School choice and information*

Elección de escuelas e información

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Abstract

One of the pillars of the educational voucher system is that competition between schools to attract students would improve the quality of the education provided. Surveys in Chile have suggested that parents are not aware of the performance of their children's schools. In this paper, we assess the effect of public information of school quality on the school choice by parents. We use a data set which includes measurements of the distance between homes and schools, and the performance of the school measured by a standardized tests and the school fee for two distinct periods (1996 and 2003). Whereas in 1996, information regarding school performance was scarce, it was widespread in 2003. We conclude that regardless of these considerations, school performance is an important determinant of school choice. Thus, parents appear to act "as if" they knew it when choosing a school. Nevertheless, making public the information regarding the performance of the schools has made it a more important factor in choosing a school.

Key words: *Vouchers, School choice, Distance, Information, Chile.*

JEL Classification: *C25, I21.*

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Resumen

Uno de los pilares detrás del sistema chileno de vouchers es que la competencia entre escuelas por atraer alumnos debiera conducir a mejoras en la calidad de la educación. Encuestas a padres de familia indican que los padres desconocen el desempeño de las escuelas de sus hijos. Este trabajo muestra el efecto de la provisión de información en la selección de escuelas. Para ello, construimos una base de datos que incluye medidas de distancia entre hogares y escuelas, junto con información del desempeño de las escuelas en pruebas estandarizadas para dos períodos (1996 y 2003). Mientras que en 1996 no existía información pública del desempeño de una escuela, en el año 2003 sí la había. Concluimos que en ambos períodos el desempeño de los colegios es importante en la elección de escuelas, por lo que los padres se comportan como si conocieran esta información. De todos modos, hacer pública esta información hizo que este factor sea más relevante al momento de elegir escuelas.

Palabras clave: *Vouchers, Elección de escuela, Distancia, Información, Chile.*

Clasificación JEL: *C25, I21.*

1. Introduction

Very much in line with Friedman's (1955) seminal work, Chile introduced a massive voucher system in 1981. The system was designed assuming that, by "voting with their feet," parents would choose schools of higher quality. This would lead to greater competition between schools and improve the quality of the education by eliminating low quality schools. However, if parents ignore the quality of the education when choosing schools, the voucher system would not have a positive effect on educational quality.

As the proper functioning of this system requires well-informed parents that can discriminate between good and bad schools, a number of surveys have been performed to determine how much parents know about the schools they choose. While the surveys indicate that parents value "quality" when choosing a school, they also show that they are not well informed with regards to the results of the standardized tests of their children's school. Intended to measure the quality of schools, this standardized test (named SIMCE) has been in use since 1988. However, the results of this test were made public only after 1995.

This paper analyzes the effect of making public the results of the standardized tests on parents' decisions. A natural hypothesis is that the provision of this information filled a gap and helped parents to make better decisions. Alternatively, and providing a possible explanation for the apparent contradiction that indicates that parents value quality but do not know the test results for the school their child attends, parents may have always used an information set that is highly correlated with test scores and that correctly signals the quality of the schools. In this case, making accessible the information regarding test scores would not be as important, given that parents have always behaved "as if" they knew them.

The paper studies the effect that the publication of information on school results has on the school choice decision. Using a model suggested in Chumacero, Gomez and Paredes (2011) we evaluate the reaction to the quality variable in the choice decision for the years 1996 and 2003. The year 1996 was chosen because the school results were not public yet. By 2003, the results of seven tests were already available.[1]

The paper is organized as follows: Section 2 describes the Chilean voucher system and provides a brief review of the literature that relates information and school choice. Section 3 discusses the econometric framework used to evaluate the determinants of the choice of school and describes the data set. Section 4 reports the results and Section 5 concludes.

