I would walk 500 miles (if it paid)

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Abstract

One of the pillars of the educational voucher system instituted in Chile is that competition among schools to attract students would improve the quality of the education provided. Surveys have suggested that families rank the distance of the school from their home as the most important factor for choosing a school. They also suggest that parents largely ignore the results of standardized tests. We use a novel data set which includes measures of the distance between homes and schools to analyze the determinants of school choice. Economic theory suggests, and the estimations confirm, that parents consider quality of the school and its location when choosing schools. The paper quantifies the relevant trade-offs.

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1 Introduction

Chile introduced a series of pioneering reforms in the last quarter of the past century. One of them was the introduction, in 1981, of the educational voucher system. Public schools were transferred to municipalities, thus decentralizing primary and secondary education. Since then, school administration has been carried out by both public (municipalities) and private providers (referred to as administrators) that receive most of their funds from State subsidies and, in some cases, from fees paid by parents. The state subsidy (voucher) is given according to the number of students who attend classes. The decision of which school to attend is left to the parents.

The system has achieved almost universal coverage, and impressive results in terms of increasing the number of schools and their infrastructure. However, by international comparisons, its results in terms of quality have been rather disappointing.

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 (with small additional payments made by parents); and iii) Private: Administered by private institutions and financed exclusively by payments made by parents.

In terms of enrollment, the share of students attending private schools has remain virtually unchanged since 1981, but the enrollment in subsidized schools administered privately has increased steadily; thus, decreasing the share of enrollment in public schools (Paredes and Pinto, forthcoming).

The voucher system was designed assuming that the parents' right to choose their children's school would cause competition among the schools and improve the quality of the education provided. In principle, parents would reject low quality schools, which would have a declining number of students, and eventually would be eliminated from the market.

This line of reasoning has been questioned based on the results of surveys to parents conducted by a public institution which is in charge of conducting the standardized test to measure the quality of education (SIMCE, *Sistema de Medición de la Calidad de la Enseñanza*). Contrary to similar international surveys (Public Policy Forum 1998), less than one percent of the Chilean parents surveyed said that the results

of the standardized tests were the most important factor in choosing their children's school. The most frequent response for the most important factor behind the choice of a school was its proximity to the house (25.2%). These results have made some analysts conclude that the main concern upon choosing a school is location and not quality (e.g. Elacqua and Fabrega, 2004; Carnoy, 1998; Carnoy and McEwan, 2000). If correct, it is stated that this evidence would undermine a crucial feature that is necessary for fostering quality through the voucher system.

Several studies seek to determine the factors behind school choice in Chile (e.g. Vial, 1998; Sapelli and Vial, 2000; Sapelli and Torche, 2002; Paredes and Pinto, 2008; and references therein). Others have focused on determining the effect of school competition on educational results (e.g. Hoxby, 1994, 2000, 2005; Hsieh and Urquiola, 2003; Rothstein, 2004, 2005; Bayer and McMillan, 2005; Lavy, 2005; Sandstrom and Bergstrom, 2005; Gallego, 2006; Benguria and Paredes, 2008). Although not unanimously, most of these studies suggest that parents tend to choose subsidized and private schools over public schools as their income increases, that subsidized and private schools tend to perform better than public schools in standardized tests, and that competition tends to improve quality. None of these studies explicitly considers the location of the schools as a factor determining the choice of the parents.

Examples of studies that incorporate distance of the school from the household as a factor relevant to the choice of school are Gertler and Glewwe (1989; Peru), Alderman et al. (2001; Pakistan), Hastings et al (2006; United States), and Gallego and Hernando (2008; Chile). They tend to conclude that both distance and quality are relevant factors.

This paper differs from the ones listed above in two dimensions: It constructs a data-set that includes more precise measures of distance than the ones used by Gallego and Hernando (2008), and it uses a novel specification for addressing the choice of school that incorporates distance and quality. It evaluates how important is distance (as compared to other factors) by focusing on how parents actually choose schools and not on results of surveys that merely enunciate factors that they consider important.

