ROCKWOOL Foundation Berlin
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DISCUSSION PAPER SERIES 018/26

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www.rfberlin.com JANUARY 2026

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JEL Codes: C4, H4, I20, I24

Keywords: Discrete choice experiment, willingness to pay, special needs education, school quality

Recommended Citation: Maria A. Cattaneo, Stefan Wolter, Thea Zöllner (2026): Paying for peers? Parental willingness to pay for school composition and quality in Switzerland. RFBerlin Discussion Paper No. 018/26

Imprint

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Paying for peers? Parental willingness to pay for school composition and quality in Switzerland

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Abstract

Switzerland features strong socio-economic segregation and no formal school choice, making residential relocation the only channel through which parents can access preferred schools. Identifying how parents value school attributes is therefore essential but challenging, given that choices bundle multiple characteristics. We address this by conducting a discrete choice experiment with nearly 2,700 parents with school-aged children, allowing us to estimate willingness to pay (WTP) for individual and combined school attributes. We find that a substantial minority of parents value academic quality so highly that their preferences are effectively price-insensitive. Among price-sensitive parents, academic quality remains central, but they also exhibit positive WTP for schools with fewer students with special educational needs and fewer non-native-speaking peers. Interaction effects are strong: WTP for reductions in special-needs peers is highest if the school is among the academically strongest. Accounting for attribute interactions further reveals marked heterogeneity, with parents clustering into seven distinct preference types.

Keywords: discrete choice experiment, willingness to pay, special needs education, school quality

JEL classification: C4, H4, I20, I24

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1. Introduction

School choice is characterized by a set of factors that shape parents' preferences over schools, which has been a central topic in the economics of education for several decades. The issue attracts sustained interest because parental decisions determine not only which school their children attend, but also the allocation of students across schools, the resulting peer composition, and the competitive environment in which schools operate. These mechanisms are of broad policy relevance: parental sorting can amplify or attenuate residential segregation, redistribute learning environments, and affect the incentives schools face to improve quality. A clearer understanding of parental preferences, therefore, informs both the design of school assignment systems and broader policies that shape educational opportunity (for an extensive recent overview of this literature, see Abdulkadiroğlu and Andersson, 2023).

Existing research has examined school choice from multiple angles. One major strand investigates which school attributes parents value most, focusing particularly on the potential trade-off or interplay between academic quality and peer composition. Many empirical studies conclude that parents prioritize academic performance indicators, such as test scores or value-added measures, when selecting schools (Campos, 2024; Burgess et al., 2015). However, other studies find that peer characteristics, including the socioeconomic background, parental education, or migration status of students, play an equally important or even dominant role (Abdulkadiroğlu et al., 2020; Ruijs and Oosterbeek, 2019). Despite extensive empirical work, the relative importance of academic quality and peer composition remains ambiguous and appears to vary across institutional contexts. What the literature consistently establishes, however, is that parental preferences are highly heterogeneous (e.g., Borghans et al., 2015). This heterogeneity has first-order implications for the distributional consequences of

assignment mechanisms, the extent of sorting, and the equity-efficiency trade-offs inherent in school choice policies.

A second, complementary literature in public economics evaluates parents' willingness to pay for access to preferred schools through residential choices (for an overview article, see e.g. Black and Machin, 2011). Using mostly quasi-experimental variation along school district boundaries, these studies estimate capitalization effects of school quality into housing prices and rents (Black, 1999; Bayer et al., 2007; Gibbons and Machin, 2008; Fack and Grenet, 2010; Gibbons et al., 2013). This research demonstrates that parents often incur substantial financial costs to locate in areas that grant access to higher-quality public schools. Thus, even in systems that formally restrict school choice, housing markets create de facto choice opportunities and barriers, resulting in spatial sorting driven by both preferences and financial constraints.

The institutional context of Switzerland provides a natural setting in which to connect these two strands of research. Roughly 95% of Swiss students attend public schools, and, except for limited cases at the lower-secondary level, there is no system of open school choice. Access to schools is determined almost entirely by residential location. As a result, parents who seek a particular school must express their preferences through their choice of housing. This institutional feature implies that school preferences, financial constraints, and willingness to pay for access to specific school characteristics are tightly intertwined. It also highlights a central identification challenge: in the absence of free choice, revealed preferences must be inferred indirectly, often through costly and imperfect housing market signals. A stated preference framework can, therefore, provide valuable complementary evidence by isolating parental valuations of school attributes from confounding residential amenities and local public goods.

This paper leverages this institutional setting to examine how parents value academic quality and peer characteristics when choosing schools. We conducted a discrete choice

experiment in winter 2024/25 with a nationally representative sample of 2,672 parents in Switzerland. The experiment presents respondents with realistic school choice scenarios that mimic the trade-offs families face when considering residential moves to access different schools. In each scenario, we vary three school attributes: (i) the academic quality of the school, and (ii) two peer characteristics that have become central to public and political debates in Switzerland and other OECD countries, namely the share of non-native speakers and the share of students with special educational needs, as well as (iii) the rental price of an apartment located near the preferred school and the rental prices we use in our experiment varied around the respondents' current rental price. Over the past two decades, Switzerland has experienced a substantial rise in the share of students who are non-native speakers of the national language and in the share of students with special educational needs. These developments are frequently portrayed in public discourse as potential threats to educational quality or as explanations for declining student performance, including recent trends in PISA or national assessments. By incorporating these attributes into the experiment, we directly examine how parents value changes in peer composition that are at the heart of contemporary policy debates.

Our analyses show that parents, on average, are willing to accept substantial increases in monthly housing costs in exchange for lower shares of non-native speakers or students with special needs but most of all for higher school quality: at the median, moving from a school in the lowest to the highest quartile of the cantonal ranking is valued at CHF 487.2[1] in additional monthly housing costs (CHF 326.6 for a move to an average-ranked school).A reduction in the share of students with special needs from 30% to 10% (20%) is valued at CHF 154.2 (CHF 113.3). Similarly, a 10-percentage point decrease in the share of foreign-language speakers is

[1] In relative magnitude, this would be equivalent to about 25% of the average monthly rental costs for an apartment, or about 7% of a median monthly income of an employee in Switzerland.

associated with a median WTP of CHF 65.7. We further document marked preference heterogeneity, both in the continuous distribution of marginal utilities and in discrete latent classes that differ in price sensitivity and in the relative importance attached to school ranking versus the share of students with special needs.

Our study makes three main contributions. First, we provide new evidence on how parents trade off academic quality against peer characteristics, using experimentally varied school attributes within a representative national sample of real parents. Second, we are, to our knowledge, the first to include the share of peers with special needs as one of the peer characteristics in an experimental school choice study.[2] Third, we quantify substantial heterogeneity in parental valuations, shedding light on how preferences vary across socioeconomic groups, an issue that has important implications for sorting and equity in residentially based assignment systems.

The remainder of the paper is organized as follows: In the next section, we outline the experimental setup for preference elicitation. Section 3 describes the collected data and methods used, specifically the mixed logit and latent class logit approaches to estimate marginal utilities of the different school and housing cost attributes as well as the WTP for the school attributes. Section 4 presents the results of the empirical analysis, and Section 5 concludes.

[2] There is one survey study from Germany (Paseka and Schwab, 2020) showing that parents attitudes towards the inclusion of students with special needs is rather positive if these students have physical or learning disabilities but neutral when the students showed behavioral disorders or mental disabilities. The study is not directly comparable to our study as the focus in the German study was on general and specific attitudes towards inclusion, whereas our study focuses on the effect of inclusive schools on school choice.

2. Experimental setup

2.1 Discrete choice experiment

Discrete choice experiments (DCEs) are widely used in economics to elicit individuals' preferences across diverse domains (e.g., Ryan et al., 2008; Shang & Chandra, 2023; Bliemer & Rose, 2024). As a stated-preference method, DCEs build on random utility maximization (McFadden, 1974) and Lancaster's theory of consumer choice (Lancaster, 1966). They assume that the utility of a good or service can be decomposed into the utility derived from its attributes, which must be known and evaluated by respondents. Because people value attributes differently, some bundles are more attractive than others; accordingly, DCEs present hypothetical scenarios with two or more alternatives and require respondents to make choices that entail explicit trade-offs among the attributes given. In this paper, we leverage the methodology of DCEs to study how parents value specific school attributes when deciding on a school for their own child.