2. Vouchers and Information

The voucher system instituted in Chile in 1981, follows significantly Friedman's original idea and is the most massive in the world, with over 90% of the students affected. After the introduction of this system, the Chilean educational system comprises three types of schools: i) Public: Administered by municipalities and financed primarily with vouchers; ii) Subsidized: Administered by private institutions and financed primarily by vouchers (most of them with small additional payments made by parents); and iii) Private: Administered by private institutions and financed exclusively by payments made by parents. The municipal and subsidized are basically funded by taxpayers. This funding is through a scheme of educational grants or subsidies per student (demand subsidies), which are to contribute to operating expenses and capital facilities.

Thus, there are three differences between voucher schools. The first concerns the administration: in privately subsidized schools the administration is made by the private sector, while the administration of municipal schools is made by municipalities. A second is that the financing of municipal schools basically depends on the State subsidy, while some privately subsidized schools require a surcharge to be born by the parents (these schools are called "*financiamiento compartido*"). The third difference is that municipal schools cannot select students unless they lack vacancies. Private schools may select.

According to the Chilean Ministry of Education, the number of schools was 10,768 in 1996 and 11,223 in 2003; 61%, 28% and 11% were municipals, subsidized and private respectively in 1996, and 55%, 37% and 8% in 2003. More recently, there has been an increase in the number of schools, enrollment and participation in the subsidized sector (Paredes and Pinto, 2009).

A standardized test (SIMCE) is taken annually by students of all school types. This test evaluates the achievement of fundamental objectives and minimal obligatory contents of the curriculum prevailing in different subsections of learning through a measurement which is applied on a national level once a

[1] The first results of the standardized test that were made public correspond to the test taken in 1995. However, these results were made public at the end of April of 1996, when the school period had started. Section 3.2 provides further justification for the choice of the years 1996 and 2003.

year to students following a certain educational level. Until the year 2005, the application of the tests was alternated between 4th Grade Elementary, 8th Grade Elementary and 2nd Year Junior High. As of the year 2006, 4th Grade Elementary is evaluated every year while alternating between 8th Grade Elementary and 2nd Year Junior High.

Even though the Simce is public, some authors suggest that parents barely use this information to decide the school their children attend. Instead, they rely on social networks (family and friends) to choose them (Elacqua and Fabrega, 2004).[2]

The debate concerning parent's information in the school decision is at the center of the voucher system. Smith and Meier (1995) maintain that if parents are ill informed, information asymmetries undermine the potential benefits of school choice. On the other hand, only a relatively small number of well informed parents (*choosers*) may be needed to force schools to improve the quality of the education they provide (Hamilton and Guin, 2005; Stewart *et al.*, 2005).

Experimental evidence tends to favor the view that information helps parents to make better decisions. For example, Hastings *et al.* (2007) develop experiments in which they provide parents with information regarding the quality of nearby schools along with probabilities of their children's acceptance. They contend that providing information increases the importance that parents place on quality even at the expense of lowering the probability of acceptance. Hastings and Weinstein (2008) also consider experimental evidence to determine that poorer parents benefit from having better information regarding the schools, but that public schools may not have the incentives to provide it. Kisida and Wolf (2007) show that parents of low income families that can choose the school of their children are better informed of the school's characteristics.

Hussain (2007) uses information from standardized tests in England to evaluate the impact information has on enrollment. Schools with low scores suffered a 6% loss in enrollment three years later, while schools with high scores increased enrollment by 2%. These responses were similar regardless of the income level of the parents. Smith (2009) studies the effect of the arrival of new information on the quality of schools in British Columbia, Canada, and finds that this information makes parents react to indicators of quality and generates competition between schools.