The paper is organized as follows: Section 2 describes the data-set and presents some descriptive statistics. Section 3 discusses the econometric framework used to evaluate the determinants of the choice of school and reports the results. Finally, Section 5 concludes.

2 The Data

Parents consider several factors when choosing a school for their children. Clearly distance from the household is one of them. Measuring distance from the household to the schools is not easy as information of both the location of the household and the school that a child attends to is required.

Administrative records for students that take the standardized tests provide information of the results of their tests, characteristics of the school, and socio-economic characteristics of the household. However, as the address of the household can not be recovered from these records, measures of distance can not be obtained.

A different route is taken in this paper. CASEN is a household survey taken by the Ministry of Planning of Chile on a regular basis. This survey provides detailed information of socio-economic characteristics of Chilean households. In the survey, it is possible to identify the school that each student was attending at the time. 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. Regretfully this cannot be done, as the survey does not provide a precise address for the household surveyed. However, the survey does contain information of the block in which the household is located.

These blocks can be georeferenced using digital maps provided by the companies DICTUC and Mapcity, which cover the entire city of Santiago.[1] At the same time, using the School Directory 2003 of the Ministry of Education (MINEDUC), which includes all of the schools' addresses, it is possible to georeference 2,310 of the 2,312 schools that exist in the 34 counties of Santiago.

With the georeference of the block of the household and of the schools, it is possible to estimate the Euclidean distance between the centroid of the block and each

[1] 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.

of the 2,310 schools. We consider this as the distance between the household and each school.[2]

Table 1 provides some descriptive statistics of the students reported as attending school in CASEN 2003 that lived in Santiago. The sample is evenly split between males and females. Parents of students whose children attend to private and subsidized schools have more years of schooling (on average) than those whose children attend municipal (public) schools.[3] The same can be said in terms of income per capita. Of all the students in the sample, 53% attended subsidized schools, almost 34% public schools, and 13% private schools.

Table 1

Descriptive Statistics by Type of School Administration (Averages)

Variable	Total	Municipal	Subsidized	Private
Share of women (%)	49.3	48.8	49.5	49.7
Years of schooling (father)	12.6	10.9	12.5	16.8
Years of schooling (mother)	12.0	10.5	12.1	15.3
Income per capita (US$ per month)	228.9	123.7	188.3	656.2
Share of students (%)	100.0	33.6	53.1	13.3

Table 2 provides descriptive statistics (averages) of the distance, quality, and availability of different types of schools. Only 17.6% of the students attend to the nearest school. The share of students that attend public schools that also go to the nearest school is of 24.4%. These shares decrease to 15.5% and 8.9% for students of subsidized and private schools respectively. If we consider schools of the same type, 36.3% of the students of public schools choose the nearest public school, and 24.3%

[2] Gallego and Hernando (2008) use a cruder measure distance, as they define it as the Euclidean distance between the centroid of the county (*comuna*) of the household and the school that the child attended.

[3] Information of years of schooling of the father is available only for 78% of the sample.

(13.8%) of the students that attend subsidized (private) schools go the nearest school of the same type. Thus, choosing the school nearest to the household is not as prevalent as the survey suggests.

Table 2

Distance and Quality by Type of School Administration (Averages)

Variable	Total	Municipal	Subsidized	Private
Distance of school chosen	2.90	2.57	2.78	4.22
Quality of school chosen	256	240	257	295
Distance of nearest school	0.52	0.46	0.55	0.53
Quality of nearest school	248	240	246	272
Distance of nearest municipal school	0.90	0.67	0.93	1.34
Quality of nearest municipal school	232	229	231	246
Distance of nearest subsidized school	0.78	0.71	0.73	1.15
Quality of nearest subsidized school	254	250	253	266
Distance of nearest private school	1.92	2.08	2.07	0.95
Quality of nearest private school	286	285	287	287
Number of schools (2 kms radius)	20.8	21.1	21.3	18.2
Quality of schools (2 kms radius)	255	252	253	270
Number of municipal schools (2 kms radius)	4.4	5.2	4.4	2.2
Quality of municipal schools (2 kms radius)	241	239	240	254
Number of subsidized schools (2 kms radius)	13.6	14.0	15.3	6.3
Quality of subsidized schools (2 kms radius)	252	250	252	263
Number of private schools (2 kms radius)	2.8	1.9	1.6	9.8
Quality of private schools (2 kms radius)	286	285	286	287
Share of students that attend to:				
nearest school	17.6	24.4	15.5	8.9
nearest school of the same type	26.9	36.3	24.3	13.8