The DCE methodology addresses two major challenges associated with using realized choice data to elicit parental preferences for school characteristics. First, identifying a child's factual alternatives to the school they actually attend is difficult, as school choice in Switzerland is largely determined by residential address, particularly for primary schools. Second, correlations between observable and unobservable school characteristics can bias results based on realized choice data. In contrast, our DCE allows us to observe parents' repeated choices between two hypothetical schools, each defined by a distinct set of attributes of interest. By explicitly specifying that the schools differ only in these attributes, the design helps mitigate the risk of omitted variable bias.

Moreover, our approach of asking respondents indirectly about their preferences for a new home domicile, which is then associated with certain school characteristics, addresses several further issues that may arise when asking respondents directly about their WTP for

school attributes. First, we can present all respondents with comparable alternatives to choose from, which—as under laboratory conditions—differ only in the attributes we have defined. Second, by asking respondents who have children attending compulsory school, thus respondents who are concerned about the well-being of their child, we ask them to make choices that, would benefit a real person – their child. Third, by using the current monthly housing costs as a monetary attribute in the DCE, we use a real-life reference point instead of a hypothetical price that may be difficult to interpret or understand for respondents.

Despite the growing popularity of DCEs, reservations still persist regarding the external validity of stated preference methods, notably concerning biases stemming from their hypothetical nature (e.g., Loomis, 2011; Menapace & Raffaelli, 2020). In fact, meta-analyses have found evidence for a 'hypothetical bias' in studies directly asking individuals about their WTP for public goods, such as natural resource conservation, leading to an overestimation of the WTP (e.g., List & Gallet, 2001; Murphy et al., 2005). Our approach differs from these studies in terms of methodology and the good being evaluated. First, by conducting a DCE, we indirectly estimate parents' WTP for school attributes instead of directly asking them to assign monetary values to them, which should reduce the issue of hypothetical bias (OECD, 2018). Second, we focus on school choices, and parents typically have already reflected on their child's school, providing real-life reference points (Datta, 2019).

Notably, in health markets, where such reference points are also available to individuals, studies find that DCEs produce reasonable predictions of actual health-related behaviors (Mohammadi et al., 2017; Quaife et al., 2018). In addition, Mas and Pallais (2017) conducted both a DCE and a field experiment, finding that preferences for job characteristics, as revealed in their DCE, closely mirror those observed in the field experiment, indicating that well-designed survey-based choice experiments yield responses that well approximate real market decisions. Similarly, Wiswall and Zafar (2017) found that individuals' education and job preferences, as

estimated in a DCE, strongly correlated with their later actual choices. Third, the primary aim of our study is to capture parents' subjective valuation of a change in school-related attributes, which is based on relative instead of absolute preference statements, further reducing the influence of hypothetical bias as long as the different attributes are affected similarly. Nevertheless, our DCE remains hypothetical rather than reflecting actual choices parents might have to, or be able to, make in real life.

2.2 School attributes and levels

The attributes describing the alternatives, along with the levels capturing relevant variations, were selected based on previous literature addressing parental school choice.[3] Moreover, we consulted experts in the field of compulsory education, including academics and practitioners, seeking their input on the selection of school attributes and their levels. The final list and wording of the attributes and levels were developed in consultation with a focus group with a total of 14 participants (see also below), where we tested whether the terms used were clear and could be easily understood by people not working in the field of education. Given the objective of our study, we consider the four attributes shown in Table 1 to be the most relevant for our analysis.

The attributes selected for the analysis, percentage of non-native speakers, school ranking within the canton, and the proportion of children with special needs, were also chosen because these topics have received considerable media attention in recent years and are likely to be salient to

[3] The discrete choice experiment design inherently constrains the number of characteristics and attribute levels that can be varied within the experiment. Regarding peer- or school-related characteristics, we restricted ourselves to two criteria that are particularly salient in public and political debate, both in Switzerland and internationally. The first is the share of foreign-language students, an issue that has gained prominence in light of increasing proportions of students with a migration background in many countries. The second is the proportion of students with special needs, a topic that has grown in importance as most countries have begun implementing the inclusive-school mandates set out in the UN Convention on the Rights of Persons with Disabilities. Other relevant criteria certainly exist, for instance, school violence (see, e.g., Rachkovski, 2025 analyzing, among others, with a discrete choice experiment, how information on school satisfaction and violence levels affect parental school choice) but these were not included because they play a comparatively minor role in the catalogue of political demands in Swiss education policy and are therefore likely to be of lesser importance to parents, at least relative to the selected characteristics.

parents. School ranking was included as an indicator of school quality, particularly in light of the ÜGK (*Überprüfung der Grundkompetenzen*), a standardized assessment used to verify the attainment of basic competencies. The public dissemination of these results has generated substantial discussion and may influence parental evaluations of school performance. There is, of course, a body of literature on how information about school quality affects parents' school choice when performance gains, i.e., value-added measures, are used instead of absolute achievement levels (e.g., Ainsworth et al., 2023).

Table 1 *School attributes and levels*

Attribute	**Levels**
Monthly housing costs (CHF)[4]	+10% current housing costs
	Current housing costs
	-10% current housing costs
School position in cantonal ranking	Highest quartile
	Average
	Lowest quartile
Proportion of foreign-language speakers	10%
	20%
	30%
Proportion of students with special needs	10%
	20%
	30%

In our experiment, we deliberately refrain from providing value-added information because such data are not available in Switzerland, and respondents would automatically perceive this type of information as unrealistic. The proportion of non-native speakers was selected because Switzerland is a country characterized by high immigration from diverse regions, and the linguistic and cultural composition of school populations is frequently highlighted in public discourse. Finally, the proportion of children with special educational needs

[4] 1 CHF = approximately 1.2 US$ or 1.06 Euro.

was incorporated to reflect ongoing national debates on inclusive schooling and the ways in which schools integrate children requiring additional support.

These themes, being prominent in public and media narratives, are likely to shape parents' perceptions and thus constitute relevant attributes for the analysis. Additional potential attributes used to describe the school closest to the new residence were excluded, as they would have greatly increased the number of choice sets without significantly contributing to answering our main research question. Given that previous studies on school choice have highlighted the importance of the distance to school as an important choice factor, we explicitly instructed respondents during the survey to assume that school distance from the residence would be almost identical for all options.

Regarding the levels of the attributes, the monthly housing costs were derived from a previous question about the actual housing costs of the respondents. The levels in the choice sets could take three values: the actual housing cost, actual cost plus 10%, and actual cost minus 10%. The levels for the school ranking (SR) in cantonal standardized tests were set as: highest quartile, average, and lowest quartile. The proportion of foreign-language speakers in schools vary greatly among cantons and municipalities. Therefore, the attribute levels for the proportion of foreign-language pupils were selected to reflect the mid-range typically observed in Swiss schools, which is likely to appear realistic to most respondents (10%, 20%, and 30%). The levels for the proportion of school peers with special needs (SN) draw on Balestra et al. (2022), who find that peers' achievement is affected once the proportion of SN students exceeds 15–20%. Accordingly, we chose levels below, near, and above this threshold (10%, 20%, and 30%).

2.3 Choice set selection

The final design consisted of 24 choice sets, split into three blocks, with each block containing eight choice sets, each with two alternatives. With four attributes and three levels each, the total number of possible choice sets in the DCE was 81 (3^4). To reduce this number to 24 choice sets

while efficiently capturing the key trade-offs of our study, we use a D-efficient block randomized design (Bliemer & Rose, 2009) using the software Ngene.

Figure 1 *Example of a choice set*

Imagine that you need to move to a new residence for professional reasons. You have explored the new location and found several apartments that you like equally. However, these apartments differ in monthly cost and are associated with different schools based on their location. You have therefore also looked into the schools your child would attend depending on the apartment chosen.

In the following, you will be presented with two apartments and asked to select the one that best suits you. Please assume that the distance to all schools is similar.[5]

Which of the two apartments would you choose?

	Apartment A	**Apartment B**
Housing costs (monthly rent)	2000	2200
School position in cantonal standardized tests in comparison to other schools	Highest quartile	Highest quartile
Proportion of foreign-language speakers	10%	20%
Proportion of students with special needs	30%	30%
Your choice	☐	☐

[5] Most studies in situations of free school choice have found that geographical proximity is an important determinant for school choice. However, because Switzerland does not have school choice, we did not include the distance to school as one of the choice criteria. Students are assigned to the school geographically closest to their place of residence and therefore, parents who nevertheless wish to exercise some form of school choice can do so only by selecting their residential location accordingly. Our experimental setup is therefore framed in precisely this way. However, to prevent respondents from taking the *distance to the school* into account when responding, we still added an explicit clarification in the question wording.

