voucher Selective				0.25
Private Fee				0.70**
Explained Variance (%)				
Within-school	[84]	1	1	1
Between-school	[16]	56	83	98
N cases	1974	1974	1974	1974

*p < .05. **p < .01.

The variance analysis estimates in Table 43 reveal a large between-school variation in student support for civic engagement (16 per cent), suggesting that where students go to school matters in terms of the level of the disposition, above and beyond the influence of student background. The results for Model 1 suggest that just over half of the between-school effect is due to student SES, and the results for Model 2 show that school SES increases this by a further 27 percent. In other words, social segregation across schools matters to the levels of positive civic engagement values. When type of school is included in Model 3, practically all the between-school variance in student importance given to civic engagement is explained.

Table 44 shows the model estimation results for student awareness of social inequalities and importance of helping others in need, important elements of a sense of belonging. Model 1 shows that student levels of civic altruism are much higher among girls than boys, and that it increases as student SES increases. In the following models, student SES is no longer significant, while school variables do not seem to contribute to explaining levels of civic altruism.

Table 44 Multilevel model estimates of importance given to civic altruism

Parameters	Null Model	Model 1	Model 2	Model 3
Constant	0.01	-0.18**	-0.18**	-0.19
Individual Level				
Gender (Ref: male)		0.40**	0.39**	0.40**
Student SES		0.06*	0.04	0.04
School Level				
School SES			0.05	0.07
Type of School (Ref: Municipal Non Selective)				
Private Voucher Non Selective				0.04
Municipal Selective				0.02
Private Voucher Selective				-0.26
Private Fee				0.01
Explained Variance (%)				
Within-school	[98]	3	3	3
Between-school	[2]	49	53	75
N cases	1972	1972	1972	1972

*p < .05. **p < .01.

The random part in Table 44 shows that only two per cent of the total variance in student importance given to civic altruism is between schools, suggesting that the school you attend in Santiago does not contribute much to differences in this indicator of social cohesion.

Sense of Fairness

This section presents the results of a scale designed to measure student perceptions of economic equality or fairness in Chile. The literature suggests that perceptions of economic inequality are associated with social conflict and disengagement beyond the effect of structural inequalities in a society. Table 45 shows the proportion of students agreeing that the Chilean economic system is fair. Once again, the proportion of students at Private Fee schools that perceive that the economic system is fair is considerably higher than the proportion of students in other types of schools. However, unlike patterns on most other measures presented in this study the second and third highest proportion of students agreeing that the economic system is fair are found in Municipal Non Selective and Private Voucher Non Selective schools respectively, and the lowest proportion in Private Voucher Selective schools.

Table 45 Proportion of students agreeing that the economic system is fair by type of school

	Municipal-Non Selective	*Private Voucher-Non Selective*	*Municipal-Selective*	*Private Voucher-Selective*	*Private Fee*
Economic fairness	55.6	46.0	40.7	35.4	69.4

To help explore this further, Figure 21 presents the percentages of students who agree or strongly agree with some statements related to the perception of economic fairness in Chile. First thing to note is that the overall view of secondary students in Santiago about economic fairness in Chile is quite negative: 83 per cent of students in the sample agree or strongly agree that big corporations make too much profit, while 85 per cent believe the economic system generally favours the wealthy. However, there are some differences by type of school. In most questions students at Municipal Non Selective schools show more positive attitudes towards economic fairness than students at other types of schools except for students at Private Fee schools, while students at Municipal Selective schools show the most critical views, followed either by students at Private Voucher Selective or Non Selective schools. For example, 91 per cent of students at Municipal Selective schools agree that big corporations make too much profit in Chile, followed by 85 per cent of students in Private Voucher Non Selective schools, 81 per cent in Private Voucher Selective schools, 79 per cent in Municipal Non Selective schools, and 76 per cent in Private Fee schools. The percentage of students at Private Fee schools that believe that rich people pay the right amount of taxes is 3.6 times higher than the percentage for students at Private Voucher Selective schools, and two times higher than that for students at Municipal Non Selective schools. One possible explanation is that the families using Private Voucher schools and selective schools, much more than those using Municipal Non Selective schools, are aspirational, unable to afford the fees to send their students to Private Fee schools, and yet not happy with the option of their local non-selective schools. They are more acutely aware of the economic gaps in Chilean society and pursue the advantages their children may gain by attending selective-entry or Private Voucher schools.

Figure 21 Student that agree or strongly agree with statements of economic fairness, by type of school (%)

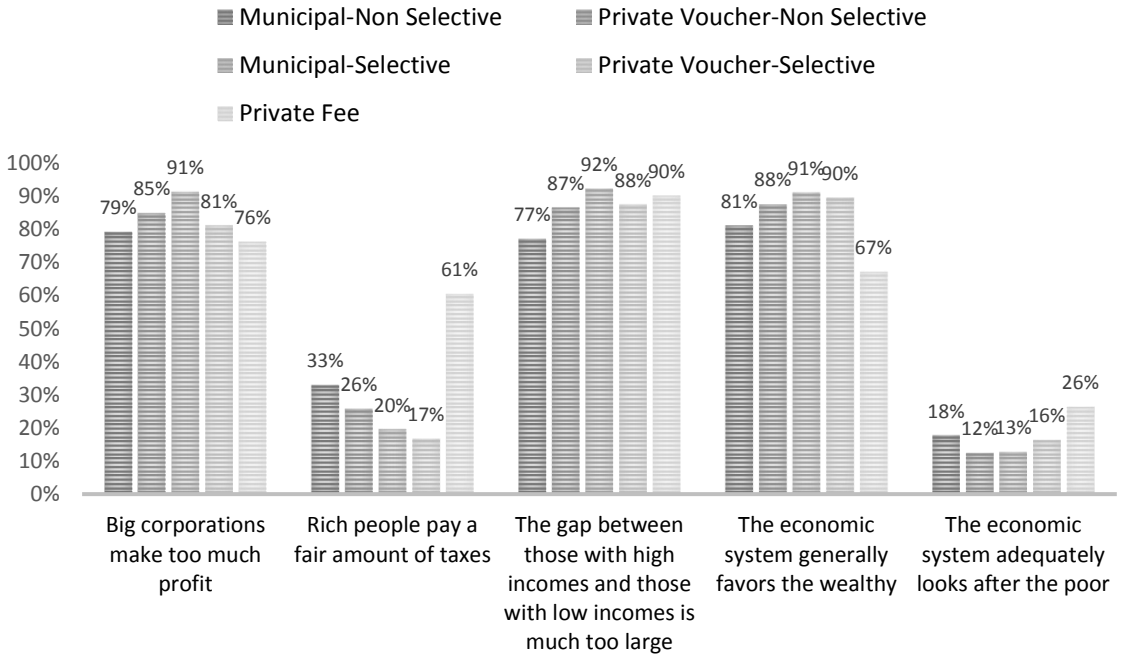


Table 46 shows the results of the multilevel model including several factors to help explain differences in student perceptions of economic fairness. The results reveal that the only significant predictor of perceptions of economic fairness are type of school in Model 3. It is noticeable that student SES and school SES do not influence the perception, while the effect of the context of the type of school does matter. The results suggest that students in selective schools and Private Voucher schools are significantly less likely to view Chile as having economic fairness than are students in Municipal Non Selective schools, all else equal.

The amount of variance in student perceptions of economic fairness estimated between schools is six per cent. Student SES and gender do not explain any of the between-school differences (Model 1), while school SES when added (Model 2), while not a significant predictor of student perceptions of economic fairness, helps explain nine per cent of the between-school variance. However, type of school adds a further 69 cent to explaining the total between-school variance, revealing that type of school is important to understanding the differences in student perceptions of economic fairness.

Table 46 Multilevel model estimates of economic fairness

Parameters	Null Model	Model 1	Model 2	Model 3
Constant	0.04	0.06	0.07	0.20
Individual Level				
Gender (Ref: male)		-0.04	-0.04	-0.03
Student SES		-0.02	-0.05	-0.05
School Level				
School SES			0.14	0.05
Type of School (Ref: Municipal Non Selective)				
Private Voucher Non Selective				-0.25*
Municipal Selective				-0.39*
Private Voucher Selective				-0.43*
Private Fee				0.21
Explained Variance (%)				
Within-school	[94]	0	0	0
Between-school	[6]	0	9	78
N cases	1852	1852	1852	1852

*p < .05. **p < .01.

Civic participation

Willingness to join political and civic associations, and interest in political and social issues, are the types of behaviours and dispositions which are important indicators of student levels of civic engagement. The literature discussed in the second and fourth chapters indicates that social participation is important for social cohesion. Table 47 presents the proportions of students with above average scores on each scale of social participation, by type of school.

Large differences across school types are apparent in reported interest in political issues and institutional engagement. About two-thirds of students in Private Fee schools record above average levels of interest in political issues, compared to less than one-third of students in Municipal Non Selective schools. Similarly, students at Private Fee schools are much more likely to be members of community organisations such as churches or political parties than are students at other types of schools. They are also more likely to record higher levels of civic engagement, though the gaps on this measure are much smaller.