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

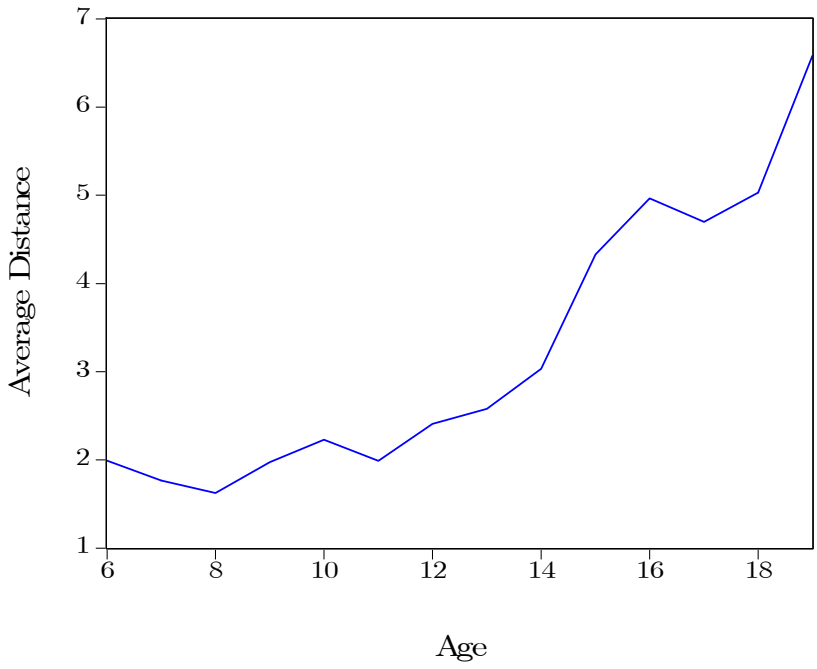
Table 2 also shows that the average distance between the household and the school that the student attends is of 2.9 kilometers. Students of public schools attend

schools closer to the household than students that attend subsidized or private schools. Nevertheless, on average, irrespective of the type of school, the distance between the household and the nearest school is of approximately 0.5 kilometers. In terms of quality, as measured by average scores of the school on standardized tests, private schools tend to perform better than subsidized schools, and these do better than public schools.

As Table 1 shows, students of private schools have, on average, higher per capita income. Thus, as expected, private schools tend to be more concentrated in areas in which students effectively go to private schools. However, households with students attending public and subsidized schools are not clustered in areas with different number of schools of each type. Furthermore, the average quality of the surrounding schools of each type is almost identical regardless of the type of school chosen by the parents.