The number of choice sets and blocks allows to reduce the cognitive burden on respondents while preserving the efficiency of estimation of preference parameters across respondents (Louviere & Woodworth, 1983). Participants were randomly assigned to answer one of the blocks. The order in which choice sets were presented to respondents within each block was also randomized. An example of a choice set is shown in Figure 1.

3. Characteristics of the data and hypotheses

The DCE described in the previous section was fielded as part of the sixth *Survey of Public Opinion on Education*, which was conducted in Switzerland between December 2024 and January 2025 by *Intervista AG*, a private market research institute, on behalf of the *Centre for Research in the Economics of Education* at the University of Bern. The analysis sample contains information on a total of 2,672 Swiss residents from all three main language regions (German, French, and Italian) who have at least one child still attending compulsory education. The sample is based on a random draw from the *Intervista* online panel, with over 120,000 actively recruited persons who are compensated for their participation.

After confirming that the questions were understood as intended, the questionnaire was further tested by *Intervista AG* using a pilot sample of 115 respondents. Data from the pilot were analyzed using descriptive statistics and conditional logit models according to the planned specification, and the results were as expected, so no changes were made to the questionnaire following the pilot. Additionally, *Intervista AG* monitored all survey responses for inattentiveness or randomly answered questions and removed such individuals from the panel to ensure data quality and integrity.

Table 2 shows summary statistics of our sample. Of the 2,672 respondents, the majority is from the German-speaking area of Switzerland (67%), followed by the French- and Italian-

speaking regions (25% and 7%, respectively). The mean age in the sample is 45 years, and 69% of the sample have completed a tertiary degree. 77% are Swiss natives, 23% are first- or second-generation immigrants. The majority of respondents lives in urban areas, with an income bracket between CHF 6,000 and 12,000, and in homeownership. Whereas the geographical distribution of respondents is representative for the whole of the country, respondents with higher education are overrepresented at the expense of people with compulsory education only. However, as the scenario in the experiment of moving to another place due to job changes is a more realistic scenario for people with higher education, the sample reflects the choices of those parents in the country that are mobile and, therefore, have real school choices. The overrepresentation of parents with higher education is also a potential explanation for the high share of children for which the respondents indicated that their school performance is in the upper quartile of the distribution of their classmates.

We consider demographic and socio-economic factors as possible preference shifters, i.e., the WTP for school attributes, such as the proportion of SN students, likely depends on individuals' background characteristics. We will quantify this heterogeneity in two ways: first, by estimating models that explicitly allow for heterogenous preference parameters, and second, by quantifying the association of individual-specific WTP estimates, derived from mixed logit models, with respondents' background characteristics. Moreover, we consider characteristics of the respondents' children as shaping preferences for school attributes, e.g., the child's gender and age but also school performance as perceived by the parent. A child may be affected differently by their relative position in class, although the direction of effects is ambiguous because higher-performing children may have better coping mechanisms, but they may also be affected more in terms of performance if in-class dynamics change with a higher proportion of SN children or children not speaking the local language.

Table 2 *Descriptive statistics of respondent and child characteristics*

	Total	***Block 1***	***Block 2***	***Block 3***	***p-value***
Male	0.524	*0.516*	*0.529*	*0.527*	*0.837*
Age (in years)	45.0 (7.2)	*45.2 (7.3)*	*45.1 (7.3)*	*44.6 (6.9)*	*0.171*
Educational background					*0.395*
Compulsory education	0.016	*0.013*	*0.014*	*0.022*	
Secondary education	0.295	*0.284*	*0.293*	*0.306*	
Tertiary education	0.689	*0.702*	*0.693*	*0.672*	
Swiss native	0.773	*0.770*	*0.784*	*0.765*	*0.500*
Monthly gross household income					*0.141*
CHF 6,000 or less	0.149	*0.153*	*0.127*	*0.167*	
CHF 6,001 to CHF 12,000	0.601	*0.579*	*0.624*	*0.599*	
CHF 12,001 or more	0.250	*0.267*	*0.249*	*0.234*	
Language region					*0.998*
German-speaking region	0.677	*0.674*	*0.680*	*0.675*	
French-speaking region	0.252	*0.254*	*0.250*	*0.252*	
Italian-speaking region	0.071	*0.071*	*0.070*	*0.073*	
Urban (vs. rural)	0.600	*0.608*	*0.606*	*0.586*	*0.564*
Tenant (vs. homeowner)	0.461	*0.459*	*0.446*	*0.478*	*0.412*
Monthly housing costs (in CHF)	1,935 (1,056)	*1,970 (1,067)*	*1,897 (1,102)*	*1,938 (992)*	*0.360*
Political orientation					*0.582*
Right	0.278	*0.284*	*0.261*	*0.287*	
Center	0.441	*0.428*	*0.462*	*0.433*	
Left	0.281	*0.288*	*0.276*	*0.280*	
Locus of control (index 7-49)	18.3 (6.7)	*18.2 (6.7)*	*18.2 (6.5)*	*18.6 (6.9)*	*0.409*
Child: Male	0.501	*0.494*	*0.481*	*0.529*	*0.110*
Child: Age	10.4 (3.4)	*10.6 (3.4)*	*10.4 (37.5)*	*10.2 (3.4)*	*0.067*
Child: Subjective performance					*0.584*
Upper quartile	0.525	*0.514*	*0.546*	*0.517*	
Average	0.439	*0.452*	*0.421*	*0.443*	
Lower quartile	0.036	*0.033*	*0.033*	*0.040*	
Number of observations	2,672	*900*	*876*	*896*	

Notes: Reported numbers are mean values and standard deviations (in brackets) of respondent and child characteristics. Monthly gross household income is available for N=2,210 observations; all other variables are based on the full sample. Locus of control is constructed as in Cobb-Clark and Schurer (2013), with higher values indicating stronger external control. The child's performance is assessed subjectively by the respondent based on the question "How would you rate the school performance of your child (in terms of grades, school reports, or certificates) compared to their classmates?". Column "Total" is for the overall sample, columns "Block X" are for the three blocks in the block-randomized design of the DCE. The last column reports *p*-values of tests for the null hypothesis that the means or proportions across the three blocks are the same (F-tests for continuous and Chi-squared tests for categorical variables).

This leads to the following hypotheses we aim to test: *First*, ceteris paribus, parents prefer (i) schools with a higher position in the cantonal ranking, (ii) schools with a lower proportion of students with special needs, and (iii) schools with a lower proportion of foreign-language speakers, and they dislike higher housing costs. However, we expect considerable heterogeneity in parents' preferences for both school attributes and housing costs, which our analysis seeks to quantify.

Second, conditional on being price-sensitive (i.e., having a negative marginal utility of housing costs), we expect parents to display a positive willingness to pay (WTP) for improvements in key school attributes. In particular, we hypothesize that: (i) parents will accept higher housing costs for schools in a higher cantonal ranking quartile; (ii) they are willing to pay for a lower proportion of students with SN; and (iii) on average, they are willing to pay for a lower proportion of foreign-language speakers.

Third, the WTP for school attributes varies systematically with parents' socio-economic and demographic characteristics. We hypothesize that (i) higher-income households have a higher WTP, (ii) parents with a migration background differ from Swiss natives in their WTP for school composition, in particular for the share of foreign-language speakers, (iii) WTP for the share of foreign-language speakers varies across language regions, and (iv) political orientation is associated with WTP for school composition, with right-leaning parents placing relatively higher value on academically strong and more homogeneous peer groups than left-leaning parents.

Fourth, preferences for the proportion of students with SN depend on the school's academic ranking. We expect a positive interaction between school quality and SN share: parents place a higher marginal value, and thus a higher WTP, on reducing the share of SN students when the school is ranked in the highest quartile than when it is ranked average or in the lowest quartile. Conversely, the effect could also operate in the opposite direction. If school quality is already high, parents may consider the SN share to be less relevant, whereas in lower-ranked schools the presence of SN students might play a comparatively larger role in parental evaluations. Parents who actively seek top-ranked schools are typically more performance-

oriented, so they may perceive a high share of SN students as a greater risk to academic outcomes in that context than in lower-ranked schools. In marginal-utility terms, a high-ranking school is a valuable asset, and reducing the SN share is seen as a way to "protect" or enhance that asset, making such reductions especially valuable at the top. Moreover, parents may believe that negative peer effects from high SN shares become particularly salient in academically demanding environments, so a given reduction in SN share is viewed as more beneficial in top-ranked schools. Finally, there may also be sorting and self-selection argument, implying that more advantaged, academically focused families are overrepresented in top-ranked schools, and this group is both more willing to pay for high quality and more sensitive to potential disruptions, reinforcing the complementarity between high ranking and low SN share.