Table 47 Proportion of students with positive views on civic participation, by type of school

	Municipal-Non Selective	*Private Voucher-Non Selective*	*Municipal-Selective*	*Private Voucher-Selective*	*Private Fee*
Interest in Political Issues	28.3	41.6	52.4	64.6	67.6
Interest in Social Issues	48.0	52.4	48.6	59.3	49.0
Civic Engagement	47.9	52.8	55.5	61.4	63.8
Institutional Membership	49.5	47.5	45.3	47.0	72.2

Table 48 shows the results of the multilevel model conducted to explore the association between school segregation and student interest in political issues. Across all models, there is no evidence of a gender difference in student levels of interest in political issues, and a sustained positive, strong and significant effect of student SES. Independent of the type of school and mean SES of the school, students from higher SES families record a significantly higher interest in political issues than do students from lower SES families.

Table 48 Multilevel model estimates of interest in political issues

Parameters	**Null Model**	**Model 1**	**Model 2**	**Model 3**
Constant	-0.05	-0.06	-0.04	-0.32**
Individual Level				
Gender (Ref: male)		0.05	0.05	0.05
Student SES		0.21**	0.15**	0.15**
School Level				
School SES			0.14**	0.01
Type of School (Ref: Municipal Non Selective)				
Private Voucher Non Selective				0.20*
Municipal Selective				0.38**
Private Voucher Selective				0.52**
Private Fee				0.55**
Explained Variance (%)				
Within-school	[90]	1	1	1
Between-school	[10]	70	83	93
N cases	1991	1991	1991	1991

*p < .05. **p < .01.

Model 2 reveals that there is a significant school SES effect above and beyond the influence of student SES, indicating that the school context is relevant in explaining student interest in political issues beyond student characteristics. However, this effect disappears when type of school is introduced in Model 3, where students at all other types of schools show significantly higher interest in political issues than do students at

Municipal Non Selective schools. This reveals that the school effect is associated with type of school which channels the effect of school SES.

As depicted by the results for the Null Model in Table 48, 10 per cent of the total variance in student interest in political issues is found between schools, revealing considerable differences and possible effects of social segregation. Much of the between-school effect is due to the effects of social segregation, as shown by the strong effect of student SES which explains 70 per cent of the between-school variance in student interest in political issues. The effect of school SES adds an additional 13 per cent, and type of school adds a further 10 percentage points (Model 3), meaning that there is very little between-school variance left unexplained. The differences in student interest in political issues between schools are almost entirely explained by the segregation of students across schools along socioeconomic lines, and the school context that this segregation creates by type of school.

There is virtually no between-school difference in the level of interest in social issues, as is evident from the variance analysis in Table 49. For that reason, the results are presented for Model 1 only. The results show that gender and student SES are both influential student-level factors. Similarly, being of higher SES is positively associated with interest in social issues.

Table 49 Multilevel model estimates of interest in social issues

Parameters	**Null Model**	**Model 1**
Constant	0.00	-0.13**
Individual Level		
Gender (Ref: male)		0.30**
Student SES		0.08**
School Level		
School SES		
Type of School (Ref: Municipal Non Selective)		
Private Voucher Non Selective		
Municipal Selective		
Private Voucher Selective		
Private Fee		
Explained Variance (%)		
Within-school	[99]	2
Between-school	[1]	82
N cases	1990	1990

*p < .05. **p < .01.

Table 50 presents model estimates for civic engagement. Again the between-school variation is so small that it can be ignored and the multi-level modelling used for consistency with other results in this chapter and presented for the Null model and Model 1 only.

The results in Table 50 show that gender and student SES are significant predictors of civic engagement, with engagement understood as the likelihood of posting views about a political issue on a website, attending a rally or demonstration, joining an action group and joining a student organization.

Table 50 Multilevel model estimates of civic engagement

Parameters	Null Model	Model 1
Constant	-0.01	-0.10*
Individual Level		
Gender (Ref: male)		0.21**
Student SES		0.14**
School Level		
School SES		
Type of School (Ref: Municipal Non Selective)		
Private Voucher Non Selective		
Municipal Selective		
Private Voucher Selective		
Private Fee		
Explained Variance (%)		
Within-school	[98]	2
Between-school	[2]	28
N cases	1998	1998

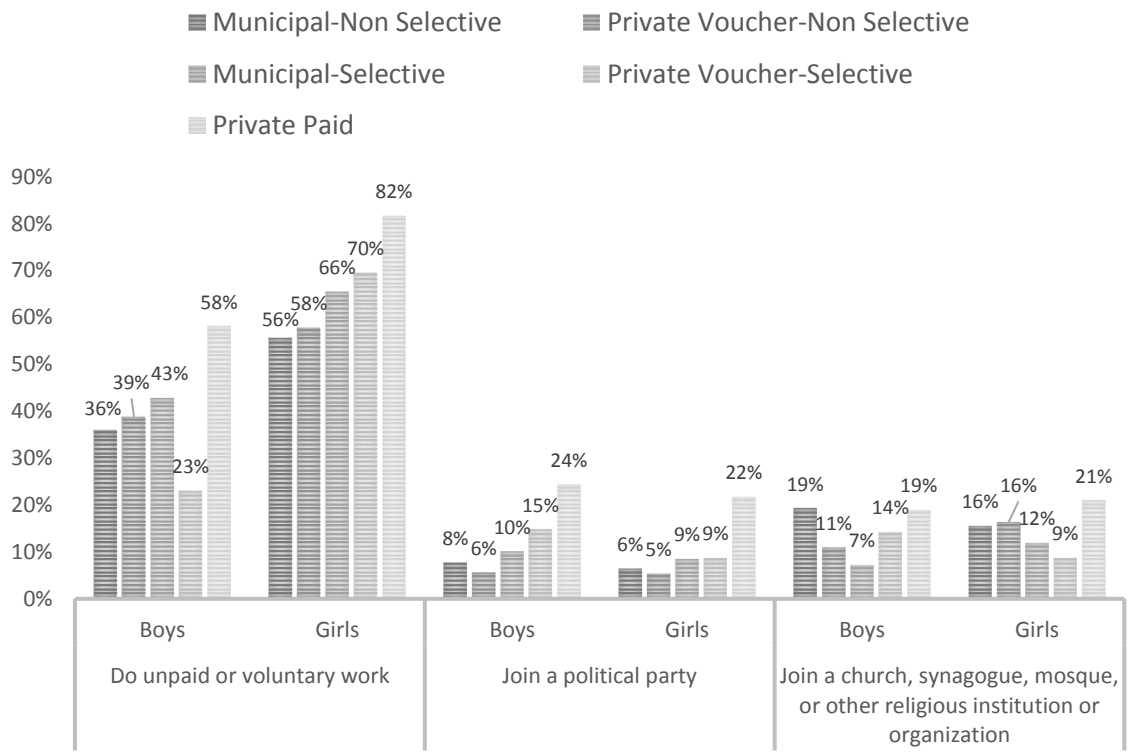
*p < .05. **p < .01.

The final scale of civic participation is linked to student willingness to participate in a more traditional way by becoming members of political organisations or community groups such as churches. It also includes engagement in unpaid or voluntary work which is mainly organised in Chile through organisations such as churches.

Figure 22 shows the percentages of students who are likely or most likely to become members of political and community organisations and do voluntary and unpaid work. The results are presented by gender and type of school. First, it is noticeable that, overall, a much higher percentage of students are willing to do unpaid or voluntary work than to join a political party or a religious institution, and that it is precisely in this activity where

there are larger differences between girls and boys. It is also worth noting that boys are more likely to join a political party than girls.

Figure 22 Students that are likely or most likely to engage in traditional civic activities, by type of school and gender (%)



A further point to note is that it is quite evident that students in Private Fee schools, both males and females, are more likely than students in any other school to be engaged in voluntary or unpaid work and to join a political party.

The results of the multilevel model predicting institutional membership are presented in Table 51. The results reveal that girls are more likely than are boys to become members of the church or join political parties, and the results hold even when school context variables are added. Model 1 results also show that as a predictor student SES is significant and positive meaning that the higher the SES of the student, the higher the level of institutional membership.

School SES is also positively related to institutional or organisational membership, revealing a school contextual effect beyond student characteristics (Model 2). However, the addition of type of school in Model 3 shows that the effects of student and school SES

are largely due to the disproportionately higher likelihood of students at Private Fee schools joining institutions and participating in voluntary and unpaid work.

Table 51 Multilevel model estimates of institutional membership

Parameters	Null Model	Model 1	Model 2	Model 3
Constant	0.02	-0.10	-0.08	-0.21*
Individual Level				
Gender (Ref: male)		0.25**	0.25**	0.25**
Student SES		0.11**	0.07*	0.06
School Level				
School SES			0.18**	-0.04
Type of School (Ref: Municipal Non Selective)				
Private Voucher Non Selective				-0.02
Municipal Selective				0.00
Private Voucher Selective				0.01
Private Fee				0.63**
Explained Variance (%)				
Within-school	[94]	1	2	2
Between-school	[6]	38	56	96
N cases	2016	2016	2016	2016

*p < .05. **p < .01.

