https://doi.org/10.36315/2025v2end058
p-ISSN: 2184-044X e-ISSN: 2184-1489 ISBN: 978-989-35728-8-7 © 2025

SWITCHING COSTS IN SCHOOL CHOICE SYSTEMS

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Abstract

Chilean households value academic quality and have access to detailed information about schools' characteristics. However, they seldom react to relative changes in the quality of schools and their potential competitors by switching schools. Why do students not switch more often despite their ability to do so each year? I document that families' preferences for schools exhibit inertia, which deters them from switching. To quantify this inertia, I estimate a discrete choice model combining rich administrative data and two sources of identification. First, some students are forced to switch because of schools' grade level configuration, which disrupts their inertia. Second, the introduction of a centralized assignment mechanism reduced search costs earlier for some students than for others. I find that families are willing to switch only if the destination school is substantially better than their current school. Further, I investigate the microfoundations of this inertia by surveying a random sample of parents. My findings indicate that attributes that develop through the schooling experience and that are difficult to modify through market forces or policy interventions, such as the learning environment and personal relationships, are relevant. This implies that the demand for schools is to some extent captive, which dilutes the incentives for schools to compete in attracting enrollment and could limit quality improvements in school choice systems.

Keywords: *School choice system, switching costs, peer effects, deferred acceptance algorithm.*

1. Introduction

School choice systems, which allow students to choose their school each year, have been growing in popularity around the world (Patrinos et al., 2009). In such systems, the freedom to choose –and switch– schools is the key channel of demand-side pressure for schools to compete with each other to attract enrollment (Friedman, 1962). If families hesitate to switch when their schools worsen or when potential competitors improve, then the demand becomes captive and the incentives for all schools to improve (and thus retain or attract other schools' students) are diluted. As a consequence, this could limit overall quality in school choice systems. Given the growing ubiquitousness of policies granting room for choice, understanding the extent to which households are willing to switch schools is key to judge the potential success of these policies in improving the quality of education.

2. Objectives

In this paper, I document that families' preferences for schools exhibit inertia, which deters them from switching schools. I formalize the above argument by drawing an analogy with the literature on switching costs (or inertia), which investigates, in different contexts, why agents do not react to changes in the market environment that would benefit them (Farrell and Klemperer, 2007). In schooling, inertia might arise because students form relationships that are deleterious to break or because searching for a new school is costly (if parents have to gather information or fill out paperwork). If these costs are high, they might deter families from leaving poorly performing schools or seeking to enroll in better ones. On top of weakening the incentives to compete, the presence of inertia could explain why families do not necessarily choose the "best" schools, an observation that the literature has attributed to a lack of preferences for quality (Abdulkadiroğlu et al., 2020) or inaccurate information about what the best schools are (Ainsworth et al. (2022), Allende et al. (2019)).

3. Methods

I proceed in five steps. First, I present descriptive evidence on the existence of inertia. I show that every year a minor share of students chooses to switch schools, that the probability of switching does not change after changes in the relative quality of their schools and the (geographically) closest competitor, and that the introduction of a website that alleviated search costs increased mobility. In the second step, I study the consequences of switching for cognitive and noncognitive outcomes. This step is key because a school choice system requires that families be willing to switch schools (to strengthen demand-side pressure on schools); if the costs of doing so outweigh the benefits, encouraging mobility might hurt switchers. I find weakly positive effects of voluntary switches. Third, I explore the consequences of school mobility for nonswitchers. This is relevant because having new peers each school year might affect performance in ways that are not immediately obvious. In addition, any policy aimed at encouraging mobility should take into account the potential externalities for nonswitchers; I find that these are negative but mild. Steps 1, 2 and 3 pose a puzzle: families could be better off by switching schools while inducing only mild externalities for the students who receive new classmates. Why, then, do they not switch more often? In the fourth step, I offer an explanation by investigating the factors that drive families to seek a new school. To do so, I estimate a demand for schools that incorporates inertia combining a discrete choice model with data on students' choices and schools' attributes. Finally, to decompose inertia in different potential sources, I show the results of directly surveying a random sample of parents to inquire about their reasons for not switching.