Fifth, parental preferences for school attributes and housing costs are not only continuously heterogeneous but also structured into distinct latent classes, shaped by qualitatively different constraints and values. Following the above arguments, we find that (i) there exist both price-insensitive and price-sensitive classes, and (ii) among both, some parents prioritize school ranking, others prioritize the SN share, or the share of foreign-language speakers, and others give relatively little weight to school attributes compared to housing costs due to budget constraints or prioritization of housing affordability.

The analysis is based on McFadden's (1974) random utility model. The utility U that respondent i derives from choosing alternative j in choice set s is given by:

$$U_{isj} = CP_{isj} + e_{isj} \qquad i = 1,\ldots,N;\ s = 1,\ldots,7;\ j = A,B \qquad (1)$$

where CP_{isj} represents the systematic component of the overall utility, and e_{isj} is a random term. We assume the individual chooses that alternative, A or B, if it delivers a higher utility than the other alternative in the choice set. Assuming e_{isj} to be independently extreme value type-I distributed, the probability of choosing j takes the logit form:

$$\text{Prob}(y_{is} = j|CP_{is}) = \frac{\exp(CP_{isj})}{\sum_{l=A,B}\exp(CP_{isl})} \qquad (2)$$

where y_{is} denotes the choice observed for individual i in choice set s.

4. Results

4.1 Mixed logit models and individual-specific preferences

Because preferences for school attributes are likely to differ across individuals, we specified a random parameter model with a linear-additive functional form:

$$CP_{isj} = \alpha_j + X_{isj}'\delta_i \quad (3)$$

where X_{isj} is the vector of the four attributes describing alternative j for individual i in choice set s, i.e., the school's ranking, the share of foreign-language speakers, the share of students with SN, and the housing costs as monetary attribute. The parameter vector δ_i is the main interest of our study as it describes the individuals' preferences for the school and housing cost attributes, while α_j is an alternative-specific intercept included as default parameter. We operationalized equation (3) by using a mixed logit approach (e.g., McFadden & Train, 2000; Hole & Kolstad, 2012), i.e., parameters are assumed random following a joint normal distribution, and we estimated the model using simulated maximum likelihood methods.

While the preference parameters δ_i delineate the individuals' marginal utilities of the various attributes, it is often straightforward to interpret these parameters in monetary values and as a marginal rate of substitution with a monetary reference attribute. This helps convey individuals' WTP per unit of each attribute. Derived from contingent valuation theory, the WTP assesses how much consumers are willing to pay on average for a change in a specific attribute, keeping their level of utility the same. The WTP can be positive or negative depending on whether individuals derive a utility or a disutility from the given change of the school attribute. We estimate the model in the preference space and then compute the WTP by dividing individual-level predictions of the marginal utility of a school attribute by the marginal utility of the housing cost attribute, following the method suggested in Hole and Kolstad (2012); see

also Train & Weeks (2005) and Scarpa et al. (2008). It should be noted that the model estimated in the preference space has a better fit than the model estimated in the WTP space (log-likelihood value of -11,890 in the baseline specification vs. -12,467 for the same model in the WTP space), so in the following, we will only discuss the results of the former.

Table 3 summarizes the results of the mixed logit regression with a baseline specification that includes indicators for the attributes describing the ranking of the school and the share of SN students, and the proportion of foreign-language speakers and the housing cost attribute as linear functions, and an extended specification with interaction terms of the school ranking and share of SN students attributes (see Section 4.4). The results indicate that parents, on average, have a strong preference for better ranked schools and for schools with a lower share of SN students, as indicated by the estimated mean coefficients in the random parameter distributions. They also prefer schools with a lower share of foreign-language speakers. At the same time, they have, on average, a negative marginal utility of an increase in housing costs.

The mixed logit results indicate the presence of substantial preference heterogeneity, as the standard deviations (SD) in the distributions for all but one parameter are estimated significantly different from zero. Figure 2 shows the individual-level predictions of the marginal utilities for the different school attributes and the housing cost attribute. There are several important insights gained from these distributions. First, the marginal utilities for a better ranked school or for a lower share of SN students are almost all positive, which confirms our hypothesis of parents valuing the quality of teaching without possible disrupting influences. Second, the spread in the distribution is larger for the more distant comparisons, i.e., comparing the highest with the lowest ranked schools and a 10% share of SN students with a 30% share, which may be explained by stronger opinions that come with more extreme comparisons. Third, the marginal utility of a higher share of foreign-language speakers is widespread covering both

positive and negative marginal utilities. This result may be explained by the high share of the population in Switzerland with a migration background (41% in 2024, Swiss Federal Statistical Office[6]). It may be perceived as a valuable attribute by parents to have such a diversity in the school, e.g., by enriching perspectives, facilitating integration, or benefitting from specialized school offers. In addition, in certain high-income areas, foreign-language speakers may predominantly be the children of highly educated international professionals. In these contexts, parents may not view the presence of foreign-language speakers as a disadvantage; on the contrary, they may see it as an asset that enhances the learning environment. However, it may also be perceived as a negative attribute, e.g., by influencing class performance, student-student and student-teacher interaction, or cultural tensions.

Fourth, the marginal utility of cost (MUC) shown by the monetary cost attribute is negative for a majority of parents, consistent with standard consumer theory assuming housing as a normal good, *ceteris paribus*. However, the MUC is close to zero or even positive for some parents. A zero-MUC indicates price-insensitive parents, who form their preferences for the school attributes, but they do not make these preferences dependent on housing cost. In Table 4, we report descriptive statistics of individuals grouped by their price-sensitivity, with price-insensitive parents defined as having an estimated MUC in the range [-0.05, 0.05], which is approximately a 99%-confidence interval around a zero-MUC. Individuals in this range are, on average, older, better educated, and from higher income groups compared to individuals with a negative MUC. Similarly, individuals with a positive MUC, i.e., who are more likely to choose an apartment with a higher living cost given the other attributes in the DCE, are from higher socio-economic groups, which may be indicative that these individuals take housing prices also

[6] https://www.bfs.admin.ch/bfs/en/home/statistics/population/migration-integration/by-migration-status.html

as a signal for other positive factors associated with higher living costs, e.g., quality of living, infrastructure, or socio-demographic characteristics of the neighborhood.