Figure 1

Average Distance (in meters) by Age

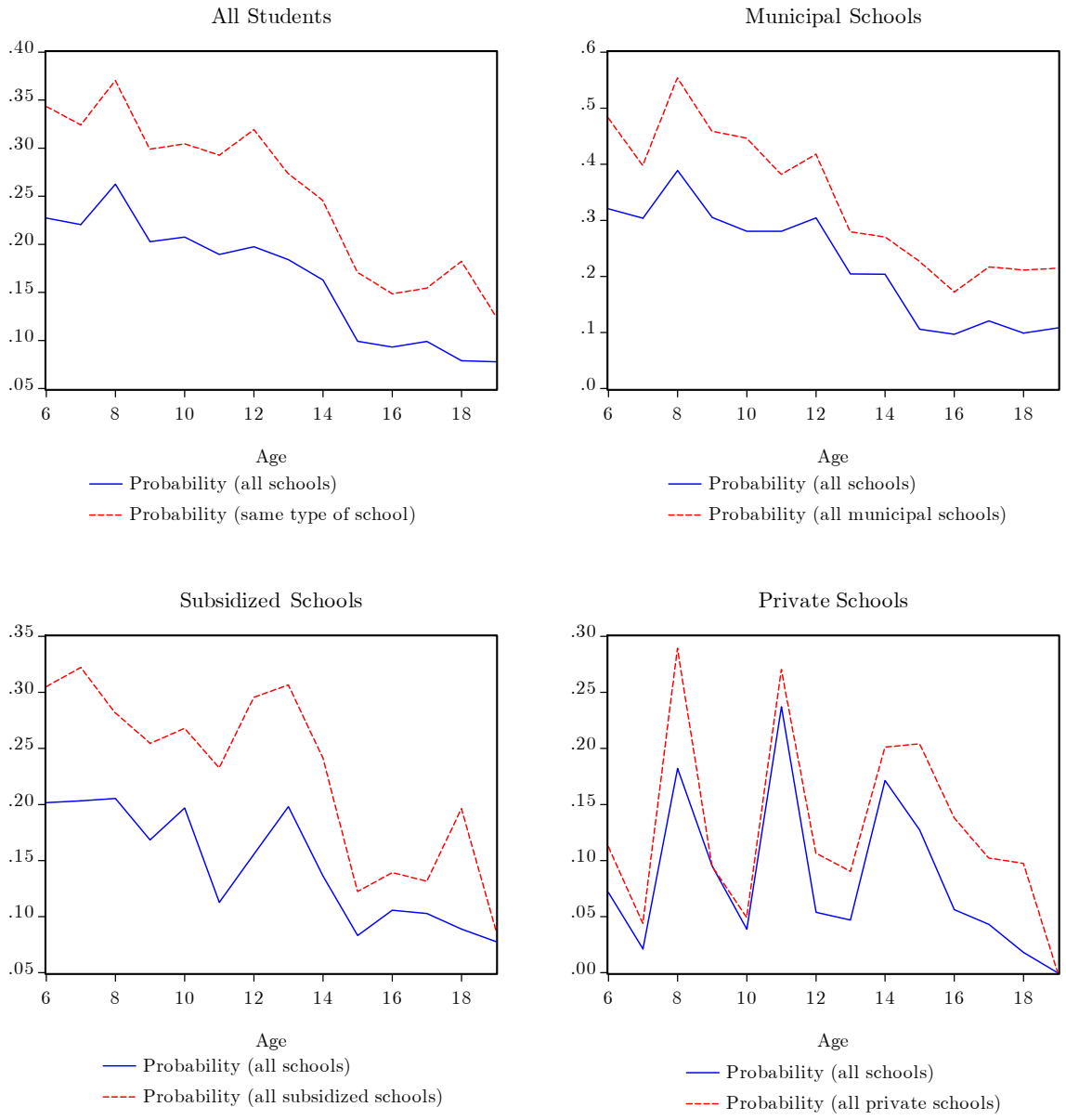


The average distance between the household and the school attended varies with the age of the child (Figure 1). The schools chosen are nearer to the household in primary education and an almost discrete jump occurs when the student goes to high school (around age 15). This feature is related to both, that there are fewer high schools

than schools with primary education, and that as age increases, the cost of traveling diminishes with age as students are more autonomous.

Figure 2

Probability of Choosing the Nearest School by Age



The same pattern is observed when considering the frequency of cases in which students choose the nearest school. Broadly speaking, irrespective of the type of school attended, the probability of choosing the nearest school is decreasing in the age of the

student. Again, particularly in the case of students attending public and subsidized schools, there is an important decline in this probability when the student reaches high school. Finally, students of municipal schools choose the nearest school more often.