Regarding control variables, only a few studies have directly considered distance to school from the household as a relevant factor when choosing a school, a variable that is definitively relevant. Hastings *et al.* (2006) conclude that American parents value proximity and schools' average test scores, and that the importance given by parents to scores increases with in family income and student skills. Gertler and Glewwe (1989) analyze the role of distance for Peru, and Alderman *et al.* (2001) for Pakistan, finding that distance matter. For Chile, Gallego, *et al.* (2008), using interviews they remark a positive correlation between the percentage of parents who claim to know the SIMCE and school results. From there, they propose the distribution of a report card to parents

[2] Stewart *et al.* (2005) and Hamilton and Guin (2005) contend that, in the US, the three main sources of information of the quality of schools that parents use are brochures, visits to schools, and most importantly social networks (mainly family and friends).

whose children study in schools or will soon be doing so. The idea is, again, that this information would help parents make better decisions and provide incentives for schools to improve their quality. Gallego and Hernando (2008) using a random utility model conclude that parents consider schools' average scores, accessibility and the fees charged by schools when deciding the school. They find that parents with higher expectations about their pupil's skills place a greater value on the schools' test scores. Analyzing selection, they also conclude that selection is basically made by parents and not by schools, though the former may be restricted by the school location.

In the same line, Chumacero, Gomez and Paredes (2011) develop a model to determine school choice. By geo referencing school and homes and hence, getting a precise measure of school distance, they report that parents value quality, measured by the Simce test, and dislike distance and fees. They also compute relevant trade offs, which suggest that quality is very relevant in the choice made.

3. Model and Data

As stated above, surveys show that parents are not aware of their own children standardized results, something which could suggest that they ignore quality when choosing a school. To distinguish both aspects has critical consequences on public policy regarding disclosing information. Using a sort of natural experiment, we can evaluate whether the release of information on schools results changed parent's behavior or, on the contrary, their behavior was unchanged since, for instance, parents had their own way of knowing about school quality.

To do so, we estimate a model of school choice using information published in 1996 and in 2003. Since the first time in which the results of standardized tests were made public was April 1996 (results of the test taken in 1995) and, by that date, parents had already chosen schools, the dissemination of this information could not have affected their decision. This section briefly describes the school choice model developed by Chumacero, Gomez and Paredes (2011) that is the one we followed, and how the data set was constructed.

3.1. The Model

Parents consider several factors when choosing a school for their children. Some of them are specific to each child but common to every possible school selected (such as the child's age, the education of the parents, child's gender, household income, or other characteristics of the child or the household). Others correspond to characteristics that are specific to each school and are common to every child and household (such as the type of school, its quality, its costs, and other characteristics of each school). Finally, there are other attributes of each choice that are specific to the child and the school (most notably, the distance between the household and the school).

Let $i = 1, \ldots, I$ index the individuals (students) in the sample and $j = 1, \ldots, J$ index the possible choices (schools). Denote by x_i to the vector of characteristics of the student and its household that do not depend on the school, by y_j to the vector of characteristics of the school that do not depend on the student, and by $z_{i,j}$ to the vector of attributes of the school that are specific to each student.

Define $u_{i,j}$ as the (indirect) utility of child *i* attending school *j*, such that:

$$u_{i,j} = u\left(x_i, y_j, z_{i,j}\right) + \varepsilon_{i,j}, \tag{1}$$

where $u(\cdot)$ corresponds to a systematic component and $\varepsilon_{i,j}$ is a (random) non-systematic component.

From (1), agent *i* chooses school *h* if $u_{i,h} \geq u_{i,j} \quad \forall j \neq h.$ Given a functional form for $u(\cdot)$ and a distributional assumption of $\varepsilon_{i,j}$, parameters can be estimated using quasi-maximum likelihood (QML). When each individual has some factors that are specific to each choice (such as distance), the empirical literature tends to favor using conditional logit models for estimation.

Chumacero, Gomez and Paredes (2011) follow a different approach to evaluate the determinants of school choice. Let $d_{i,j}$, denote the distance between household *i* and school *j*. Let d_{n_i} be the distance between household *i* and the nearest school and u_{n_i} the value of the objective function in (1) associated with choosing that school. On the other hand, let u_{m_i} be the value of the objective function associated to the choice of the school that maximizes (1). Note that the school that minimizes $d_{i,j}$ and the one that maximizes $u_{i,j}$ may be different for each student *i*. Clearly, when the nearest school maximizes (1), u_{m_i} and u_{n_i} will coincide. Finally, let

$$v_i = \begin{cases} 1 & \text{if } u_{m_i} = u_{n_i} \\ 0 & \text{if } u_{m_i} > u_{n_i} \end{cases}. \tag{2}$$

That is, v_i is the (observed) variable that takes the value of 1 when the student attends the school nearest to the household and 0 otherwise.