The variance estimates in Table 51 show a modest between-school variance in institutional membership of six per cent. Around half of this variation between schools is explained by gender, student SES and by mean school SES. The comparatively high levels of engagement found among students at Private Fee schools contributes to the additional 40 per cent of the between-school variance explained after adding in type of school. By itself, attending a Private Fee school explains 91 per cent of the effect associated with type of school, highlighting the extent to which this group of schools fosters traditional civic virtues such as doing unpaid and voluntary work and being actively engaged in the work of political parties.

Recognition of other world views

School segregation can affect the views young people on the importance of mixing with others, crucial to the goal of social cohesion in an increasingly diverse world. This study explores the effect on two dimensions: (1) views on the source of poverty as being something attributable to the poor themselves, reflected in the belief that poor people are poor because they are lazy and/or they are not very smart, and (2) views on the need for

school selectiveness, because students from different gender, religious and socioeconomic backgrounds should study in separate schools.

The top panel in Table 52 shows the proportions of students agreeing or strongly agreeing that laziness and lack of intellect are characteristics of the poor in Chile. The second panel in Table 52 reports the proportions agreeing or strongly agreeing that students from different backgrounds should study in separate schools. The results are presented by type of school.

Table 52 Proportion of students agreeing or strongly agreeing that poor people are lazy and poor people are not very smart, and agreeing that students from different backgrounds should study in separate schools, by type of school

	Municipal -Non Selective	*Private Voucher-Non Selective*	*Municipal-Selective*	*Private Voucher-Selective*	*Private Fee*
Views on poverty					
Poor people are lazy	14.0	15.9	16.0	12.7	21.2
Poor people are not very smart	20.3	14.9	13.6	16.5	25.5
Views on school integration					
Catholic and non-Catholic students should study in separate schools	15.0	13.4	11.8	9.8	24.1
Boys and girls should study in separate schools	4.2	1.3	6.7	0.0	4.6
Rich and poor students should study in separate schools	15.4	12.0	7.9	8.5	34.9

In general, students in every type of school tend to disagree with the negative views on poor people and the need for keeping different types of students apart, with only a minority agreeing that poor people are lazy and that poor people are not very smart, and comparatively small numbers agreeing that students from different backgrounds should study in separate schools. However, this does not mean that there are not important school differences. Students at Private Fee schools agree with the views more frequently than students in other types of schools on all statements except for the view that boys and girls should study in separate schools. As an example, around 35 per cent of students in Private Fee schools believe that rich and poor students should study in separate schools, a level more than double that for students in any other school type. The lowest proportions of students with negative views on school integration and the effects of poverty are found

within Private Voucher Selective schools and in some cases students at Municipal Selective schools. Students at Private Voucher Non Selective schools have more empathic views about poverty and school integration than students at Municipal Non Selective schools.

Table 53 shows the between-school variance in the five recognition of other world views statements considered in this study, fitting a multilevel binary linear model in each case. The results show that the variance between-schools in all statements is quite low, except for student opinions about rich and poor students studying in the same schools, where the variance between schools reaches 6 per cent. Consequently, the results in the following section consist of estimations fitting binary logistic regressions to explain the four first recognition of other world views statements that show low between-school variance in Table 53, and one multilevel logit regression to analyse student views about the rich and the poor studying in separate schools.

Table 53 Between-school variance in recognition of other world views statements

	Between-School Variance (%)
Views on poverty	
Poor people are lazy	1
Poor people are not very smart	1
Views on school integration	
Catholic and non-Catholic students should study in separate schools	3
Boys and girls should study in separate schools	2
Rich and poor students should study in separate schools	6

Table 54 shows the result of models using binary logistic regression to explain student views on the poor and on school integration. Note that the outcome variables represent the odds of thinking that poor people are lazy, poor people are not very smart, and that students should study in separate schools based on religion and gender. The results show that girls are less likely to believe that poor people are lazy, that poor people are not very smart and that boys and girls should study in separate schools compared to boys. The estimates suggest that there is no effect of student SES. The strongest effect on student views about poverty and school integration is found in type of school, where students in Private Fee schools significantly and more frequently compared to students in all other types of schools, even when controlling for students and school SES, believe that poor

people are not very smart, and that Catholic and non-Catholic students and boys and girls should study in separate schools.

Table 54 Odds of agreeing with views on poor people and separation of students by school estimated using a logit model

Parameters	Poor people are lazy	Poor people are not very smart	Catholic students should study in separate schools to other students	Boys should study in separate schools to girls
Constant	0.22**	0.23**	0.16**	0.02**
Individual Level				
Gender (Ref: male)	0.62**	0.71**	0.88	0.60*
Student SES	1.01	0.93	1.01	0.96
School Level				
School SES	1.09	0.78	0.81	0.24**
Type of School (Ref: Municipal Non Selective)				
Private Voucher Non Selective	1.07	0.78	0.95	0.49
Municipal Selective	0.97	0.78	0.90	6.20**
Private Voucher Selective	0.74	1.26	0.85	-
Private Fee	1.31	2.51*	2.73*	21.0**
N cases	*1979*	*1979*	*2010*	*2013*

*p < .05. **p < .01.

Table 55 shows the results of the multilevel logit model to explain the likelihood of students agreeing that rich and poor students should study in separate schools instead of in the same schools. The results are presented as odds ratios. All models show again that girls are less likely than boys to agree that students from different groups should study in separate schools. Student SES does not significantly influence this perception. The addition of school SES in Model 2 shows that studying at schools with higher mean SES increases the odds of believing that rich and poor students should study in separate schools. However, as depicted in Model 3, this effect is captured by the significantly higher likelihood of students in Private Fee schools compared to students in all other types of schools believing that the rich and the poor should study in separate schools (odds of 4.6 to 1.0), revealing a potential contextual effect of elite schools on student views about diversity and pluralism.

Table 55 Odds of agreeing that rich students and poor students should study in separate schools, estimated using a multi-level logit model[1]

Parameters	Null Model	Model 1	Model 2	Model 3
Constant	0.17**	0.21**	0.22**	0.15**
Individual Level				
Gender (Ref: male)		0.64**	0.64**	0.64**
Student SES		1.15	1.02	1.02
School Level				
School SES			1.53*	0.85
Type of School (Ref: All other schools)				
Private Fee				4.59**
Explained Variance (%)				
Within-school	[94]	0	0	0
Between-school	[6]	16	38	83
N cases	2009	2009	2009	2009

*p < .05. **p < .01.

1 Variance analysis estimates were derived using an OLS multilevel regression procedure.

The variance analysis shows that six per cent of the total variance in student opinion on rich and poor students is between schools. Models 1 and 2 show that the unequal social distribution of students across schools and the contextual effects it produces at the school level explain 38 per cent of the variance. Model 3 reveals that the driver of the differences in student views about the value of social segregation is type of school, specifically studying at a Private Fee school. Together with the other variables in Model 3, studying in a Private Fee school explains 83 per cent of the total between-school variance. An interpretation of this finding is that while there is considerable variance in student likelihood to believe that the rich and the poor should study in separate schools in Santiago, most of it can be explained by the variables included in Model 3 and linked to social segregation. Studying at a Private Fee school significantly increases the odds of thinking that the rich and the poor should study separately and contributes significantly to explaining between-school differences.

Institutional Trust

This section presents the results of two scales designed to measure student levels of trust in the key institutions of Chile: political and private institutions. Table 56 shows proportions of students who report trust in institutions, by type of school. The proportions of students in Private Fee schools who have trust in Chile's political and private institutions is much larger than the proportions of students in other types of schools. The

gaps are large, by 30 percentage points or more between students in some types of schools. While the proportions of students who trust political institutions are in general seemingly low, below 50 per cent for students in many types of schools, and as low as 35 per cent for trust in private institutions among students in Municipal Selective schools, students in Private Fee schools record quite high levels—over 70 per cent for trust in political institutions and 78 per cent for trust in private institutions. It is clear that students in Private Fee schools, possibly reflecting the fact that their parents and families hold senior positions in many of these institutions, or benefit from their influence, have high levels of trust in these political and private establishments.

Table 56 Proportion of students who trust political and private institutions

	Municipal-Non Selective	*Private Voucher-Non Selective*	*Municipal-Selective*	*Private Voucher-Selective*	*Private Fee*
Trust in political institutions	43.5	44.1	44.6	50.6	73.9
Trust in private institutions	36.2	37.0	34.9	45.8	78.8

The regression estimates in all models of Table 57 show that there is no difference between girls and boys in levels of trust in political institutions. There are student SES differences, though. Higher SES students tend to show higher levels of trust than lower SES students, even after controlling for school SES and type of school (Models 2 and 3).