This section described the new data base constructed and some stylized facts regarding the distance between the household and the school chosen. The next section uses this information to evaluate the determinants of the choice of school, including distance.

3 The Empirical 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 age of the child, the education of the parents, gender of the child, income of the household, 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.

Given (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. The data base consists of 2,310 identified schools and 7479 students. Thus, in principle, more than 17 million distances would be needed to estimate the model.

This paper considers a different approach to evaluate the determinants of the choice of school and the relevance of distance. 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:

$$\Pr[v_i = 1 | w_i] = F(\beta' w_i),$$

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 the estimated.

The vector of potential determinants considers:

- Individual or household characteristics: Gender, age, education of the father and the mother, and (log of the) income per capita of the household.
- Characteristics of the nearest school: Quality of the school (average result in standardized tests), distance of the nearest school from the household.
- Characteristics of the school chosen: Quality of the school (average result in standardized tests), type of school (municipal, subsidized, private).[4]

[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.

- Competition: Number of schools in a 2 kilometers radius from the household.

Table 3

Probit Model for Choosing the Nearest School

Variable	Estimate	Marginal Effect
Constant	1.020 (0.0185)	
Gender (1=Woman)	0.034 (0.0029)	0.008 (0.0012)
Age	-0.024 (0.0006)	-0.006 (0.0010)
Older than 14	-0.288 (0.0056)	-0.068 (0.0017)
Schooling of mother	-0.016 (0.0004)	-0.004 (0.0010)
Log of Income per capita	-0.084 (0.0020)	-0.020 (0.0011)
Quality (school chosen)	-0.008 (0.0001)	-0.002 (0.0009)
Quality (nearest school)	0.005 (0.0001)	0.001 (0.0009)
Distance (nearest school)	-0.727 (0.006)	-0.171 (0.0018)
Number of schools	-0.009 (0.0002)	-0.002 (0.0010)
Type (1=Public school)	0.152 (0.0034)	0.036 (0.0013)
Observations=1117132	LogL=83413 [0.00]	Pseudo R^2=0.081

Notes: Standard deviations in parenthesis. P-value in brackets.

Table 3 presents the results of estimating a probit model for this choice.[5] The results show that households would (marginally) prefer a closer school of the child if a woman. Consistent with the evidence of Figure 1, the model also shows that the older the child the lower the probability of choosing the nearest school and that 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.[6]

[5] Marginal effects are computed as the average of marginal effects for each observation.

[6] 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.

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 that parents consider. Consistently, the more quality has the school chosen, the less likely is that the student would attend the nearest school. Finally, as shown in Figure 2, students attending public schools are more likely to attend the nearest school. Apart from the discrete variables (high school or municipal schools), the marginal effects show that distance and quality are also economically relevant factors for choosing schools.

Table 4

Probit Model for Choosing the Nearest School (Public Schools)

Variable	Estimate	Marginal Effect
Constant	3.589 (0.0432)	
Gender (1=Woman)	0.075 (0.0046)	0.023 (0.0018)
Age	-0.043 (0.0007)	-0.013 (0.0010)
Schooling of mother	-0.006 (0.0007)	-0.002 (0.0010)
Log of Income per capita	-0.067 (0.0034)	-0.021 (0.0015)
Quality (school chosen)	-0.024 (0.0002)	-0.007 (0.0009)
Quality (nearest school)	0.014 (0.0002)	0.004 (0.0009)
Distance (nearest school)	-0.718 (0.0060)	-0.223 (0.0023)
Number of school	-0.050 (0.0007)	-0.016 (0.0010)
Observations=371184	LogL=78150 [0.00]	Pseudo R^2=0.162

Notes: Standard deviations in parenthesis. P-value in brackets.

The model is estimated considering all the students. It may be argued that parents that choose (say) a public school are less likely to consider a private school as a close substitute. Tables 4, 5, and 6 present the results of estimating probit models in which the samples are split between types of schools (public, subsidized and private) and consider the characteristics of the nearest school and the number of schools of the same type in a 2 kilometers radius as the only valid alternatives.