Considering (2) instead of (1) is convenient as now we can focus on modeling the determinants of choosing the nearest school using binary response models. The model considered postulates:

$$\Pr\left[v_i = 1 | w_i\right] = F\left(\beta' w_i\right), \tag{3}$$

where *F* is a postulated distribution function (say the standard normal), w_i is a vector of determinants, and β a vector of parameters to be estimated.

The vector of potential determinants considers:[3] i) individual or household characteristics: Gender, age, education of the father and the mother, and (log of

[3] We have information regarding the price that parents are reported to have paid for the school in 2003, but that information is not available for 1996. Thus, the models estimated here are different from the ones estimated in Chumacero, Gomez and Paredes (2011) that use the information of the year 2003 and include prices. We omit prices in the models estimated here. Alternatively, prices of the year 2003 could have been imputed to the schools in the year 2003. However, some problems with that approach are: First, some schools that existed in 1996 no longer existed by 2003. Second, by imputing the 2003 prices we assume that the relative prices (between schools) have not changed. The omission does not allow for consistent identification of the marginal effects of some of the variables (particularly those highly correlated with prices). However, as this paper pretends to compare the impact of

the) income per capita of the household; ii) characteristics of the nearest school: Quality of the school (average result in standardized tests), distance of the nearest school from the household; iii) characteristics of the school chosen: Quality of the school (average result in standardized tests), type of school (municipal, subsidized, private)[4]; and iv) competition: Number of schools in a 2 kilometers radius from the household.

3.2. The Data

CASEN is a household survey carried out by the Ministry of Planning of Chile on a regular basis. This survey provides detailed information of socio-economic characteristics of Chilean households. We consider the information of the surveys conducted in 1996 (the year in which the publication of the information regarding the performance of schools in the standardized test could not have affected the parents' choice of school) and the year 2003. CASEN has detailed information of households and individuals. The CASEN survey has become the main tool for socio-economic measurement towards the design and evaluation of social policies currently available in Chile. CASEN has statistical representation of the national, regional, urban and rural levels, and for some Chilean districts and counties. The surveys have been carried out every two or three years since 1985.

The survey allows for the identification of the school that each student attended. Using this information, the precise location of the school can be pinned down. To measure distance from the household to the school one needs to identify the location of the household. Even though the survey does not provide a precise address for the household surveyed, it does contain information about the block in which the household is located.

These blocks can be geo referenced using digital maps provided by the companies DICTUC and Mapcity, which cover the entire city of Santiago.[5] At the same time, using the School Directory of the Ministry of Education (MINEDUC), which includes all of the schools' addresses, it is possible to georeference most of them. On average, the area of a county is about 4,386 hectares, whilst that of a block is only 1.922 hectares. The number of blocks in the Metropolitan Region is 50,028 and the population in 1996 and 2003 was 5,759,083 and 6,336,687 respectively.

For the year 2003, the quality of the school is proxied by the average score of the school in the standardized test of the year. For the year 1996, we use the average scores of the school in the tests between 1994 and 1998.[6]

Table 1 provides some descriptive statistics of the students reported as attending school in CASEN 1996 and 2003 who lived in Santiago. The sample is evenly split between males and females. Parents of students whose children

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information, one can compare estimates of both samples in models that have the same misspecification.

4 It is not necessary to include distance of the school from the household, as this variable along with the distance to the nearest school would perfectly forecast v.

5 Even though CASEN is a national survey, digital maps are available only for Santiago and this paper concentrates its estimations on households of this city.

6 Prior to 1998, the Ministry of Education did not use the scores as computed presently. Thus, we estimated them using the percentage of correct answers in the math and language tests.