In the first step, I show descriptive evidence of the presence of inertia in the Chilean school system. First, I show that a every year only a minor share of students switch schools. Second, I show that the marginal effects on the probability of switching after changes in the cognitive and noncognitive outcomes of the closest competitor schools are precisely estimated zeros. In other words, students do not react to changes in the market environment even though, in principle, switching to better-performing schools would make them better off. Third, I estimate an event study leveraging the staggered roll-out of a school choice system that alleviated search costs by centralizing in a single web-platform all the information and paperwork that families had had to collect on their own before its introduction. I find that switching rates increased by 1.5 percentage points in grades in treated administrative regions over the rates in untreated ones. This suggests that part of the inertia is due to search costs.

In the second step, I study the consequences for switchers in terms of both cognitive and noncognitive outcomes. Answering this question is challenging because of the unobserved nature of the underlying switching decision process and the likelihood that it might be related to the very outcome on which its impact is being measured. For example, if students whose parents advocate for a better education are more likely to switch schools, a positive effect of switching may arise due to parental support, thereby biasing the effect of switches. I overcome this challenge in two ways. First, I leverage the fact that some Chilean schools have grade configurations that do not offer 9th grade, forcing their 8th-grade students to switch schools. Being enrolled in a school that does not offer the following grade increases the probability of switching schools only for those in such schools while not necessarily impacting students' outcomes per se. Second, I leverage the fact that the centralized school choice system (CSCS) allocates students to schools using the deferred acceptance algorithm with embedded lotteries when there are ties among applicants at oversubscribed schools. This allows me to recover the probability of a student's being offered a seat at a new school, conditional on which such offers are independent of unobserved determinants of outcomes (Abdulkadiroğlu et al., 2017).

4. Discussion

I find that, two years after switching, students forced to switch (but allowed to choose where to re-enroll, given the school choice system) perform approximately 0.2σ lower than students who are not forced to switch schools on cognitive outcomes and approximately 0.14σ lower in noncognitive outcomes. However, I find that, one year after the switch, students who voluntarily switch schools perform 0.3σ better in reading (and not different in math) than those who also applied to switch but were denied a seat in a new school by chance. Heterogeneity analyses indicate that the positive effects in reading are stronger among students who performed above average before voluntarily switching than among nonswitcher students who also performed above average. Similarly, noncognitive outcomes remain unchanged across the four alternative available measures. In this case, the heterogeneity analysis indicates that self-esteem deteriorates considerably among students who scored above average in this dimension before switching. Taken together, these results suggest that the consequences of switching schools are, at the very least, not harmful for voluntary switchers.

In the third step, I study the consequences for nonswitchers, i.e., those who remain in their current schools and experience the arrival of new classmates. Addressing this question presents the challenge that the proportion of new entrants is likely correlated with unobserved determinants of school quality, which, in turn, can affect students' outcomes. As a consequence, any cross-sectional estimation of the effect of the share of new entrants on outcomes comparing students facing different shares in different schools would be biased in the direction of the correlation between the share of new entrants and the unobserved determinants of students' outcomes. To address this issue, I build upon Hoxby (2000) and exploit the variations in the new entrants share within the same school to compare students at different grade levels who are similar in observed characteristics and school environment but who face different exposure levels to new classmates. Such variation can be considered idiosyncratic after I control for a rich set of individual characteristics.

I find that turnover has a small negative impact on the cognitive outcomes of nonswitcher students. An increase equivalent to one standard deviation in the share of new entrants leads to a decrease of 0.007σ and 0.015σ in math and reading test scores, respectively. Additionally, turnover hinders noncognitive outcomes, with effects ranging between 0.004 and 0.02σ (depending on the noncognitive dimension) following an increase of one standard deviation in the share of new classmates. The heterogeneity analyses reveal that the negative effects are concentrated among students with lower baseline performance, and for cognitive outcomes, this effect is more pronounced among girls. In the case of noncognitive outcomes, the negative impact is stronger for boys. The composition of the share of new entrants proves to be a key factor, as the better (worse) the outcomes of new students, the more positive (negative) are the effects on both cognitive and noncognitive outcomes of nonswitcher students. Additionally, when a higher proportion of new entrants is of a disadvantaged background, the negative effects on nonswitcher students become more pronounced.

These three preceding steps pose a puzzle: why despite the potential benefits of switching to preferred school's students do not switch more often? In the fourth step, I study the causes of school mobility by estimating a demand for schools with switching costs. The inclusion of these costs captures the idea that students become locked in after enrolling in a given school and, thus, deter them from switching. I incorporate two sources of inertia to account for the fact that, after considering other relevant schools' observed attributes (e.g., alternative measures of quality or peer SES), students might hesitate to switch schools. The first source arises from the hassle of having to look for alternative schools, visit them to find out about educational projects and complete paperwork (a search cost). The second source captures a bundle of other potential sources of inertia such as leaving friends or specific teachers behind (a fixed cost). Both of these costs might deter families from switching schools even if there are better alternatives available, if they are informed about these, and they value academic and non-academic quality.