Model 2 reveals that mean SES of the school has an effect on student levels of trust in political institutions above the effect of individual SES, confirming that political trust may be influenced by school context beyond individual characteristics. However, and as it has been the case in previous analysis, the effect of school SES disappears once type of school is introduced, as political trust is disproportionately higher among students in Private Fee schools. It is worth noting that once student SES is accounted for, students at Municipal Non Selective schools actually show higher levels of trust than students at Private Voucher Non Selective and Municipal and Private Voucher Selective schools, although these differences are not significant.

Table 57 Multilevel model estimates of student trust in political institutions

Parameters	Null Model	Model 1	Model 2	Model 3
Constant	0.03	0.04	0.06	-0.02
Individual Level				
Gender (Ref: male)		0.00	0.00	0.00
Student SES		0.12**	0.07*	0.07*
School Level				
School SES			0.26**	0.06
Type of School (Ref: Municipal Non Selective)				
Private Voucher Non Selective				-0.06
Municipal Selective				-0.13
Private Voucher Selective				-0.11
Private Fee				0.52*
Explained Variance (%)				
Within-school	[89]	0	0	0
Between-school	[11]	39	64	91
N cases	2047	2047	2047	2047

*p < .05. **p < .01.

The findings from the variance analysis in Table 57 support the view that average student levels of trust in political institutions vary between schools (11 per cent between-school differences), and that almost 40 per cent of the difference is explained by the SES of students.

Model 2 suggests that the differences in school SES in Santiago created by social segregation has an effect beyond student SES, and contributes to explaining an additional 25 points of the total between-school variance in student levels of trust in political institutions. However, the concentration of elite students in Private Fee schools is key to explaining the between-school variance, adding a further 27 points to the explained variance (Model 3). While student SES and mean school SES are important to explaining between-school variance in student trust in political institutions, the highly rarefied environments of elite Private Fee schools promote the formation of trust among students.

Trust in private institutions (see Table 58) is similar as shown in Table 57—it is positively associated with student SES and school SES, while the effect of school SES disappears in Model 3 due to the high levels of trust in private institutions of students at Private Fee schools. It is worth noting that the effect sizes are slightly stronger than in the case of trust in political institutions.

Table 58 Multilevel model estimates of student trust in private institutions

Parameters	Null Model	Model 1	Model 2	Model 3
Constant	0.01	0.04	0.07	-0.04
Individual Level				
Gender (Ref: male)		-0.03	-0.04	-0.03
Student SES		0.11**	0.08*	0.08*
School Level				
School SES			0.33**	0.14
Type of School (Ref: Municipal Non Selective)				
Private Voucher Non Selective				0.01
Municipal Selective				-0.11
Private Voucher Selective				-0.16
Private Fee				0.57*
Explained Variance (%)				
Within-school	[84]	0	0	0
Between-school	[16]	32	65	87
N cases	2049	2049	2049	2049

*p < .05. **p < .01.

The variance analysis in Table 58 shows that there is a higher between-school variance in student levels of trust in private institutions than in political institutions, as 16 per cent of the total variance in trust in private institutions can be attributed to differences between schools. Model 1 suggests that 32 per cent of the total between-school variance is explained by student SES, while the addition of school SES lifts the explained between-school variance to 65 per cent. When type of school is added to the model (Model 3), the results confirm that students at Private Fee schools have significantly higher levels of trust in private institutions than students at Municipal Non Selective Schools. By introducing type of school into the model, the explained between-school variance in student levels of trust in private institutions reaches 87 per cent, meaning there is little left to explain. Type of school and social composition of schools are sizeable independent influences on trust levels of students.

Summary

The findings in the present chapter support the view that social segregation across schools has an impact on the acquisition of values, skills and dispositions that are necessary for social cohesion, explored through measures of sense of belonging, sense of fairness, civic

engagement, recognition of other world views and levels of trust in the main institutions of Chile.

In terms of sense of belonging, results show that social segregation is associated with different levels of trust in others, through effects of student SES, school SES and Private Fee schools. Segregation also explains some of the differences in student levels of civic honesty between schools, like claiming government benefits to which they are not entitled, avoiding paying a fare on public transport or cheating on taxes if they have a chance. Segregation explains most of the large variation in student support for civic engagement between schools, through the effects of student SES, school SES and type of school, indicating that social segregation across schools matters to the development of positive civic engagement values. In all, segregation affects students' sense of belonging as a measure of student connection towards others and their community, affecting their willingness to contribute to and participate in the community.

The findings reveal some evidence that segregation is associated with different student perceptions on how fair the economic system in Chile is. Although the perception of economic fairness is in general quite negative, segregation has meant that students at aspirational Municipal and Private Voucher schools have significantly more negative view than students at Private Fee and Municipal Non Selective schools, explaining a large proportion of the variance between schools. This has a potential effect on social cohesion, as research suggests that perceptions of economic fairness can have a strong effect on levels of political support and democratic commitment, beyond individual socioeconomic characteristics (Jost & Major, 2001; Kluegel, Mason, & Wegener, 1995; Kumlin, 2002).

The analysis of the effects of segregation on civic engagement shows strong influences on student interest in political issues and willingness to become members of political organisations or community groups such as churches. Increases in student SES and school SES and going to a Private Fee school significantly increase scores in the two scales associated with these measures, revealing a potential influence of social segregation on civic engagement, a fundamental component of social cohesion.

However, the analysis shows that although students in Private Fee schools are engaged and motivated to participate in civic organizations, they are less prepared to recognise the circumstances and outlooks of others, as they are significantly more likely to believe that

poor people are poor because they are lazy or not very smart, and that students from different social backgrounds should study in separate schools, especially rich and poor students.

Finally, the different school contexts created by social segregation in Santiago have resulted in rarefied environments in Private Fee schools that promote the formation of high levels of trust towards political and private institutions in Chile, above and beyond individual and school SES, compared to much lower levels of institutional trust among students in all other types of schools. Schools that concentrate low SES students promote the formation of distrust towards institutions, an element that can potentially erode institutional legitimation and social cohesion.

In general terms, social segregation in Santiago secondary schools contributes to differences in how students view the world and in their dispositions towards contributing to and sharing in a common life.

11. DISCUSSION

What does it mean for a society to have a socially divided school system, one where disadvantaged students are concentrated in impoverished Municipal schools, where low income aspirational families transfer to Private Voucher Non Selective schools, where aspirational middle class families enrol their students in selective schools, and where elite enclaves are formed in Private Fee schools, separated from the rest of the system?

While the potential range of consequences may be extensive, beyond the focus of this work, the current study provides new and compelling evidence to suggest that among other things it puts social cohesion at risk. Using new data gathered in a representative sample of 10th grade students and schools in Santiago, the results show that social divisions in schools in part sponsored by an elite private school system that operates outside of public funding in conjunction with a market-based voucher system in place for over 40 years, work to undermine social cohesion.

They do this by (1) creating unequal school learning environments that affect student experiences at school, attitudes towards learning, achievement and outcomes, ultimately shaping their potential levels of inclusion or exclusion economically, politically and socially in society, and (2) by limiting the opportunities for contact with students from different backgrounds which in turn influences the development of the types of shared views and values needed to help bind citizens together.

Each of these mechanisms influences the social conditions that shape social cohesion in a society. A segregated school system that affects student performance and future opportunities helps to reproduce inequalities and stratification which in turn undermine social cohesion. Similarly, socialization for students in segregated settings characterised by a lack of diversity and opportunity for interaction with different others also has the potential to reduce opportunity for students to build competencies for social engagement and citizenship, such as mutual understanding, mutual respect, appreciation of diversity and tolerance.

Do the results of the study suggest that the organisation of schooling in Santiago works this way?

Levels of social segregation across the schools of Santiago

The data gathered through ISCY-Santiago confirm that there is a highly segregated secondary school system along socioeconomic status lines. This finding is not a new one. Others have reported that the Chilean school system is one of the most socially segregated globally. However, others have tended to focus on the impact of the market-based reforms, such as the role of vouchers, in helping create a divided school system. While that is also recognised in this study, the effects of the long-established private-fee school sector has been less well understood and the results of this study suggest that the creation long ago of a separate system of schools to serve the elite in Santiago, which continued unabated during the market reform period, is a major driver of social division.

In terms of the market reform-led voucher system, privatization overlaid with academic selection, has promoted a system divided by school ownership and student social and academic composition. While Municipal and Private Voucher Selective schools tend to specialise in serving aspiring middle-class families, it is not exclusively in SES terms because students are also selected on the basis of academic talent, and this is a commodity or trait that while correlated with SES is not exclusive to it, because there are also the talented and aspiring poor. Selective schools, both municipal and voucher, contribute to overall segregation along both academic and social lines.

A direct consequence of such a segregated secondary school system is the lack of opportunity it provides for students to interact with other students of different backgrounds and talents, creating learning environments where students construct their sense of self and their social attitudes among those from the same background.