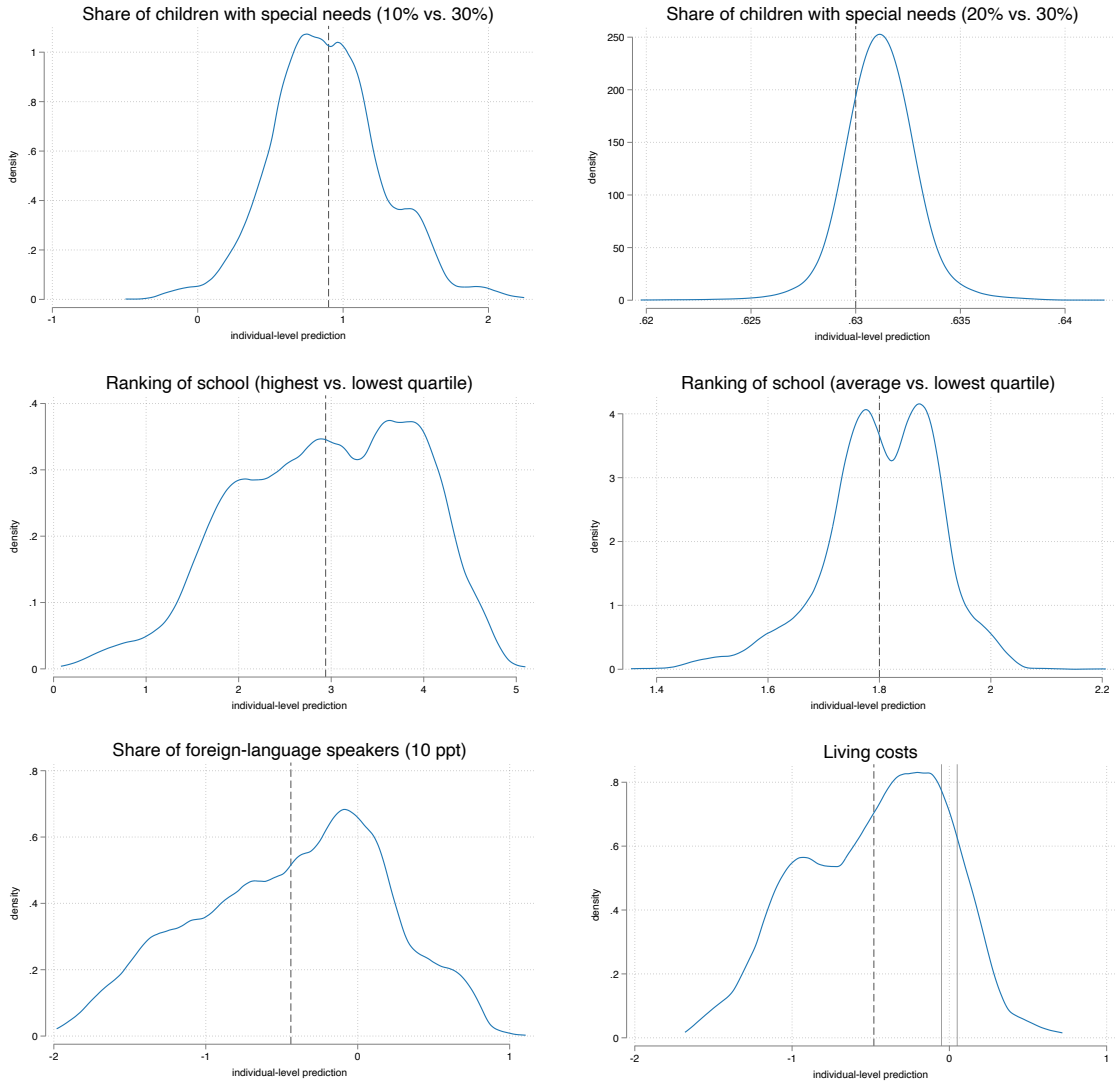
Table 3 *Mixed logit estimates of preferences for school attributes*

	Baseline specification		Extended specification	
	Mean	SD	Mean	SD
Proportion of students with special needs (ref. 30%)				
10%	0.896***	0.817***	0.771***	0.876***
	(0.042)	(0.064)	(0.060)	(0.064)
20%	0.631***	0.021	0.680***	0.018
	(0.035)	(0.078)	(0.067)	(0.083)
School position in cantonal ranking (ref. lowest quartile)				
Highest quartile	2.936***	1.514***	2.686***	1.478***
	(0.073)	(0.080)	(0.088)	(0.079)
Average	1.804***	0.392***	1.850***	0.367***
	(0.048)	(0.087)	(0.066)	(0.093)
Proportion of foreign-language speakers (10 ppt)	-0.438***	0.940***	-0.472***	0.988***
	(0.031)	(0.043)	(0.033)	(0.044)
Monthly housing costs (in CHF 100)	-0.477***	0.583***	-0.488***	0.593***
	(0.017)	(0.020)	(0.018)	(0.020)
SN 10% x highest quartile			0.623***	0.328
			(0.089)	(0.174)
SN 20% x highest quartile			0.193*	0.124
			(0.090)	(0.119)
SN 10% x average			-0.024	0.197
			(0.096)	(0.145)
SN 20% x average			-0.059	0.003
			(0.089)	(0.082)
Number of individuals	2,672		2,672	
Number of observations	42,752		42,752	

Notes: For both models (baseline and extended specification), the outcome is a dummy variable whether a specific option (A or B) is chosen. Reported numbers are estimated mean coefficients and estimated coefficients for the standard deviation in a random parameter mixed logit model. Specifications with the variables as shown in the table. Linear specification chosen for the proportion of foreign-language speakers due to better fit with interpretation in 10 percentage points (ppt) changes. Each specification includes a deterministic parameter for the chosen alternative. In both models, the estimated coefficient of this parameter is close to zero and statistically insignificant, which is expected if individuals do not show strategic behavior and tend to select more often the first (or second) option. Cluster-adjusted standard errors are shown in parentheses. Significance levels: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Since the majority of parents (80.1%) are characterized by a negative MUC, and a minority (19.9%) by a non-negative MUC, we will focus on the former in the following analysis (Sections 4.2 and 4.3) of the determinants of the WTP for the school attributes. Moreover, the WTP calculation only makes sense for price-sensitive individuals because otherwise the WTP would tend to infinity.

Figure 2 *Distribution of individual-level estimates of parameters for school attributes*



Notes: The graph shows the distributions of the individual-level estimates of the parameters in the mixed logit using the method suggested in Hole and Kolstad (2012) based on the baseline specification in Table 3. Dashed line indicates estimated mean parameter in the mixed logit models. For monthly living costs (bottom right graph), solid lines mark "exclusion range" with a marginal utility [-0.05,0.05].

Table 4 *Group comparison of individuals with different marginal utility of costs*

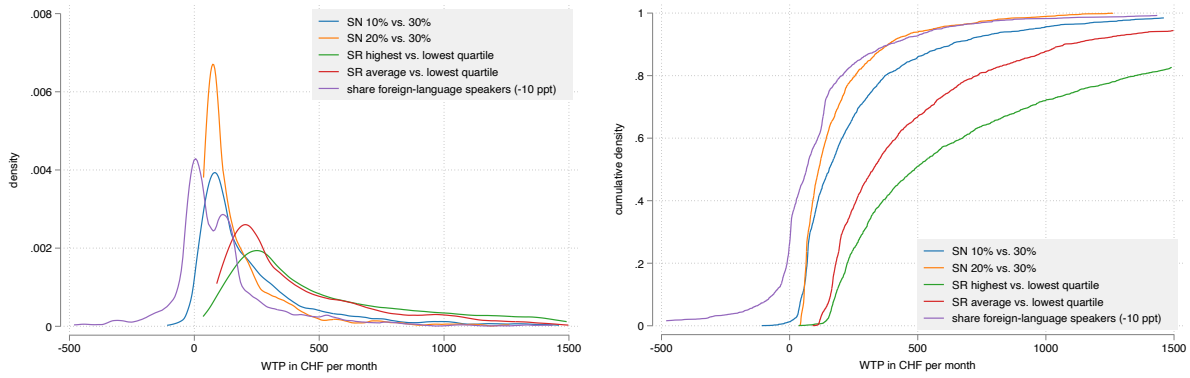
	Negative MUC	**About zero MUC**	**Positive MUC**	***p-value***
Male	0.509	0.529	0.622	*<0.001*
Age (in years)	44.6 (7.1)	46.4 (7.0)	46.7 (7.6)	*<0.001*
Educational background				*<0.001*
Compulsory education	0.017	0.000	0.023	
Secondary education	0.308	0.236	0.241	
Tertiary education	0.674	0.764	0.736	
Swiss native	0.780	0.733	0.749	*0.161*
Monthly gross household income				*<0.001*
CHF 6,000 or less	0.168	0.043	0.093	
CHF 6,001 to CHF 12,000	0.612	0.600	0.522	
CHF 12,001 or more	0.220	0.357	0.385	
Language region				*0.006*
German-speaking region	0.660	0.738	0.745	
French-speaking region	0.264	0.209	0.205	
Italian-speaking region	0.077	0.053	0.046	
Urban (vs. rural)	0.594	0.622	0.625	*0.452*
Tenant (vs. homeowner)	0.482	0.369	0.381	*<0.001*
Monthly housing costs (in CHF)	1,872 (953)	2,174 (1,473)	2,205 (1,274)	*<0.001*
Political orientation				*<0.001*
Right	0.260	0.347	0.352	
Center	0.440	0.427	0.453	
Left	0.300	0.227	0.195	
Locus of control (index 7-49)	18.6 (6.8)	16.6 (6.3)	17.8 (6.6)	*<0.001*
Child: Male	0.496	0.529	0.518	*0.538*
Child: Age	10.3 (3.5)	10.6 (3.4)	10.6 (3.3)	*0.110*
Child: Subjective performance				*<0.001*
Upper quartile	0.506	0.609	0.599	
Average	0.454	0.378	0.381	
Lower quartile	0.040	0.013	0.020	
Number of observations	2,140 (80.1%)	225 (8.4%)	307 (11.5%)	

Notes: Reported numbers are mean values and standard deviations (in brackets) of respondent and child characteristics. Monthly gross household is available for N=1,778 observations in column 1, N=185 in column 2, and N=247 in column 3, respectively; all other variables are based on the number of observations as indicated at the table bottom. See also Table 2 for additional notes on the construction of variables. The last column reports *p*-values of tests for the null hypothesis that the means or proportions across the three groups (negative, about zero, and positive MUC) are the same (F-tests for continuous and Chi-squared tests for categorical variables).