To separately identify these two sources of inertia, I extend the argument in Luco (2019) to the Chilean school system context. In particular, different Chilean students face different switching costs depending on two dimensions. The first dimension is whether students have to actively choose a school; this dimension generates two groups of students. The first group is composed of those entering the system for the first time (i.e., rising 1st-grade students) and those transitioning to a grade level that their status-quo school does not offer (most of them in 8th grade due to the common 1st-to-8th-grade configuration in Chile); I call these active students. The second group is composed of students already enrolled in the system who can passively remain in their status quo by default (e.g., students in 4th grade in a school that offers 5th grade); I call these passive students. The second dimension is whether students apply to switch schools through the centralized school choice system, which, given the roll-out of the system, depends on the grade in which the student is seeking to enroll and the administrative region in which the school is located. The intersection of these two dimensions generates four types of students: passive students exposed to the CSCS; passive students not exposed to the CSCS; active students exposed to the CSCS; and active students not exposed to the CSCS.

Passive students both exposed and not exposed to the CSCS can avoid both the search and the fixed costs by remaining in their status quo schools. Active students exposed to the CSCS can avoid only the search cost, as the CSCS eliminates the hassle of having to collect information on different alternative schools but no other costs associated with leaving a school, such as leaving behind a community. If the fixed costs are high enough, passive students subject to the CSCS will remain in their status quo schools. Thus, comparing the choices of this group with those of active students subject to the CSCS identifies the fixed costs. On the other hand, active students not exposed to the CSCS incur both costs upon (obligatorily) switching schools. Thus, the comparison of the choices of this group and those of active students exposed to the CSCS identifies the search costs.

The demand estimates show that, after I account for a set of relevant schools' attributes such as peers' socioeconomic characteristics, out-of-pocket fees and academic and nonacademic quality, families derive high disutility from switching schools. Specifically, the search cost equals 0.2σ of the school average test score in math (1.4σ of a noncognitive test). In other words, families are willing to "pay" the search cost only if moving from a median school to one in the 60th percentile of the school-average math test score distribution. These estimates are higher for disadvantaged students (0.33σ), which implies that this group of the population does not exercise choice effectively. Overall, these results imply a weak demand-side pressure channel over schools to improve quality, provided that families' school choices show substantive inertia. To obtain an idea of what schools' responses are to this inertia, I calculate value added among schools that offer primary only versus those that offer secondary only. The former, which face arguably less pressure to offer quality (as their students must switch at the end of 8th grade and, thus, they face no incentives no retain them) provide significantly less value added than the latter, which face more pressure (as these must attract and retain them.)

In the fifth step, I address two potential concerns about my switching costs estimates. First, the fixed cost is a bundle of multiple factors –e.g., friendships, school community and its environment– that are impossible to disentangle with the administrative data only (this concern is common in the switching costs literature but is often disregarded). Second, its quantification depends on an inference from parents' revealed preferences for schools' attributes that might be imperfect if parents' choices are constrained for any reason. To deal with these concerns, further decompose the sources of inertia in its microfoundations, and directly quantify switching costs, I conduct a survey on a random sample of parents of students in primary education.

To nonswitchers, I ask them to choose reasons for not switching schools among a closed set of possible reasons. I find that distance to school, academic quality and the educational project (presented to parents as the "learning environment, educational project and values") are the three main reasons cited. However, parents also rank the "specific teachers" (65%) and "friendships" (45%) as important factors. These are all attributes that develop with the schooling experience and that are difficult to change by market forces or policy interventions. For switchers, I ask them to evaluate the importance of different attributes when choosing a new school. I find that the most important ones are academic quality and the educational project. Finally, I quantify switching costs building upon Becker et al. (1964). I present hypothetical schools to both groups of parents to infer their "willingness to switch" by sequentially improving these alternative –but otherwise very similar– schools on three dimensions: increasing values of academic outcomes, a discrete improvement in nonacademic outcomes, and increasing amounts of lump-sum cash transfers. I find that even when parents are offered sizable hypothetical improvements in academic outcomes or lump-sum cash transfers, they are unwilling to switch. However, they do seem willing to switch in exchange for improvements in nonacademic outcomes.

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