TABLE 1
DESCRIPTIVE STATISTICS BY TYPE OF SCHOOL ADMINISTRATION (AVERAGES)

Variable	1996				2003			
	Total	Municipal	Subsidized	Private	Total	Municipal	Subsidized	Private
Share of women (%)	50.6	49.9	51.6	49.4	49.3	48.8	49.5	49.7
Years of schooling (father)	12.2	11.1	11.8	15.9	12.6	10.9	12.5	16.8
Years of schooling (mother)	11.5	10.4	11.3	14.8	12.0	10.5	12.1	15.3
Income per capita (US$ per month)	218.7	126.0	159.9	622.5	229.0	123.8	188.3	656.2
Share of students (%)	100.0	40.0	44.4	15.6	100.0	33.6	53.1	13.3
Distance of school chosen	2.92	3.14	2.44	3.72	2.90	2.57	2.78	4.22
Quality of school chosen	267	254	267	304	256	240	257	296
Distance of nearest school	0.42	0.40	0.42	0.47	0.52	0.46	0.55	0.53
Quality of nearest school	257	252	256	274	248	241	247	272
Distance of nearest municipal school	0.76	0.64	0.77	1.07	0.90	0.67	0.93	1.34
Quality of nearest municipal school	245	242	241	261	232	230	231	246
Distance of nearest subsidized school	0.65	0.61	0.56	0.99	0.78	0.71	0.73	1.15
Quality of nearest subsidized school	261	258	260	272	254	250	252	266
Distance of nearest private school	2.03	2.25	2.22	0.91	1.92	2.08	2.07	0.95
Quality of nearest private school	292	292	294	286	286	286	287	287
Number of schools (2 kms radius)	21.8	22.9	22.0	18.3	20.8	21.1	21.3	18.2
Quality of schools (2 kms radius)	272	269	271	286	255	252	253	270
Number of municipal schools (2 kms radius)	7.9	9.2	8.1	4.1	4.4	5.2	4.4	2.1
Quality of municipal schools (2 kms radius)	245	243	243	257	241	239	240	254
Number of subsidized schools (2 kms radius)	11.3	12.0	12.6	6.0	13.6	14.0	15.3	6.3
Quality of subsidized schools (2 kms radius)	261	259	261	270	252	250	252	263
Number of private schools (2 kms radius)	2.6	1.7	1.3	8.1	2.8	2.0	1.6	9.8
Quality of private schools (2 kms radius)	291	288	291	295	286	285	286	287
Share of students that attend the:								
nearest school	14.1	19.4	12.2	5.9	17.6	24.4	15.5	8.9
nearest school of the same type	23.2	30.9	19.9	12.6	26.9	36.2	24.3	13.8

Notes: Distance is measured in kilometers; quality is measured as the average score of the students of the school in the standardized test (SIMCE).

attend private and subsidized schools tend to have more years of schooling and more income than those whose children attend municipal (public) schools.