4.2 Willingness-to-pay for school attributes

Using the individual-level estimates of the marginal utilities of the different school attributes and the housing cost attribute, we can calculate the WTP for the school attributes for parents with a negative MUC. Figure 3 summarizes the WTP distributions, in the left graph as kernel density estimates and in the right panel as cumulative distribution functions. The results indicate that almost all parents have a positive WTP for most school attributes, especially lower shares of SN students and better ranked schools are positively valued, with the WTP inferred for the school quality ranking attributes on average larger than for the share of SN students attributes. The median WTP for a school in the highest vs. the lowest school quality quartile is CHF 487.2 in monthly housing costs (25.2% relative to the mean housing costs), for an average ranked school vs. the lowest quartile it is CHF 326.6 (16.9% relative to the mean housing costs). For the share of SN students, a 20 percentage points (ppt) reduction from 30% to 10% is valued at CHF 154.2 in monthly housing costs at the median, a reduction from 30% to 20% is valued CHF 113.3. Consistent with the results shown in Figure 2, the median WTP for a 10 ppt reduction in foreign-language speakers is CHF 65.7 in monthly housing costs.

Figure 3 *Distribution of individual-level estimates of WTP for school attributes*



Notes: The graph shows the distributions (density on the left and cumulative density on the right) of the individual-level estimates of the WTP in the mixed logit model using the method suggested in Hole and Kolstad (2012) based on the baseline specification in Table 3. SN = proportion of students with special needs; SR = school position in cantonal ranking. The lines for the share of foreign-language speakers show the (cumulative) density of the WTP for a 10 ppt *reduction* in the share.

To complement Figure 3, we investigate whether parents' background characteristics can explain the observed variation in the WTP. Table 5 summarizes the results of five linear regression models using each of the individual-level WTP estimates as a dependent variable. The results indicate that gender, age, and educational background as well as the child's characteristics do not explain the variation in WTPs. However, as expected, income, nationality, and for the share of foreign-language speakers also the language region can explain at least part of the variation in WTP for school attributes. Regarding income, we find that higher income groups have a higher willingness- and likely also means-to-pay for a better ranked school and for a school with a lower proportion of SN students. Swiss natives seem to have less strong preferences for better ranked schools, as their WTP for such school is significantly lower than the WTP of non-Swiss parents. Similarly, parents from the German-speaking region of Switzerland have a higher WTP for a lower proportion of foreign-language speakers in the school than parents from the French- or Italian-speaking regions of Switzerland. Another interesting result is the significant variation in WTP across individuals with different political preferences. Although not entirely surprising, such effects would be difficult to identify in observed school-choice behavior, as opposed to a stated-preference experiment, because political preferences of parents are typically unobserved in the former case. The strong effects of political orientation, which in turn correlate with gender, age, and educational attainment, also suggest that, when political preferences are unknown, there is a substantial risk of omitted-variable bias in estimates of the effects of other parental characteristics.

It should be noted again that this analysis is based on price-sensitive parents with a negative marginal utility of housing costs, as estimated from the mixed logit model. This group of parents only describes a subset of the population, based on which we analyzed the WTP for the different school attributes. Based on these results, we deem two extensions of particular

relevance. First, the results in Table 5 suggest that preferences for the school ranking and for the proportion of SN students are closely related, with common determinants such as parental income and nationality. For this reason, we also examine whether there is a direct interaction between preferences for these two school attributes (Section 4.3). Second, Tables 4 and 5 indicate a complex pattern in which different groups of parents exhibit stronger or weaker preferences for certain attributes, including housing costs. Therefore, we also aim to explore in greater detail this clustering in preferences using a latent class modeling strategy (Section 4.4).

Table 5 *Factors associated with willingness-to-pay for school attributes*

	Proportion of students with special needs (ref. 30%)		School position in cantonal ranking (ref. lowest quartile)		Proportion of foreign-language speakers
	10%	20%	Highest quartile	Average	(-10 ppt)
Male	-15.68	-15.52	-86.08	-47.54	12.84
	(19.25)	(9.800)	(54.68)	(28.32)	(16.28)
Age	0.893	0.746	5.145	2.342	0.158
	(1.399)	(0.731)	(4.024)	(2.137)	(1.145)
Educational background (ref. Compulsory education)					
Secondary education	-53.47	-10.25	-1.977	-19.12	22.71
	(83.61)	(39.60)	(188.6)	(108.1)	(63.31)
Tertiary education	-51.08	-13.78	20.86	-29.13	3.063
	(84.51)	(39.97)	(191.9)	(108.9)	(63.45)
Swiss native	-48.91*	-34.69**	-233.9***	-95.75**	31.91
	(23.08)	(12.38)	(70.63)	(35.41)	(18.68)
Monthly gross income (ref. CHF 6,000 or less)					
CHF 6,001 to CHF 12,000	59.95**	36.64***	227.8***	106.0***	-11.71
	(20.14)	(10.92)	(58.98)	(31.25)	(19.58)
CHF 12,001 or more	150.6***	94.62***	547.7***	273.8***	9.526
	(32.14)	(16.44)	(87.73)	(47.39)	(28.23)
Language region (ref. German-speaking region)					
French-speaking region	-9.764	-12.74	-35.18	-34.47	-80.89***
	(20.51)	(10.62)	(61.00)	(30.63)	(15.03)
Italian-speaking region	-25.28	-30.48*	-144.7	-91.63*	-78.50***
	(31.64)	(14.74)	(83.46)	(41.90)	(18.55)
Urban (vs. rural)	-10.42	-4.026	10.55	-10.94	-35.40*
	(18.22)	(9.150)	(49.61)	(26.31)	(15.27)
Tenant (vs. homeowner)	-35.98	-22.12*	-165.7**	-60.42*	-7.822
	(19.52)	(9.357)	(51.38)	(27.04)	(14.22)
Political orientation (ref. Center)					
Right	65.72**	23.49*	67.48	64.62*	59.03**
	(20.68)	(10.90)	(61.49)	(31.08)	(18.93)
Left	3.083	-6.889	-49.63	-16.60	-58.61***
	(18.37)	(10.13)	(57.49)	(29.44)	(15.14)

Locus of control	-1.681	-0.710	-8.073*	-1.910	-0.511
	(1.202)	(0.622)	(3.285)	(1.800)	(1.098)
Child: Male	-26.39	-10.96	-59.28	-29.22	-18.78
	(16.14)	(8.558)	(48.30)	(24.64)	(13.78)
Child: Age	-0.696	-0.636	-8.729	-2.153	0.767
	(2.822)	(1.444)	(8.122)	(4.211)	(2.214)
Child: Subjective performance (ref. average)					
Upper quartile	21.02	6.049	95.44	15.33	-17.94
	(16.35)	(8.860)	(49.56)	(25.43)	(14.70)
Lower quartile	-18.19	10.48	85.00	35.80	16.66
	(38.74)	(25.75)	(151.5)	(76.52)	(37.43)
Constant	308.1**	187.2***	920.8***	513.6***	141.8
	(109.8)	(53.72)	(266.7)	(149.9)	(89.76)
Number of observations	1,777	1,777	1,777	1,777	1,777

Notes: Reported numbers are estimated coefficients from linear regressions with the individual-level estimates of the WTP for the school attributes shown in the column headers as the dependent variable. Individual-level estimates of the WTP are derived using the method suggested in Hole and Kolstad (2012) based on the baseline specification in Table 3. The sample is restricted to *price-sensitive individuals*, i.e., individuals with a non-zero marginal utility of monthly housing costs. Since the majority of the individuals have a negative marginal utility of housing costs, we focus on those in the regressions. For a description of the variables, see Table 2. Heteroscedasticity-robust standard errors are shown in parentheses. Significance levels: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