Table 5

Probit Model for Choosing the Nearest School (Subsidized Schools)

Variable	Estimate	Marginal Effect
Constant	0.632 (0.0274)	
Gender (1=Woman)	0.068 (0.0037)	0.020 (0.0016)
Age	-0.008 (0.0008)	-0.002 (0.0011)
Older than 14	-0.486 (0.0070)	-0.140 (0.0024)
Schooling of mother	-0.018 (0.0006)	-0.005 (0.0011)
Log of Income per capita	-0.085 (0.0026)	-0.025 (0.0014)
Quality (school chosen)	-0.005 (0.0001)	-0.002 (0.0011)
Quality (nearest school)	0.006 (0.0001)	0.002 (0.0011)
Distance (nearest school)	-0.686 (0.0053)	-0.197 (0.0020)
Number of school	-0.019 (0.0002)	-0.005 (0.0011)
Observations=591641	LogL=46556 [0.00]	Pseudo R^2=0.072

Notes: Standard deviations in parenthesis. P-value in brackets.

Table 6

Probit Model for Choosing the Nearest School (Private Schools)

Variable	Estimate	Marginal Effect
Constant	0.296 (0.0610)	
Older than 14	-0.189 (0.0097)	-0.039 (0.0031)
Schooling of mother	-0.047 (0.0012)	-0.010 (0.0024)
Log of Income per capita	-0.154 (0.0051)	-0.032 (0.0026)
Quality (school chosen)	-0.003 (0.0002)	-0.001 (0.0024)
Quality (nearest school)	0.005 (0.0002)	0.001 (0.0024)
Distance (nearest school)	-0.205 (0.0048)	-0.043 (0.0026)
Number of school	-0.004 (0.0005)	-0.001 (0.0024)
Observations=154307	LogL=7314 [0.00]	Pseudo R^2=0.059

Notes: Standard deviations in parenthesis. P-value in brackets.

Regardless of the type of school, the results are broadly consistent with what was presented in Table 3. However, there are also some differences. The number of surrounding schools and the distance of the nearest school are less important for choosing the nearest school for private and subsidized schools than for public schools. The same can be said regarding the quality of the chosen and nearest school. However, income and education are more important factors for choosing school in private and subsidized schools than in public schools.

The panels of Figure 3 show how changes in different factors affect the probability of choosing the nearest school of each type.[7] The quality of the nearest school is more important in municipal school than in the others. The same can be said in terms of distance up to approximately 1.5 kilometers. Although the probability of choosing the nearest school decreases with income for all the students, it does so at a slower pace for students of public schools. Having more options available near the house is also more important for students of municipal and subsidized schools.

Table 7 uses the marginal effects obtained in Tables 4-6 to derive the rates of substitution between quality of the nearest school and other factors. The first row measures the willingness to pay for one additional point in the score of the standardized test of the nearest school. According to the results, quality is highly valued by the families attending to any school. This is particularly clear when we consider that SIMCE scores has a standard deviation of 50, and that despite an increase in 400% of the budget devoted to education in the period 1990-2008, no change in the average Simce is observed. The last row shows how much (on average) would a student by willing to "walk" for an additional point in the average score of the nearest school.

[7] The probabilities were evaluated in the means of the independent variables corresponding to each sample. Then the variable to be considered was modified.