The levels of student separation creates a system in which each type of school tends to serve a particular class of families, where children learn the habits, manners and social codes of their own social milieu unaffected by contact with students of other backgrounds. In addition to promises (not always met) of greater academic quality, Private Voucher Non Selective schools have been especially effective in providing the alternative of a protected social environment for families that do not wish their children to be socializing with children from the lowest SES backgrounds at Municipal schools. In a context of school choice, the migration of aspirant families from Municipal schools to Private Voucher schools is related to the lure of potential academic benefits for their children as well as the promise of not needing to mix with students from the low SES families who

pool in Municipal Non Selective schools. The Municipal Non Selective schools represent the default choice of low SES families, and the schools are avoided by aspirational families. The processes of choice, sponsored by the vouchers, constitute an effective vehicle for aspirational families to pursue status and class. Schools are symbols of cultural and economic status, tools for social positioning and avoiding diversity and its risks.

Although the data in this study regarding students at selective schools are fairly limited, the results show that given their academic exclusiveness and the link between student SES and academic performance, they contribute to social segregation in the secondary school system of Santiago. There are only a few Municipal Selective schools in Santiago, and they are an attractive alternative for average income families, and even for a few high income families, who prioritise academic excellence. The average SES composition of the student population is higher in Private Voucher Selective schools than it is in Municipal Selective schools, partly because Private Voucher schools can charge fees to families in addition to the filtering through academic selection. But the average SES in both types of schools is higher than in Municipal Non Selective schools and in Private Voucher Non Selective schools. The existence of selective schools adds to the levels of academic and social segregation across the system.

Undoubtedly, the most protected and the most segregated school environments, both academically and socially in Santiago, are found in Private Fee schools. In these schools, members of the elite generally can be confident that their children will access the level of educational resources that their fees help buy, which is not left to vouchers or public funding. They can also rest assured that their children will be socialised in environments where members of other social classes are absent because they cannot afford the fees or do not want to pay them. This helps create the rarefied environment in which their children mix with others like themselves and remain exposed to the values, manners and tastes that they live by and which help lead to the transmission of status, power and privilege. It is not surprising to observe that students at Private Fee schools are significantly less likely to support views in favour of school integration (especially between the rich and the poor) than students at all other school types (except ironically students in Municipal Non Selective schools), revealing that the elite contexts at the Private Fee schools do not succeed in promoting views about the virtues of diversity and pluralism. Furthermore, Private Fee schools by virtue of being outside the publicly funded

system and the conditions this might apply to the way they operate can shield families and children from the policies and reforms imposed by central government or other agents external to the school, which will apply only to the other types of schools. It may be that Private Fee schools are not only effective in transforming economic wealth into academic advantage by employing the best resources, facilities and qualified teachers, but also in conveying the message of superiority and advantage among students, which in a system of choice can be internalised as merit. In as much as these schools are mostly inhabited by children of successful lawyers, company owners, political leaders and other prosperous members of the Santiago elite, students construct their sense of worth and their social values and attitudes surrounded by a message that society works for them and enables them to be successful. They can have trust in the institutions of Chile, because those institutions work for them and their families are key members, owners or managers of them.

Impact on learning environment and attitudes towards school and learning

The consequences of the levels of social segregation across the schools in Santiago are many. One is the effect it has on the learning environments created in schools which have flow-on effects in relation to attitudes towards school and learning, achievement, school completion, future plans and careers.

One of the things this study shows is that school segregation generates differences in quality of school life and quality of learning opportunities, reflected in the views of students on their school experiences and their dispositions towards school and learning. Positive experiences of school and school engagement are important for promoting academic success and for developing confident, motivated individuals.

These elements vary by type of school thanks to segregation. Students in Municipal Non Selective schools, who are mainly from low SES families, are more exposed to classrooms with higher levels of disruptive student behaviour and, when compared to students at other types of schools, are less connected and attached to school and its mission.

Students in other types of schools (the higher SES schools) do not have this as features of their daily life at school to the same extent. Students in the selective schools and in the Private Fee schools report that those around them tend to be well behaved, treat teachers

with respect and get along well with other students. Classrooms in the selective and Private Fee schools are not unruly sites of contest, they are places where there is a more active pursuit of common goals in environments more conducive to learning.

A 1.0 standard deviation increase in school SES is associated with almost 0.5 standard deviation increase in how well students report getting on with each other, treating teachers with respect, and behaving in class, suggesting a strong effect of segregation on the behavioural and learning climates of schools.

As a result, there is considerable between-school variation in some student dispositions towards school and learning: connectedness to school, behavioural engagement and value of learning. In all these dispositions, except for value of learning, student SES is a positive predictor and, given the levels of social segregation in the system, a powerful variable for explaining the levels of between-school variance. Schools in Santiago do not reduce student disparity in these dispositions brought about by family background, and this disparity remains a source of educational inequality potentially impacting future study and post-school opportunities.

The different school contexts created by segregation, though, have an effect beyond student SES, on student behavioural engagement and value of learning. The learning contexts created by the different concentrations of students as measured by school SES contribute independently and significantly to the development of behavioural engagement and value of learning. In schools serving the poor, mainly Municipal schools, the pooling of disadvantage leads to higher levels of student disengagement, resulting in higher levels of disruptive and negative conduct such as skipping classes, playing truant, mucking up, behaviours often linked to lower academic achievement and increased likelihood of dropping out of school.

Value of learning is related to student understanding about the place of education in their lives, and that what they are doing in school has value and meaning to them in terms of immediate and future goals. The results on value of learning show that girls report consistently higher levels of value of learning than boys, which reflects a common pattern across OECD countries that girls are more likely to want to complete school and value further study. This has been linked to the declining opportunities for girls, particularly

teenage girls, in the labour market (OECD, 2000). Girls tend to invest more in the worth of school or what it can achieve for them by virtue of poorer alternatives.

School SES is negatively associated with scores on the value of learning scale. This suggests that students in lower SES schools tend to value learning highly. The finding might reflect students in high SES schools tending to trust that their position of advantage in society does not mitigate against future success, and although they understand that education is important, it does not represent the only mechanism to achieve their goals. But more plausibly, it may reflect the aspirational value given to education in the Santiago society, where education is seen as the most important means of social mobility, and the internalised assumption in the lower status schools that life success depends on educational attainment, individual effort and merit. Students in lower SES schools in Santiago may hold on to this conception of education even if the reality of outcomes is different.

Students in Private Fee schools record significantly stronger views on the quality of school as a learning environment. They also record stronger and more positive dispositions towards school and learning than students at Municipal Non Selective schools on the following scales: connectedness to school, relationship with teachers, school efficacy and value of learning. The results suggest that studying at a Private Fee school reveals significantly higher levels of emotional and cognitive engagement among students. This evidence suggests that the exclusive environments of Private Fee schools create learning contexts that generate positive attitudes towards learning and school, independently of individual and school SES.

The results suggest that students in Private Fee schools highly value the role of school for achieving their goals in life. In this sense, Private Fee schools have been quite successful in conveying the message that despite their positions of privilege, students need to work hard and value school activities for future success. While students in these schools may know they have the highest likelihood of performing well in the PSU and accessing a prestigious place at a respected university, they still need to work hard because taking school work seriously, especially the last two years of secondary education, is fundamental to success in the independently operated PSU (where success is not guaranteed) and to their future career goals.

Although students at Private Voucher Selective schools rank more highly on several outcomes of schooling than students at Municipal and Private Voucher Non Selective schools, and even than students at Municipal Selective schools, they score surprisingly low in value of learning after controlling for student and school SES. This finding belies the fact that Private Voucher Selective schools charge extra fees to families in addition to the student voucher, administer rigorous and comprehensive mechanisms to select students, and as such serve mostly aspirational middle-class families that are excluded from accessing Private Fee schools and the highly selective Municipal schools, but desire to differentiate themselves from families attending Municipal and Private Voucher Non Selective schools. Students that are selected into these schools rub shoulders with peers in an environment that constantly reminds them of the social contradiction: that although they have been selected to schools of good quality, no matter how hard they try, they will never be part of the elite group that studies at Private Fee schools. It may be that expressions of this social tension are reflected in some of the responses from students in these schools. Scores on value of learning for students in these schools are not significantly different to students at Municipal Non Selective and Selective schools, and lower to those of students in Private Voucher Non Selective and Private Fee schools. This may be an expression of the frustration for students at Private Voucher Selective schools in knowing that working hard at school is not enough for them to be integrated into the elite. Students at Municipal and Private Voucher Non Selective schools understand that they have little chance of making a living without a secondary school education.

Although there are many other important conditions for schools to develop health and wellbeing among students, these findings give a glimpse into the impact of segregation in Santiago. It supports the previous arguments that schools serving low SES families, especially Municipal Non Selective schools, thanks to the effects of segregation, form residualised environments which concentrate disadvantage and limit the capacity to build robust and effective learning environments. Alternatively, segregation means that the schools serving high SES families enjoy the benefits of pooling advantage which engenders positive relationships and feelings towards the school which in turn provides a context for learning that supports global levels of academic success and advancement.