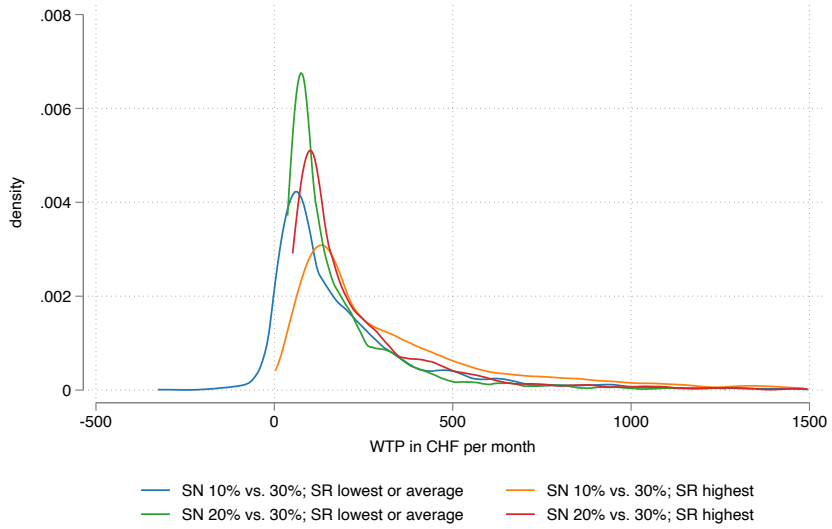
4.3 School ranking and share of SN students

The extended specification in Table 3 shows the results of a mixed logit model with the same attributes as in the baseline specification but including interaction terms for the ranking of the school and the proportion of SN students in the school. As both attributes are included as categorical variables, this implies including four interaction terms of the share of SN students (10% or 20% vs. 30%) interacted with the ranking of the school (highest quartile or average vs. lowest quartile). While the main effects remain stable, the interaction terms of the SN shares with the highest quartile (vs. the lowest quartile) of the school turn out statistically significant, whereas the interactions with the average (vs. the lowest quartile) are insignificant. This implies that parents give an "extra premium" to a lower share of SN students in the school if the school is ranked in the highest quartile. There may be different reasons for this pattern, e.g., related to optimal learning environments, quality education, and peer dynamics.

Figure 4 again restricts the sample to price-sensitive parents with a negative MUC and shows the distributions of the individual-level WTP estimates for the share of SN students comparing

10% with 30% (blue and orange) and 20% with 30% (green and red). The median WTP for a share of SN students of 10% vs. 30% in schools ranked in the highest quartile is CHF 234.0 in monthly housing costs, whereas it is CHF 121.8 in schools that are ranked average or in the lowest quartile. At the same time, the median WTP for a share of 20% vs. 30% SN students is only slightly lower in schools that are ranked average or in the lowest quartile (CHF 113.6 in monthly housing costs), but significantly lower in top-ranked schools (median WTP of CHF 152.2 in monthly housing costs). This confirms, in monetary terms, that parents place a disproportionately higher value on a low share of SN students in schools ranked in the highest quartile, compared to lower-ranked schools or to smaller reductions in the share of SN students.

Figure 4 *Distribution of individual-level estimates of WTP for school attributes – interactions*



Notes: The graph shows the distributions of the individual-level estimates of the WTP in the mixed logit model using the method suggested in Hole and Kolstad (2012) based on the extended specification in Table 3. SN = proportion of students with special needs; SR = school position in cantonal ranking (grouped in lowest quartile or average = blue/green; highest quartile = orange/red).

4.4 Latent class logit models and preference clustering

As a final step of the analysis, we aim to investigate whether we can identify preference clusters among the parents with certain patterns of marginal utilities of the school attributes and the

attribute describing housing costs. These preference patterns can also capture groups of parents that are price-insensitive, who were excluded from the WTP calculations above, but whose marginal utilities for the various school attributes we still wish to characterize.

Formally, we characterize preference clusters using a latent class logit modeling approach (e.g., Hensher & Greene, 2003; Pacifico & Yoo, 2013). Instead of a parametric distributional assumption on the random parameters, we assume that the population is characterized by *C* classes, and class membership is unknown but can be probabilistically assigned. Thus, the systematic part of the model linking attributes with preference parameters is given by

$$CP_{isjc} = \alpha_{jc} + X_{isj}'\delta_c \quad (3)$$

where X_{isj} is still the vector of the four attributes describing alternative *j* for individual *i* in choice set *s*. The parameter vector δ_c describes the marginal utilities of the attributes for class *c*, while α_{jc} is an alternative- and class-specific intercept included as default parameter. The model is estimated in two steps: first, using the expectation-maximization (EM) algorithm of Bhat (1997), which produces maximum likelihood estimates without standard errors, and second, using the estimates from the EM algorithm as starting values in a joint maximum likelihood estimation approach (see, e.g., Yoo, 2020, for details).

We estimated the model using different numbers of classes, i.e., up to *C=15*. Figure 5 shows two information criteria, the Bayesian information criterion (BIC) and the consistent Akaike's information criterion (CAIC), for the latent class logit estimated with different numbers of classes. The information criteria are used to assess model fit and select the optimal *C* that balances model complexity and fit. The results show that the best balance is achieved for a model with seven classes, beyond which there is no significant further improvement. For this reason, we present the results of the latent class logit model with $C = 7$ below. The results are consistent with a six-class model (which entails a loss of class information) and an eight-class

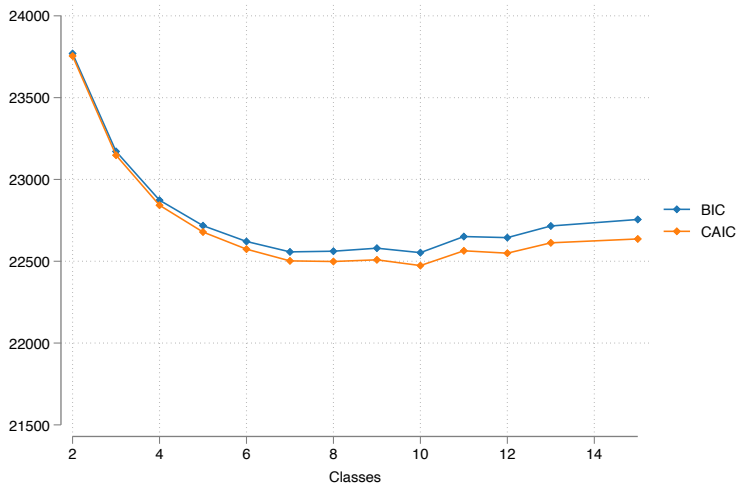
model (which provides no substantial additional insights); results for these alternative specifications are available upon request.

Table 6 summarizes the results of the 7-class latent class logit. Based on the estimated coefficients for the monthly housing cost attribute, we sort the classes into price-insensitive (PI) and price-sensitive (PS). Three classes (PI1-3) are price-insensitive, with MUCs between 0.010 and -0.023, and four classes (PS1-4) price-sensitive, with MUCs between -0.329 and -2.022. The following patterns are observed for classes PI1-3 (each with an estimated class share of ~11%). Parents in PI1 have strong preferences for a lower share of SN students and better-ranked schools, but are indifferent to changes in the share of foreign-language speakers. PI2 exhibits smaller, yet still significant, positive marginal utilities for better school rankings and a lower share of SN students. At the same time, parents in this class show strong preference for a lower share of foreign-language speakers. The latter is also observed for parents in PI3, but they have strongest preferences for school ranking, while the shared of SN students does not affect their choice by much.

For the price-sensitive classes, we find a clear preference pattern. Class PS1 (the largest class with about 20.7%) has strong preferences for both, better ranked schools and a lower share of SN students. This class is less price-sensitive than the other PS classes, and thus, on average, parents' WTP in this class for a top ranked school (CHF 2,510.6) and for the lowest share of SN students (CHF 708.9) is the highest among all classes. Class PS2 (class share of 18.4%) has strong preferences for school ranking but is indifferent to the share of SN students, whereas PS3 (class share of 12.5%) shows the opposite pattern, with only a small WTP for a better-ranked school but a higher WTP (though not as high as PS1) for a lower share of SN students. Class PS4 (class share of 15.9%) is highly price-sensitive, with the most negative MUC—approximately three times more negative than the second most price-sensitive class (PS3). This class also derives positive marginal utility from better school rankings but negative marginal utility from the share

of SN students, indicating a preference for schools with a higher SN share. In none of the price-sensitive classes does the share of foreign-language speakers have a significant effect.