Figure 3

Probability of Choosing the Nearest School by Type of School

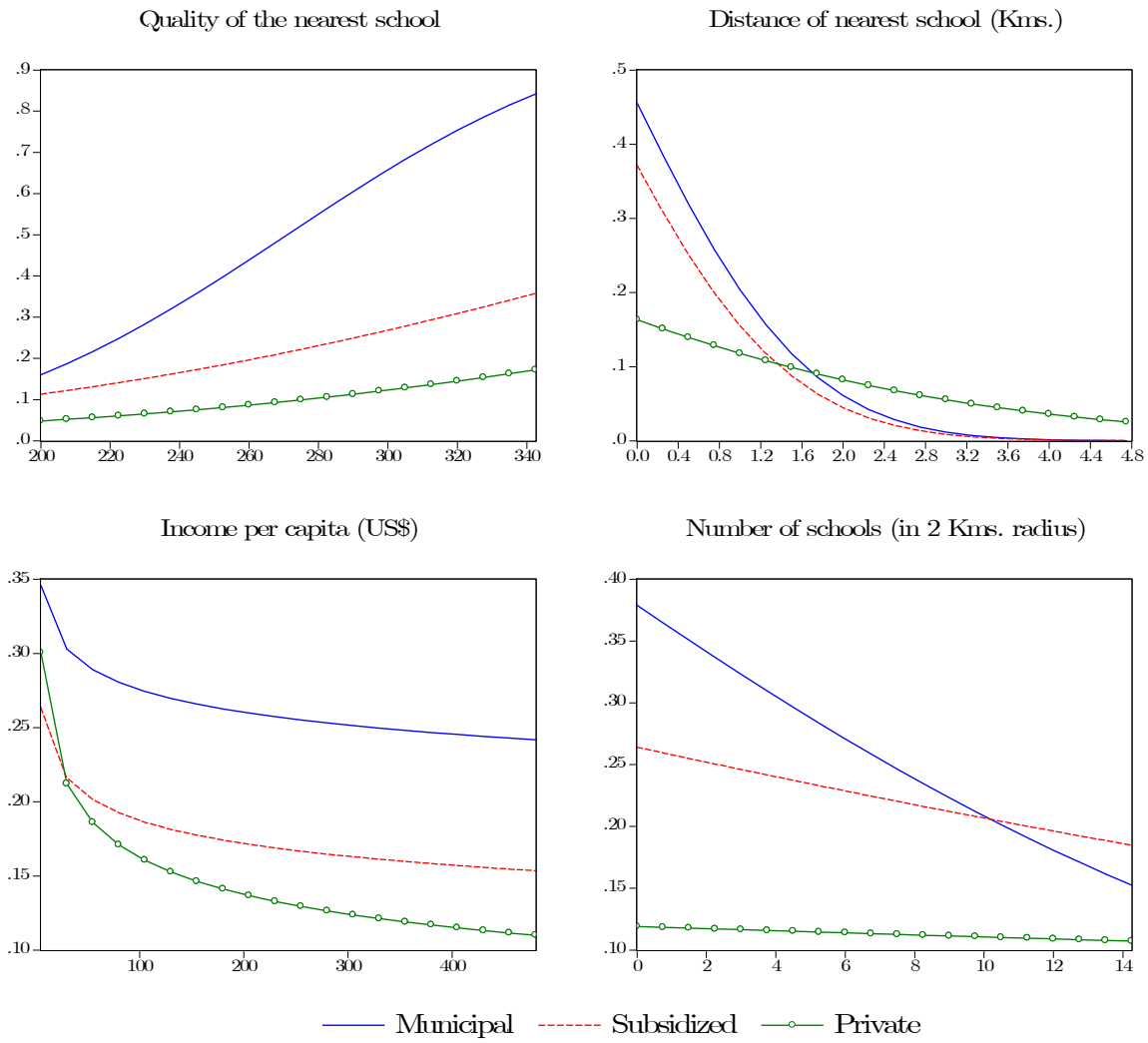


Table 7

Marginal Rates of Substitution between Different Factors

Change	Municipal	Subsidized	Private
US$ x 1 point	0.81	0.93	0.97
Meters x 1 point	20	9	25

4 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 come from anecdotal evidence including surveys such as the one that suggests that people do not consider the quality of education at the moment of choosing a school and consequently that the system does not provide incentives for competition.

We used a new data base that accurately estimate the distance between the household and school to test how important are location and quality when choosing schools. We show that both dimensions are relevant determinants of this choice and quantify the implied trade-offs.