Impact on development of academic skills

The differences in quality of learning environments across the schools of Santiago lead to differences in acquisition of academic skills. The findings of this study confirm what has been found in other studies: social segregation affects student test scores. Given the high levels of segregation in Santiago, the association with student academic performance in math and reading tests is strong. In the case of reading test scores, the high levels of between-school variation found are largely explained by student SES (36 per cent), school SES (58 per cent), and to a lower extent by type of school (4 per cent). Although the between-school variance in math is half of that found in student reading test scores, it is still considerable, and 90 per cent of it is explained by student and school SES. This finding reveals that the separation of students by SES contributes to student achievement gap. And it does so not only by virtue of the strong association between student SES and test scores and their uneven distribution across schools in Santiago, but also through the contextual effects created by virtue of segregation. In the case of reading, type of school remains a powerful predictor of student test scores beyond individual and school SES, signalling a school effect that may be the result of pooling or of the practices and resources that schools deploy, or the interaction of both.

From the theoretical standpoint of this study, these findings suggest that by contributing to the student achievement gap, segregation in the educational system in Santiago helps reproduce inequalities and stratification, creating differential opportunities for students to access economic security and well-being, fundamental components of social cohesion. Academic achievement influences the opportunities of students to access good quality jobs, decent salaries and a minimum level of quality of life, and segregation in Santiago is acting as an institutionalised mechanism that limits this access to opportunity. This feature of the Santiago school system undermines the opportunities of low income students, segregated mainly into Municipal Non Selective schools and some Private Voucher Non Selective schools, to participate equally in further education and the labour market, while providing greater opportunities for high income families and students in selective and Private Fee schools.

Impact on development of broader social and emotional skills

The results of this study show that the impact of segregation on learning environments does not only affect student academic skills, but also the acquisition of other types of

skills such as social and emotional skills. In many countries, there has been growing interest in the role of schools and education in promoting the development of social and emotional skills including interpersonal and intrapersonal skills such as communication, collaboration and perseverance. The development of social and emotional skills has been part of the core objectives covered in the national curriculum framework in Chile (OECD, 2015). The results on the measures used in this study show that although school effects are not as strong as for academic skills, considerable between-school variance was found on two interpersonal skills: communication and collaboration. In the development of these skills, student SES is a strong positive predictor and, given the levels of social segregation in the system, a key variable for explaining the between-school variance. Levels of skills vary by student SES. The different school contexts created by segregation have an effect, beyond student SES, on levels of collaboration skills. Students at lower SES schools display weaker levels of collaboration skills than students at higher SES schools, all else equal.

The addition of type of school in the regression models reveal that although it is not a significant predictor of student levels of communication and collaboration skills, it considerably helps to reduce the unexplained between-school variance in both skills. The exclusive environments of Private Fee schools may help promote the development of communication skills above and beyond the effects of student SES and school SES. Students at Private Voucher Selective schools score surprisingly low in both skills, especially in collaboration skills, after controlling for student and school SES. Perhaps the aspirational and competitive atmosphere created in academically selective Private Voucher schools means that the focus is on cognitive and academic skills development and generic skills such as collaboration may be viewed and treated by these schools as a distraction from the primary focus. The fact that collaboration skills are less developed in students at selective Municipal and Private Voucher schools than in students at Private Fee and non-selective Municipal and Private Voucher schools, supports the argument that the social class divisions by type of school in a system organised around competition puts pressure on aspirational middle-class schools to achieve academically as a primary goal.

In times when the role of schooling is understood as much more than academic performance and tests scores, and when the skills necessary to enter the labour market, be an active citizen and contribute to social cohesion go beyond the acquisition of

cognitive skills only, school segregation in Santiago influences the opportunities of students of different social backgrounds to acquire the interpersonal skills that can help them participate as actively.

Impact on preparation of young people for work and further study

Planning for careers and further study is influenced by a range of factors including forces outside of the influence of school. However, they are also a product of experiences at school such as academic success and progress, and the actions of schools in helping students plan their futures. In Chile, as elsewhere, there are some key decisions that secondary students need to make which impact their future paths and opportunities in life. The decision to follow an academic rather than a vocational program during senior secondary education is one of these decisions. The results in this study show that the type of program provided by the school students' attend is a strong predictor of student aspirations in this respect, suggesting that student options are highly dependent on previous decisions of school enrolment. However, the analysis reveals that low achieving, low SES, and low aspirational students in terms of siting the university entrance exam, planning to study at a university, and considering to work as a first priority after school, are significantly more likely to be in students currently enrolled in a school that provides a vocational program than an academic course. In this sense, social segregation in Santiago affect student plans to follow an academic senior secondary program through school enrolment at Grade 10 or before, segmenting vulnerable, low aspirational and achieving students into vocational schools. It also happens that in Santiago, most vocational programs are offered by Municipal schools, a few by Private Voucher schools, and none by Private Fee schools, producing a segmentation of opportunities by type of program associated with type of school. On top of this context and previous decisions effects, girls and high achievers are still more likely to plan to study an academic course than boys and low achievers. These results reveal that social segregation is associated with unequal distributions of student enrolment by type of program, which influence future study plans and puts social cohesion at risk. By affecting student enrolments and plans to study an academic senior secondary program, social segregation can potentially affect scores in the tertiary education exam, access to university, completion rates in tertiary education, and reproduce social inequalities in general (Farias, 2013; OECD, 2007).

While most 10th grade students in Santiago would like to sit for the PSU after finishing secondary school, coming from a higher SES background and performing higher in the reading exam increases the odds of doing so, as well as studying at all types of school compared to Municipal Non Selective schools. Scoring highly at the PSU increases the chances of entering a prestigious university, pursuing a professional career, and earning higher salaries. Students at Municipal Non Selective schools usually obtain low PSU scores year after year in Chile, as they do not select students and concentrate the lowest SES students. The fact that the odds of sitting the PSU right after school are around 0.26 to 1 for students at Municipal Non Selective schools compared to students at all other types of schools reveals the different realities they live: as they come from the lowest SES families, they may be less likely to aspire to enter competitive tertiary institutions, and more likely to feel less prepare to perform in the test, or to decide to work to make a living or contribute to family income. In all, school segregation is associated with different aspirations to sit the PSU, working differently for students from different social realities and at different types of schools.

The finding that studying at a Municipal Non Selective school increases the odds of pre-university figuring in the plans of students after school supports the interpretation that students at these schools seek additional training to perform well in the PSU and continue onto tertiary education. The high levels of segregation in the secondary school system and the associated academic inequality it produces affect student future aspirations, in a way that students at lower SES schools, especially at Municipal Non Selective schools, become aware of their lower academic preparation and are therefore less likely to sit the PSU right after school, and more likely to consider enrolling in a pre-university institution to prepare the PSU. This mechanism to overcome academic disadvantages represents an institutionalised solution to compensate for inequalities resulting from segregation.

Belonging to a higher SES family, and studying at a higher SES school, namely a school other than a Municipal Non Selective school, increases the odds of university figuring in the mindset of students as their priority right after school, decreases the odds of choosing a professional institute or centre for vocational training as a first priority, and decreases the odds of aspiring to find a job. In as much as aspirations are related to actual decisions, social segregation has a potential association with future income inequality, as main

activity after school and the type of career and tertiary education institution accessed are powerful predictors of wage differentials in Chile.

The results show that social segregation by type of school in the Santiago secondary school system is associated with unequal work and study plans, contributing to the reproduction of social inequalities in Santiago. Most low SES students at low SES schools, especially Municipal Non Selective schools, adjust their plans according to the opportunities that the educational system provides for and expects from them: to follow a vocational program that will lead them into the labour market directly after school, even if this means having a low paying job in the future, higher chances of unemployment, or a lower score in the PSU and lower chances of completing tertiary education. For those disadvantaged students who would like to sit the PSU, social segregation affects their chances to be competitive in the tertiary admission exam against students who have entered a selective school or a Private Fee school, adjusting their study plans to enter a vocational pathway at a professional institute or a centre for vocational training, or to enrol at a pre-university to prepare the PSU. This is not the case for students at Private Voucher Non Selective schools, who consistently show higher future work and study aspirations than students at Municipal Non Selective schools after controlling for student and school SES.

The structure of opportunity in a segregated educational system like Santiago is slightly more promising for students in selective Private and Municipal schools. Academic success is the main driver of middle-class students selected at prestigious, free of charge Municipal secondary institutions, who study in highly competitive environments that push them to thrive academically. These students have ambitious work and study plans, as they are well prepared to perform strongly in the PSU, and enrol in the most prestigious careers at the best universities in Chile. Aspirational middle-class students at fee-charging, Private Voucher Selective schools are less academically driven, and are more likely to consider a vocational senior secondary program and a vocational career at a Professional Institute or Centre for Vocational Training than students at Private Fee schools.