Figure 5 *Information criteria and model selection in latent class logit modeling*



Notes: The graph shows the Bayesian information criterion (BIC) and the consistent Akaike's information criterion (CAIC) for the latent class logit estimated with different numbers of classes. Explanatory variables in all models as in the baseline specification in Table 3.

About one third of the parents are classified as price-insensitive in the latent class model, while two thirds are classified as price-sensitive. This result differs from the shares obtained in the mixed logit model (Table 4). In the mixed logit, we used somewhat arbitrary thresholds to define the MUC groups, whereas in the latent class logit model, the classes are determined based on model fit, and the marginal utility of the housing cost attribute is estimated jointly with the marginal utilities of the other school attributes for all classes. This approach offers an objective, data-driven definition of the classes, characterized by preference patterns.

Table 6 *Results from latent 7-class logit model and willingness-to-pay for school attributes*

Individuals not price-sensitive to changes in housing costs								
Class	Class PI1		Class PI2		Class PI3			
Class size (share)	10.4%		10.9%		11.2%			
	Coeff.	***WTP***	***Coeff.***	***WTP***	***Coeff.***	***WTP***		
Monthly housing costs (in CHF 100)	0.010		-0.022		-0.023			
	(0.029)		(0.020)		(0.053)			
Proportion of students with special needs (ref. 30%)								
10%	2.787***	.	0.566***	.	0.484	.		
	(0.298)		(0.135)		(0.403)			
20%	1.373***	.	0.229*	.	-0.04	.		
	(0.176)		(0.107)		(0.319)			
School position in cantonal ranking (ref. lowest quartile)								
Highest quartile	1.885***	.	0.804***	.	8.706***	.		
	(0.230)		(0.175)		(0.952)			
Average	1.549***	.	0.582***	.	6.386***	.		
	(0.220)		(0.139)		(0.835)			
Proportion of foreign-language speakers (10 ppt)	-0.195	.	-1.501***	.	-2.174***	.		
	(0.102)		(0.150)		(0.338)			
Individuals price-sensitive to changes in housing costs								
Class	Class PS1		Class PS2		Class PS3		Class PS4	
Class size (share)	20.7%		18.4%		12.5%		15.9%	
	Coeff.	***WTP***	***Coeff.***	***WTP***	***Coeff.***	***WTP***	***Coeff.***	***WTP***
Monthly housing costs (in CHF 100)	-0.329***		-0.487***		-0.661***		-2.022***	
	(0.042)		(0.036)		(0.052)		(0.265)	
Proportion of students with special needs (ref. 30%)								
10%	2.331***	708.9***	-0.219	-44.9	2.047***	309.6***	-0.806**	-39.9*
	(0.235)	(73.7)	(0.153)	(31.9)	(0.263)	(40.5)	(0.303)	(17.4)
20%	1.573***	478.4***	0.116	23.7	1.369***	207.0***	-0.435	-21.5
	(0.178)	(57.7)	(0.105)	(21.3)	(0.162)	(24.0)	(0.234)	(12.1)
School position in cantonal ranking (ref. lowest quartile)								
Highest quartile	8.255***	2510.6***	2.905***	595.6***	0.435*	65.8*	1.135**	56.1***
	(0.602)	(223.8)	(0.284)	(61.5)	(0.209)	(30.8)	(0.394)	(15.5)
Average	5.242***	1594.4***	2.018***	413.8***	0.163	24.6	1.129***	55.8***
	(0.448)	(146.1)	(0.172)	(38.7)	(0.191)	(28.7)	(0.257)	(11.1)
Proportion of foreign-language speakers (10 ppt)	-0.124	-37.8	-0.097	-19.8	-0.159	-24.1	0.22	10.9
	(0.094)	(30.7)	(0.069)	(14.1)	(0.091)	(13.7)	(0.156)	(7.9)
Number of individuals	2,672							
Number of observations	42,752							

Notes: The outcome in the latent class logit is a dummy variable whether a specific option (A or B) is chosen. Reported numbers are estimated coefficients per class, with estimated class shares reported at the top of the coefficients/WTP columns. Specifications with the variables as shown in the table. For each class, there is an additional parameter for the alternative chosen (not shown). WTP estimates are obtained by dividing the estimated coefficient of the school attribute by the estimated coefficient of the monthly housing cost, multiplied by -100 to obtain the WTP in CHF. Cluster-adjusted standard errors for the estimated coefficients are shown in parentheses. Standard errors for the WTP estimates are obtained using the delta method. Significance levels: $^{*}\ p < 0.05$, $^{**}\ p < 0.01$, $^{***}\ p < 0.001$.

Among the price-insensitive parents, PI1 can be viewed as *inclusion-averse and high-quality-school choosers*, who strongly prefer attending high-ranking schools with a low SN share and appear largely unconstrained by housing costs. PI2 represents composition-sensitive choosers, who value better rankings and lower SN shares, but also assign a strong negative value to higher proportions of foreign-language speakers, suggesting they prioritize academically oriented and more homogeneous peer groups. PI3 can be interpreted as rank-focused parents: they place the greatest weight on school ranking, dislike high shares of foreign-language speakers, but respond only weakly to changes in the SN share. Among the price-sensitive parents, PS1 corresponds to *high-demand, high-WTP parents*, who combine strong preferences for both high ranking and low SN share with relatively modest cost sensitivity. PS2 appears as a group of *rank-only maximizers*, who are price-sensitive but care almost exclusively about the school's position in the ranking and not about the SN share or foreign-language composition. PS3 is the mirror image, a group of *SN-sensitive parents* who place substantial weight on reducing the SN share but only modest weight on school ranking. Finally, PS4 can be characterized as *strongly budget-constrained but inclusion-oriented parents*: they are extremely price-sensitive, value higher-ranked schools to some extent, but display a positive marginal utility for higher SN shares, suggesting that they either positively value inclusive settings, or they do not perceive a high SN share as detrimental in the same way as other classes.

5. Conclusions

This paper provides new evidence on parental preferences for school attributes in a context where school choice is largely linked to residential location. Using a DCE with 2,672 parents of school-age children in Switzerland, we find that, on average, parents prefer schools with higher positions

in the academic school quality ranking, lower proportions of students with SN, and fewer foreign-language speakers, while they dislike higher housing costs. Translating marginal utilities into monetary terms for price-sensitive parents reveals substantial willingness-to-pay for improvements in these attributes; for example, parents are willing to incur significantly higher monthly housing costs to move from the lowest- to the highest-ranked schools, and they value reductions in the share of students with SN, and, while statistically significant, to a lesser extent reductions in the share of foreign language speaking peers. The analysis also documents pronounced preference heterogeneity, both in continuous form (mixed logit) and discrete form (latent classes), and uncovers strong complementarities between school ranking and the proportion of students with SN, with parents placing especially high value on low SN shares in top-ranked schools.

These findings have several implications for education policy and the design of inclusive schooling. First, the substantial WTP for higher school rankings and lower SN shares indicates that parents are willing to incur significant housing costs to secure what they perceive as academically favorable peer environments, highlighting school composition as a key factor in residential decisions. Second, the interaction between school ranking and SN share points to potential tensions between inclusion objectives and parental preferences in high-performing schools, where policies that visibly increase the proportion of students with special needs may encounter stronger resistance. Third, the latent classes reveal that the parent population is far from homogeneous: some groups focus almost exclusively on school ranking, others prioritize lower SN shares, and a sizeable group is strongly budget-constrained but appears more accepting of, or even positively inclined toward, higher SN shares. This heterogeneity implies that information about the quality of individual schools, support for inclusive education, or

housing or zoning policies will not affect all households uniformly, and that interventions may need to be tailored to different preference profiles.

These empirical findings, namely, first, that even among price-sensitive parents we observe heterogeneous preferences regarding peer-group composition, suggest that allocative efficiency could indeed be improved through expanded school choice within the public sector. Second, however, the substantial share of price-insensitive parents indicates that the potentially negative effects often associated with greater school choice, specifically, that an expensive residential location would no longer guarantee insulation from parents whose children they do not wish their own to have as peers, would likely be offset by these families shifting to costly private schools. In the current Swiss context, this incentive rarely exists, because parents who face no budget constraints and are willing to pay any price for the school of their choice can secure access simply through residential selection.

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