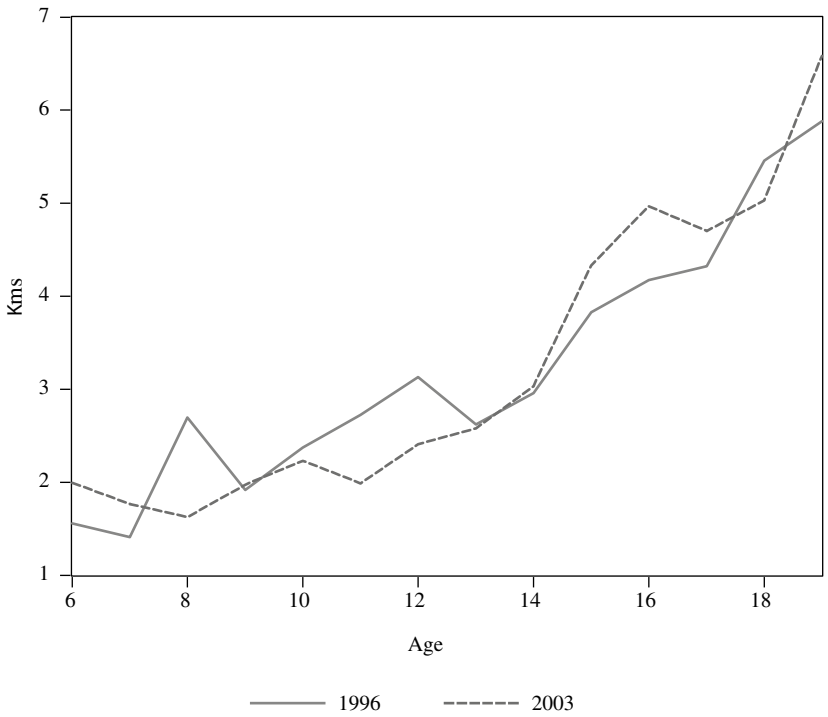
On average, the distance between the house and the school chosen by the parent has remained virtually unchanged between 1996 and 2003; while the results in the standardized tests have not improved (in fact, they have worsened).

The number of schools near the household (< 2 km) has also shown a small decline. This is due to a more significant decline in the number of public schools compared to the increase in the number of subsidized and private schools. The reduction in the number of public schools is mainly due to an important migration of students from private to subsidized schools (Paredes and Pinto, 2009). As documented by Chumacero and Paredes (2008), private schools and subsidized schools tend to perform better than municipal schools in standardized tests.

Interestingly, regardless of the type of school finally chosen, a smaller fraction of parents chose the nearest school in 1996 than in 2003. Thus, choosing the school nearest to the household was less prevalent before the information of the results of standardized tests was made public.

The average distance between the household and the school attended varies with the age of the child (Figure 1). The schools chosen are nearer to the household in primary education and an almost discrete jump occurs when the student

FIGURE 1
AVERAGE DISTANCE BY AGE (IN KMS)



starts attending high school (around age 15). This feature is related to the fact that there are fewer high schools than primary schools and that, as age increases, the cost of traveling diminishes with students becoming more financially autonomous. This pattern remained virtually unchanged between 1996 and 2003.

4. The Results

Prior to presenting the results of the estimation of the determinants of school choice before and after the publication of the scores, it is important to remark that the information published concerns the average score of the school and not of the entire distribution of scores. This is important because, depending on the properties of the distribution, the average score may not be an informative statistic of central tendency.

Furthermore, what is more relevant for the parent is having information regarding not only the average result of the class where the child is, but also how the child scored in the test. This information it is not available to the parent.

As mentioned, we focus on evaluating whether parents decisions on school changed after the results of standardized tests were made public. One way to do so is to estimate the parameters of (3) with the data set of the year 1996 and of the year 2003 and to evaluate if (and where) they are significantly different. More precisely, a simple way of doing this is to use standard tools of the structural breaks literature. That is, define D_t as a binary variable that adopts the value of 1 when an observation comes from (say) the sample of the year 2003 and 0 when it comes from the sample of the year 1996. Then, use the observations of both samples and use *D* to include dummy variables that effectively change the "slope" coefficients when the observation comes from the 2003 sample:

$$\Pr\left[v_i = 1 | w_i, t\right] = F\left(\beta' w_i + \delta' D_t w_i\right). \tag{4}$$

Thus, (4) indicates that β and $\beta + \delta$ are the coefficients associated with the 1996 and 2003 samples respectively. Thus, δ measures the changes on the effects between both samples and standard tools can be used to assess if they are statistically significantly different from zero.

Prior to presenting the results, it is important to mention that the samples for the years 1996 and 2003 differ in terms of coverage. This is so, because it is easier to georeference households in the latter sample. Furthermore, some areas covered in the 2003 sample did not exist in the year 1996. Thus, while we report the results of estimating the probit model (4) using all the observations for both years, the results may not be strictly comparable as the 2003 data includes households that were not surveyed in 1996. If the households excluded in the first period were systematically different from those included (for example, because they are located in peripheral areas), the differences in the results between 1996 and 2003 may be heavily influenced by this (non-random) exclusion.