While individual effort and academic success are expected from elite students at Private Fee schools, their family and school privilege protected by social segregation alleviates the pressure on them to secure a position in society by choosing the expected path towards

success. While some of them are even more likely to consider a vocational secondary path, their good preparation at school does not require them to study at a pre-university institution to perform well in the PSU and are more likely to study at a university than students at Municipal Non Selective schools.

This scenario of student future study and work plans in the structure of the educational system is not dissimilar to the situation of the two segregated strands of primary instruction, as it existed from the inception of the national education system in Chile in 1840, and the elitist characteristic of secondary schools and universities of the time[15]. It is evident today that more students are entering all levels of education under a national curriculum and being offered appropriate facilities, adequate materials and professional teachers, among many other improvements. However, even in a more complex system, with more alternatives and pathways to choose from, the segregated structure of the educational system remains, with defined options for each social class. Segregation affects student plans for work and further education, and acts as a major mechanism for the reproduction of inequality, power and status. Although there are always chances for social mobility and for students to deviate from these trends, the data shows that as a result of social segregation student study and work plans are stratified and are likely to perpetuate social inequalities in Santiago.

Impact on acquiring the skills and dispositions needed for community life

Schools are important places not only for preparing students for further study and careers, but also for developing citizens who are skilled and willing and able to participate in community life, mix and work with others and accept other points of view for the promotion of social harmony. This study has shown new evidence of the association between the separation of students and the development of several behavioural dispositions essential to the promotion of social cohesion. Although the models in this study do not address the issue directly, they support the views of Sandel (2012) that by preventing student interaction with students from different social backgrounds, school segregation affects the development of shared values and the formation of citizens willing to share in a common life and care for the common good.

[15] For an extensive review on the segmented and stratified origin of the Chilean education system, see Briones et al. (1984), Nuñez Prieto (2015), Egaña (2000); Illanes (1991); Labarca (1939), Harriet (1960), Aedo-Richmond (2000).

General trust in others has been perhaps the most used indicator to measure social capital and social cohesion, and the results of the multilevel logit models show that being female decreases the odds of trusting others, while the odds increase significantly with student SES and with mean school SES. Although type of school is not significant to explaining the odds of trusting others, students at Private Fee schools are almost twice as likely to trust others as students at all other types of school after controlling for student and school SES. In fact, 48 per cent of students at Private Fee schools state that most people can be trusted, compared to 24 per cent in Municipal Non Selective schools and 29 per cent in Private Voucher Selective schools. Only four per cent of the total variance in trust in others is found between schools, revealing that despite the differences found by student and school SES, and students at Private Fee schools, most of the variance is at the student level. However, it is still the case that students at low status schools are less likely to trust others, not only due to their own family situations, but also influenced by the contexts of disadvantage at school. In contrast, the environments available in more affluent schools are more likely to provide students with positive experiences of honest behaviours and rewarding outcomes, involving less risk of holding distrust in others, beyond the effect of their individual SES background. The concentration of privilege in Private Fee schools creates a protected environment such that students are twice as likely to have trust in others above and beyond the mean SES of the school and student SES. This means that the separation of students according to SES in Santiago creates different school environments that influence student levels of trust, adding evidence to support the argument of the distributional effect of education on social cohesion, and that the reduction of social segregation and educational inequality are potentially important to increasing overall levels of trust.

It may not be surprising then that social segregation is associated with dispositions towards others, a sense of connection to and pride in the common good, and willingness to support the welfare of others through active civic engagement. Student and school SES are relevant predictors of student civic honesty, and together explain almost half of the variance between schools. This finding supports the argument that anti-social behaviour is to some extent influenced by interactions with others. The segregated contexts of low SES schools are associated with higher levels of ant-social predispositions in students such as a greater likelihood of feeling that it is ok to claim government benefits to which you are not entitled, evading fares on public transport, and cheating on taxes. In this way,

based on the findings, it could be argued that the concentration of poverty and disadvantage in low SES schools produced by social segregation puts social cohesion at risk, as it creates contexts of interactions and role models where students internalise that it is ok to act against social rules and norms that affect others.

Student awareness of the importance of voting in elections and being active in political or social associations is related to student sense of belonging and awareness that democracy and social well-being are the result of everyone's commitment and participation in basic civic duties. A total of 16 per cent of student variance in these attitudes is found between schools, and all of it is explained by student SES, school status and type of school. School segregation in Santiago by type of school is associated with significant differences in student understanding of the importance of civic engagement for social well-being, through the actions of individual and school effects. In other words, the effects are not only due to the association between student importance given to civic engagement, individual student SES and the uneven distribution of these students across schools, but also by the school contexts created by social segregation and the differentiation by type of school. These results are confirmed when students are asked about their level of interest in political issues (10 percent between-school variance) and intentions to join traditional activities and institutions such as to engage in unpaid or voluntary work, join a political party or join a religious institution (six per cent between-school variance), where segregation explains almost all the between-school variance. In both cases, individual SES and school status are strong predictors of civic engagement, and students at Private Fee schools show higher levels of engagement than do students in other schools, all else equal. It is also the case that students at Municipal Non Selective schools receive the triple effect of segregation: students from low SES backgrounds, concentration of low SES students and type of school.

The finding that students at non selective Municipal and Private Voucher schools give significantly less importance to civic engagement than do students at Municipal Selective and Private Fee schools after controlling for student and school SES, once again reveals the social class structure of the secondary school system in Santiago, and the associated differences in student attitudes towards social issues. Students at Municipal Non selective schools are significantly less interested in political issues than all other students, and are less likely to become members of community groups or political parties or do voluntary

work as part of a group. The environments created in low SES non selective schools restrict opportunities for students to interact with students of other backgrounds and therefore only have the opportunity to mix with students of families who also have been excluded from the benefits of social advancement, and for whom civic engagement has never meant better life conditions.

Alternatively, Municipal Selective schools concentrate families that believe in merit and effort to succeed, and access the most prestigious and selective public secondary schools in Santiago. Civic engagement is an effective tool for them to influence public affairs, and students are positioned and expected to use it to their advantage. In turn, these schools have long traditions of strong student councils that get involved in social and political affairs, and school authorities and teachers that emphasise the importance of the public contribution of the school and their students (González Fernández, 2015). As such, the importance of civic engagement and interest in political issues for students at these schools is not only promoted by their social class, but by the school they attend. It is interesting to note that this sentiment does not translate to an increased likelihood that students at these schools will join political parties and religious organisations, suggesting a possible antipathy towards established institutions and a preference to influence public affairs through alternative channels.

It is in Private Fee schools where students show the highest scores on civic engagement, interest in political issues, and willingness to join community groups, above and beyond the influence of student SES. As children of the elite who have historically benefited from existing political arrangements, students are encouraged at home and at school to support established organisations. The children of industrialists, politicians, company owners, lawyers, physicians and artists, are continuously reminded at school that they have a responsibility in the guidance of the country by gaining leadership positions in whatever area of activity they decide to enter. This is the privilege of the elite, but it entails responsibility and commitment to civil society and the traditional institutions that help define the course of the country. Private Fee schools are active promoters of activities to develop citizenship and democratic and civic values in students, acting as a mechanism to preserve status and power in the Chilean society.

Unexpected results were found in the level of student interest in social issues (air pollution, climate change, terrorism, and so on) and degree of civic altruism (importance

of helping people in Chile and the world who are worse off than themselves). In both cases there is very low variation in responses between schools and no variation due to school SES. Furthermore, students at Private Fee schools show significantly lower interest in social issues than students at Private Voucher Non Selective schools, while students at Private Voucher Selective schools show low levels and significantly lower scores in civic altruism. Therefore, despite their positions of privilege in the educational system, and their higher levels of interest in political issues and willingness to engage in civic institutions and activities, students at Private Fee and Private Voucher Selective schools are less concerned about the welfare of those in need and less interested in issues of global concern. It is interesting to note that this is not the case for students at Municipal Selective schools. This result may suggest that the high scores on civic engagement and greater willingness to participate in public affairs of students at Private Fee schools, and to a lesser extent students at Private Voucher Selective schools, is not necessarily related to an interest in improving the welfare of those in need or a concern about world affairs. This finding supports the argument that for students at these schools issues of class, status and power influence the ways in which they engage in civic activities and institutions.

School segregation and the class structure it creates across the secondary schools of Santiago are associated with different levels of civic engagement, and jeopardise the capacity of the schools as a system to prepare citizens equally to contribute to democracy and social cohesion. Different school environments and climates are created, where advantaged students are reminded of their responsibility to seek positions of power, while marginalised students in low SES schools struggle to develop the civic values that do not have the same benefit for them. The international evidence shows that this situation is likely to erode economic success, democratic governance and social cohesion.