References

Alderman, H., Orazem, P., and Paterno, E. (2001), "School Quality, School Cost, and the Public/Private School Choices of Low-Income Households in Pakistan," *Journal of Human Resources* 36, 304-326.

Bayer, P. and R. McMillan (2005), "Choice and Competition in Local Education Markets," *Manuscript*, Yale University and University of Toronto.

Benguria, F. and R. Paredes (2008), "Competition and School Performance: The Case of the Chilean Vouchers," *Working Paper*, Department of Industrial Engineering, Universidad Católica de Chile.

Carnoy, M. (1998). "National Voucher Plans in Chile and Sweden: Did Privatization Make for Better Education?," *Comparative Education Review* 42(3), 309-337.

Carnoy, M. and P. McEwan (2000), "Competition and Sorting in Chile's Voucher System," *Manuscript*, Stanford University.

Elacqua, G. and Fabrega R. (2004), "El Consumidor de La Educación: El Actor Olvidado de La Libre Elección de Colegios en Chile," PREAL, Universidad Adolfo Ibáñez, Santiago, Chile.

Gallego, F. (2006) "Voucher-School Competition, Incentives, and Outcomes: Evidence from Chile" *Manuscript*, Catholic University of Chile.

Gallego, F. and A. Hernando (2008) "School Choice in Chile: Looking at the Demand Side", *Manuscript*, Catholic University of Chile.

Gertler, P. and P. Glewwe. (1989), "The Willingness to Pay for Education in Developing Countries: Evidence from Rural Peru." *Journal of Public Economics* 42, 251-275.

Hastings, J., T. Kane, and D. Staiger. (2006), "Parental Preferences and School Competition: Evidence from a Public School Choice Program," *Working Paper* 11805, NBER.

Hoxby, C. (1994), "Do Private Schools Provide Competition for Public Schools?," *Working Paper* 4978, NBER.

Hoxby, C. (2000), "Does Competition Among Public Schools Benefit Students and Taxpayers?," *American Economic Review* 90(5), 1209-1238.

Hoxby, C. (2005), "Competition Among Public Schools: A Reply to Rothstein (2004)," *Working Paper* 11216, NBER.

Hsieh, C. and M. Urquiola (2003), "When Schools Compete, How Do They Compete? An Assesment of Chile's Nationwide School Voucher Program," *Manuscript* Berkeley University and Columbia University.

Lavy, V. (2005), "From Forced Busing to Free Choice in Public Schools: Individual and General Equilibrium Effects," *Manuscript*, Hebrew University.

McEwan, P. J., and M. Carnoy (2000), "The Effectiveness and Efficiency of Private Schools in Chile's Voucher System," *Educational Evaluation and Policy Analysis* 22(3), 213-239.

Paredes, R. and J. I. Pinto (forthcoming), "¿Se Está Acabando la Educación Pública en Chile?," *Estudios de Economía.*

Public Policy Forum (1998), *School Choice Accountability: A consensus of views in Ohio and Wisconsin.* Milwaukee. Public Policy Forum.

Rothstein, J. (2004), "Good Principals or Good Peers: Parental Valuation of School Characteristics, Tiebout Equilibrium, and the Incentive Effects of Competition among Jurisdictions," *Working Paper* 10666, NBER.

Rothstein, J. (2005), "Does Competition Among Public Schools Benefit Students and Taxpayers? A Comment on Hoxby (2000)," *Working Paper* 11215, NBER.

Sandstrom, F. and F. Bergstrom (2005), "School Vouchers in Practice: Competition Will Not Hurt You," *Journal of Public Economics* 89, 351-380.

Sapelli, C and A. Torche (2002), "Subsidios al Alumno o a la Escuela: Efectos sobre la Elección de Colegios," *Cuadernos de Economía* 117, 175-202.

Sapelli, C. and B. Vial (2002) "The Performance of Private and Public Schools in the Chilean Voucher System," *Cuadernos de Economía* 118, 423-54.

Vial B. (1998) "Financiamiento Compartido de la Educación," *Cuadernos de Economía* 106, 325-42.