One way to deal with this problem is to conduct a quasi-matching experiment. By that we mean to say that for each household surveyed in 1996, we pick another surveyed in 2003 that shares similar characteristics, the most obvious

of which is location. That is, we match a household surveyed in 1996 with one surveyed in 2003 choosing as our first criterion that the household in 2003 is the closest to the one used in 1996. If there is more than one household that meets this criteria (*i.e*. it is in the same block), we choose the household that has similar demographic characteristics regarding the child in the household used in 1996 (namely gender and age). If there is still more than one household that meets these criteria, we choose the household of 2003 that has the most similar level of education to the mother of the household of 1996. If there is still more than one household after this filter, we choose one randomly. The main idea of using this procedure is to evaluate how a household of "similar" characteristics to the one surveyed in 1996 would behave in 2003; where in this case, "similar" refers to location, characteristics of the child, and of the mother.[7]

The columns labeled "Full Samples" of Table 2 present the results of estimating a probit model for (4) using all the observations from the 1996 and 2003 surveys. The columns labeled "Matched Samples" report the results using the sub-sample of the year 2003 that have similar characteristics to the households of the sample of 1996. The columns labeled β are identical, as they correspond to the coefficients that would be obtained using only the 1996 sample. The columns labeled δ should be interpreted as the differential effect of the characteristic in the year 2003 with respect to the year 1996. Thus, a positive (negative) value indicates that the probability of choosing the nearest school in the year 2003 increases (decreases) with respect to the year 1996.

The results are robust in terms of, in both samples, households preferring a closer school if the child is female. Consistent with the evidence of Figure 1, the older the child the lower the probability of choosing the nearest school and there is a discrete decrease in the probability of choosing the nearest school when the student attends high school (reaches the age of 15). The model also shows that the probability decreases with the income of the household and the education of the mother.

Increasing the number of schools near the household decreases the probability of attending the nearest school. As would be expected, households are more likely to choose the nearest school when its quality is higher or it is closer. Thus, as economic theory predicts, the model shows that there is indeed a trade-off between quality and distance. Consistently, the better the quality of the chosen school, the less likely it is that the student would attend the nearest school. Finally, students attending public schools are more likely to attend the nearest school.

Thus, even prior to making information regarding the quality of the schools available to the public, parents behave "as if" they knew the performance of the nearest school and the one they chose, given that both variables (along with distance and characteristics of the child and household) are relevant.

Regarding the question that motivates this paper, we find that, in general, households are more responsive to the quality of the nearest school in the 2003

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[7] Models that also include the education of the father have similar results and are available upon request. However, as there are many missing values on this variable, we report the results of using only the education of the mother.