A similar story is seen with the extent to which students believe the Chilean economic system is fair to all, where students at Private Fee schools show significantly more positive opinions than students at all other types of school. Students in these schools are less likely than all other students to believe that big corporations make excessive profits and that the economic system generally favours the wealthy, and more likely to state that rich people pay a fair amount of taxes and that the economic system adequately looks after the poor. The Private Fee schools, devoid of members of the lower social classes, and providing opportunity to interact only with other members of the elite, reduce the

chance for schools to help students develop an awareness of other lives and lifestyles formed through the economic system in Chile. This does not necessarily mean that students at Private Fee schools are not aware of poverty, income distribution problems and other social inequalities in Chile; it rather suggests that they may not get the chance at school to develop an awareness of the extent of these problems and that some of them are associated with the structural configuration contributing to the economic system in Chile. The segregation of the elite in Private Fee schools in Santiago doesn't challenge for these students the view that the economic system works fairly for all, and that inequalities may be more associated with individual rather than structural forces.

It is noticeable that students at Private Voucher Non Selective, Municipal Selective and Private Voucher Selective schools especially, show significantly more negative views on economic fairness in Chile than students at Municipal Non Selective schools. This could relate to the aspirational nature of students in these schools. Additionally, since the restoration of democracy in 1990, educational and most other social policies in Chile have aimed to reduce poverty levels and marginalization, and have therefore been targeted towards the lowest income groups. Although social inequality is still a major concern, poverty reduction has been relatively successful in Chile compared to other countries in the region. However, this has meant that a growing middle-class in Chile has received less attention and assistance from the state, being in a relative state of vulnerability and less government protection than the lowest social class. In education, this has meant funding schemes, governmental programs to improve school resources, infrastructure conditions and teaching capacities mainly targeted to Municipal Non Selective schools that serve the most vulnerable students, and less attention devoted to Private Voucher schools, which benefit from the shared funding scheme and other family contributions. It is this context of greater public attention for the poor and Municipal schools, that may explain that students from Municipal Non Selective schools are more likely than students from middle-class aspirational families at Private Voucher and selective schools to believe that the economic system adequately looks after the poor.

Students at Private Fee schools are significantly more likely to believe that poor people are lazy and not very smart. This may well be related to a more strongly held belief that the economic system in Chile is fair for all, and that poverty relates more to individual

capacity to perform well in the system than to the influence that institutions and social arrangements have on people's chances of success.

Students at Private Fee schools are also less likely to support student diversity in schools compared to students at all other types of schools, as they are significantly more likely to believe that students should study in separate schools based on religion, gender and social background. Studying in a Private Fee school explains 55 per cent of the between school variance in student likelihood of believing that rich and poor students should attend separate schools. The long lasting social segregation and isolation of the elite in Private Fee schools in Santiago is expressed in the weak disposition of their students towards sharing schools, mixing and rubbing shoulders with others from different social backgrounds, affecting the opportunities for students and schools to develop the skills that are necessary to cope with growing diversity and dissensus, essential elements for social cohesion (Jansen et al., 2006).

The study shows compelling evidence regarding the association between school segregation in Santiago and student sense of legitimacy of social institutions beyond the economic system. Social segregation in schools in Santiago also matters in terms of trust in political and private institutions, a basic component of institutional legitimation and social cohesion. The findings suggest that social segregation is associated with differentiated opportunities to develop trust in political and private institutions, creating an institutional trust gap according to the SES composition of the school students attend. By producing extensive segregation, the Santiago organisation of schools is reducing the possibility for students to mix and learn from the world realities of other students.

Students at Private Fee schools show disproportionately high levels of trust in political and private institutions, beyond what would be expected based on their individual SES background. This is part of the school effect, influenced by the high level of social segregation generated in the Chilean school system.

Segregation across schools promotes and sustains differences in levels of faith in the political and private institutions in Chile, affecting the legitimation of social institutional arrangements.

12. CONCLUSION

The evidence presented in this study portrays a highly segregated school system promoting an unequal distribution of educational opportunity for learning and succeeding in school, along socioeconomic lines. Ultimately this contributes to perpetuation of social differences in economic success and careers. The extent of segregation also promotes differences in the opportunity for students from different social backgrounds to acquire the skills, dispositions and values needed for supporting social cohesion—such as sense of belonging, perceptions of social equity, civic participation, institutional engagement, value of diversity and trust in the institutions of Chile. Education promotes social cohesion best when it provides common access to the skills necessary for social integration, and an environment that promotes collective values, dispositions and identities for community life. The system in Santiago does not.

Segregation has been a feature of the Santiago school system for a long time, thanks to the creation and existence of a separate private fee system that has operated outside of public funding and has been a world unto itself, serving the wealthy of the city. But segregation has been intensified as a result of the introduction of the market-based voucher system which has led to privatisation of much of the remaining parts of the school system. This has helped build an association between SES and type of school whereby schools of different types effectively serve different social classes. The evidence provided in this study shows that this socially stratified structure has not only resulted in differentiated opportunities for students to access wealth, status and power, but also resulted in socialisation processes that harm the development of the basic attitudes and dispositions needed for people to live together cohesively.

In a world increasingly strained by processes of individualisation and diversification, the need to embrace diversity and difference is important if societies are to remain cohesive and promote social progress. The costs of having a segregated school system may be not only a weakened capacity to deal with the challenges of managing diversity, but also an overall subversion of the capacity for development of citizenship values, attitudes and skills needed to strengthen democracy.

The results of this study are relevant to policy makers, researchers and the broad community, as it provides new evidence for the discussion about the impact of

segregation which is greater than the social gaps in outcomes related to student academic performance (though these are important). The evidence generated in this work also shows that segregation has an impact on the creation of broader sets of skills, attitudes and values related to citizenship and civic engagement, essential to social cohesion. If the aim is to promote social justice and active citizenship through education (through new school-based public programmes to develop citizenship, for example) then modifying the institutional configurations that are associated with segregation should be a priority. The levels of social segregation in the school system in Santiago are inconsistent with public agendas aimed at promoting equity and social justice. Recent years have seen expressions of interest in the promotion of inclusion and greater social justice, though they are constrained by four fundamental pillars of the system associated with school segregation: (1) unfettered parental choice, (2) the shrinking public sector of schools, (3) the funding mechanism of vouchers, and (4) the maintenance of a completely separate sector of independent Private Fee schools. Without an active involvement of the State in addressing these issues, the levels of segregation in the system and the social class struggle embedded in schools are likely to undermine the capacity for education to act as a vehicle for social cohesion.

It is important to recognise some limitations in the current study, one of which is associated with survey samples such as ISCY-Santiago and that is the role of self-selection bias. It is difficult to identify if students choose a school or had no alternative, and if families that choose a certain type of school systematically differ in non-observed variables from families that choose segregated schools, affecting student skills and attitudes towards social cohesion. Additionally, results presented in this study come from student opinions in one year only, and do not control for previous or initial individual situations. As is well appreciated, longitudinal information provides more accurate estimations of the causality between explanatory and outcome variables in social studies.

The available data and analytic strategy of this study have focused on a description of the association between school segregation and social cohesion, and have not aimed to explore empirically the causes of educational segregation nor the presence of other types of segregation in the system, such as ethnic or gender segregation. For example, some findings reveal a complex interaction between gender and social segregation, especially

in Private Fee schools, revealing traditional contexts marked by gender inequalities in these schools. These are relevant issues that have not been taken up directly in this study.

Finally, while the evidence shown provides important information on segregation and social cohesion in the secondary school system in Santiago, it doesn't address a range of important follow-on questions which will require further work. Are differences in student skills, attitudes and disposition associated with segregation and social cohesion maintained after finishing secondary school, and later in life, controlling for initial conditions? What are the understandings and views of students who attend particular types of schools on other types of schools, on segregation, on society, and on students from other social classes? Does social segregation in secondary school systems in other countries have similar consequences for social cohesion? All these questions point to the opportunity to expand the current research to longitudinal, comparative, and qualitative studies to further explore the effects of school segregation on social cohesion.

13. APPENDIX

Full OLS model estimates of remaining scales of quality of school life and learning and intrapersonal skills

Parameters	**Emotional Engagement**	**Cognitive Engagement**	**Self-Management**	**Conscientiousness**
	Est.	**Est.**	**Est.**	**Est.**
Constant	-0.38**	-0.28**	-0.20*	-0.30**
Individual Level				
Gender (Ref: male)	0.24**	0.22**	0.07	0.27**
Student SES	0.06	0.07*	0.02	0.08*
School Level				
School SES	-0.12	-0.11	-0.18*	0.01
Type of School (Ref: Municipal Non Selective)				
Private Voucher Non Selective	0.24**	0.13	0.14	0.17*
Municipal Selective	0.22*	0.19*	0.21*	0.18
Private Voucher Selective	0.44**	0.12	0.10	-0.08
Private Fee	0.60**	0.44**	0.31*	0.40**
R2	*0.04*	*0.03*	*0.01*	*0.05*
N cases	2118	2124	2039	2012

*p < .05. **p < .01.

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