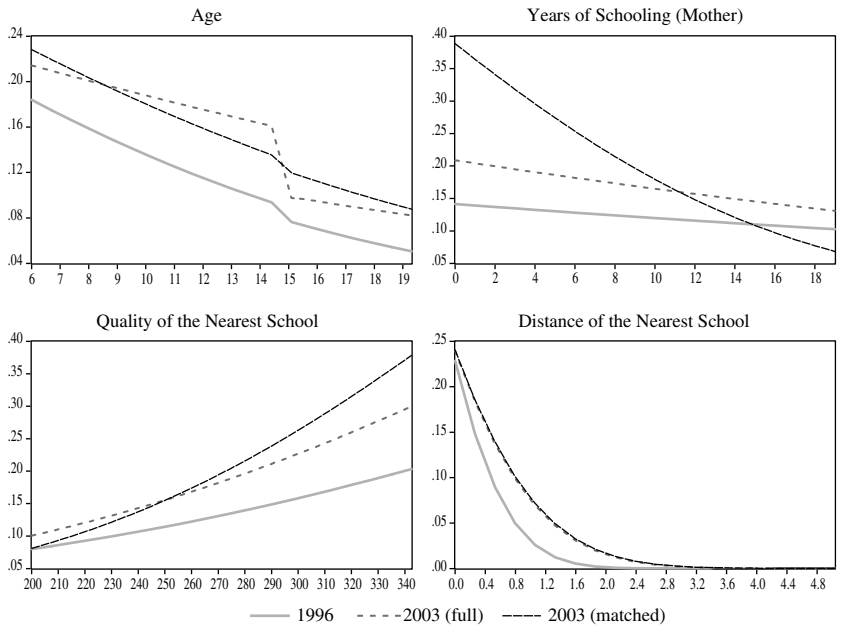
TABLE 2
PROBIT MODEL FOR CHOOSING THE NEAREST SCHOOL

Variable	Full samples		Matched samples	
	β	δ	β	δ
Constant	2.337 (0.029)	–1.317 (0.034)	2.337 (0.029)	–0.858 (0.037)
Gender (1=Woman)	0.028 (0.004)	0.006 (0.005)	0.028 (0.004)	–0.003 (0.006)
Age	–0.050 (0.001)	0.026 (0.001)	–0.050 (0.001)	0.007 (0.001)
Older than 14	–0.077 (0.009)	–0.212 (0.010)	–0.077 (0.009)	0.030 (0.011)
Schooling of mother	–0.010 (0.001)	–0.006 (0.001)	–0.010 (0.001)	–0.054 (0.001)
Log of Income per capita	–0.115 (0.003)	0.031 (0.004)	–0.115 (0.003)	0.114 (0.004)
Quality (school chosen)	–0.010 (0.001)	0.002 (0.001)	–0.010 (0.001)	–0.001 (0.000)
Quality (nearest school)	0.004 (0.001)	0.001 (0.000)	0.004 (0.001)	0.004 (0.001)
Distance (nearest school)	–1.133 (0.011)	0.406 (0.013)	–1.133 (0.011)	0.418 (0.014)
Number of schools	–0.015 (0.001)	0.006 (0.001)	–0.015 (0.001)	0.009 (0.001)
Type (1=Public school)	0.126 (0.005)	0.026 (0.006)	0.126 (0.005)	–0.081 (0.007)
	Observations = 1,692,418 (= 575,286 + **1,117,132**) LRT = 134871 [0.00] Pseudo R^2 = 0.090		Observations = 1,256,363 (= 575,286 + **681,077**) LRT = 123769 [0.00] Pseudo R^2 = 0.111	

Notes: Standard deviations in parenthesis. P-value in brackets. Observations = Total number of observations (numbers in bold refer to the number of observations of the 2003 sample).

sample. This response is greater when we consider the matching sample. On the other hand, the distance of the nearest school appears to be less important in 2003 than it was in 1996.

FIGURE 2
PROBABILITY OF CHOOSING THE NEAREST SCHOOL



Finally, Figure 2 projects the probabilities of choosing the nearest school by varying one characteristic at a time. To make these figures more comparable, we evaluate the probabilities on the same average characteristics in both years. Thus, the differential effects are due solely to the changes in the values of the parameters. As discussed above, the quality of the nearest school is a more important determinant in 2003 than in 1996. This is particularly true for the case of matched samples.

5. Concluding Remarks

Although Chile is the country where the educational voucher system is most widely used, its evaluation has been limited. In fact, many of the recommendations regarding information come from anecdotal evidence, and the more scientific evidence comes basically from surveys that suggest that people do not know the results of standardized tests. Therefore, they would not consider the quality of education at the moment of choosing a school. A natural consequence is that the system would not provide incentives for competition.

We used a data base that accurately estimates the distance between the household and school, and by comparing before and after the disclosure of the school results, we test the importance of official information in parents' decisions. More precisely, we showed that even when the results of the standardized tests taken to measure the quality of the schools were not public, parents acts "as if" they knew them by (other things being equal) preferring schools of better quality. When the results of the tests were made public, this factor became a more important determinant of school choice.

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