



WHICH SCHOOL CHARACTERISTICS INFLUENCE PARENTS' SCHOOL PREFERENCES?

A rank-ordered logit regression of pre-
primary school preferences in Ghent

Nele Havermans, Thomas Wouters & Steven Groenez



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Voorwoord

We onderzoeken welke schoolkenmerken een invloed hebben op de voorkeuren van ouders voor kleuterscholen. Hierbij nemen we de afstand van de school tot de woonplaats, de schoolsamenstelling, een beperkte meting van de perceptie van schoolkwaliteit en het net van de school op. Ook zijn we geïnteresseerd in verschillen naargelang de sociaaleconomische achtergrond en thuistaal van het gezin. De analyses van dit rapport zijn uitgevoerd op data van het centraal aanmeldingsregister (CAR) van Gent.

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Beleidssamenvatting

In dit rapport focussen we op de voorkeuren voor kleuterscholen die aan de basis liggen van de schoolkeuze van ouders. We onderzoeken welke schoolkenmerken een invloed hebben op deze voorkeuren. Hierbij nemen we de afstand van de school tot de woonplaats, de schoolsamenstelling, een beperkte meting van de perceptie van schoolkwaliteit en het net van de school op. Ook zijn we geïnteresseerd in verschillen naargelang de sociaaleconomische achtergrond en thuistaal van het gezin.

De analyses van dit rapport zijn uitgevoerd op data van het centraal aanmeldingsregister (CAR) van Gent. We gebruiken de aanmelddata van 2014 (voor het schooljaar 2014-2015) voor de instappers van het kleuteronderwijs. Kinderen uit voorrangsgroepen (broers en zussen van leerlingen en kinderen van leerkrachten) nemen we niet op in de analyses, omdat ze voorrang krijgen bij de toewijzing van scholen. De dataset omvat de schoolvoorkeuren van 1.403 leerlingen voor 99 kleuterscholen. Het toewijzingssysteem in Gent is nagenoeg bestendig tegen strategisch gedrag. Het is echter wel mogelijk dat ouders, door de belangrijke rol van afstand in het toewijzingsalgoritme, een sterkere voorkeur voor nabije scholen vertonen. Ook zijn er in LOP Gent proportioneel gezien meer methodescholen dan in andere LOP's. Hiermee moet rekening gehouden bij de transposeerbaarheid van de resultaten naar andere regio's.

De afhankelijke variabele zijn de schoolvoorkeuren van ouders. Deze variabele is gemeten door de rangorde van scholen die ouders in het online aanmeldingssysteem opgegeven hebben. De meeste ouders hebben 5 scholen gerangschikt. De onafhankelijke variabelen zijn gemeten op het niveau van de ouders (of de leerling) en de scholen. Op het niveau van de ouders (of de leerling) meten we de sociaaleconomische status (SES), de thuistaal, de afstand van de school tot hun woon- of werkplaats, en het (gewogen) gemiddelde percentage leerlingen met een lage SES¹ of niet-Nederlandse thuistaal in de scholen in de directe woonomgeving van ouders. De onafhankelijke variabelen op schoolniveau zijn het percentage leerlingen met een lage sociaaleconomische achtergrond, het percentage leerlingen met een andere thuistaal, het percentage leerlingen met eenzelfde achtergrond als de aanmeldende leerling, een proxymeting van de perceptie van de schoolkwaliteit (als het percentage leerlingen dat een ASO-richting volgt in het derde jaar secundair) en het onderwijsnet. We vinden in de eerste plaats dat alle ouders een voorkeur hebben voor een zo kort mogelijke afstand tussen de school en hun woon- of werkplek. Deze voorkeur voor een kleine afstand wordt in eerdere studies verklaard door de financiële en tijdskosten van verplaatsingen en de inbedding van buurtscholen in de

¹ We beschouwen in dit rapport leerlingen met een lage SES als leerlingen wiens moeder geen diploma hoger onderwijs heeft of leerlingen die een schooltoelage ontvangen. Merk op dat deze operationalisering afwijkt van die van indicatorleerlingen in het inschrijvingsdecreet (i.e. leerlingen wiens moeder geen diploma secundair onderwijs of daarmee gelijkgesteld heeft of leerlingen die een schooltoelage ontvangen). In Appendix C presenteren we resultaten voor opleidingsniveau van moeder apart, waarbij we als cesuur een diploma secundair onderwijs (Appendix C1) dan wel een diploma hoger onderwijs (Appendix C2) nemen. De resultaten voor de verschillende cesuren komen sterk overeen: de significantie en richting van effecten blijven gelijk, enkel de absolute grootte van de schattingen verandert lichtjes.

lokale gemeenschap. De voorkeur voor een school dichterbij is sterker voor ouders met een lage SES of met een andere thuistaal dan het Nederlands.

Ten tweede zien we dat de schoolsamenstelling een relatie heeft met schoolvoorkeuren. Ouders hebben gemiddeld genomen een grotere voorkeur voor scholen met proportioneel minder leerlingen met lage SES of met een niet-Nederlandse thuistaal. Deze voorkeur is vooral sterk bij hoge-SES ouders voor socio-economische schoolsamenstelling, en bij ouders met Nederlands als thuistaal voor etnische schoolsamenstelling.

Uit verdere analyses blijkt dat alle ouders een voorkeur hebben voor scholen waarin leerlingen met een gelijke (socio-economische en etnische) achtergrond aanwezig zijn, én voor scholen met proportioneel meer leerlingen met een hoge SES en Nederlands als thuistaal. Dit zorgt er bij lage-SES ouders of ouders met een andere taal dan het Nederlands voor dat ze een trade-off tussen beide voorkeuren moeten maken waardoor hun voorkeur voor schoolsamenstelling minder uitgesproken is dan bij ouders met een hoge sociale status of met Nederlands als thuistaal.

Verder zien we dat de relatie tussen de socio-economische schoolsamenstelling en schoolvoorkeuren ook varieert naargelang de samenstelling van scholen in de woonomgeving van ouders. Ouders die wonen in een buurt waar scholen gemiddeld een hoog percentage lage-SES leerlingen hebben, vinden een hoge socio-economische schoolsamenstelling belangrijker dan ouders die in een hoge-SES buurt wonen. Vooral ouders met hoge SES in lage-SES buurten hebben een sterke positieve voorkeur voor hoge-SES scholen, en zijn dus meer geneigd om een school buiten hun buurt te verkiezen.

De perceptie van de schoolkwaliteit heeft ook een invloed op de schoolvoorkeuren van ouders. Enkel ouders met een andere taal dan Nederlands lijken geen uitgesproken voorkeur te hebben voor de gepercipieerde schoolkwaliteit. Op basis van eerdere studies verwachten we dat dit resultaat geduid kan worden doordat ouders met een andere thuistaal minder kennis hebben van de "kwaliteit" van scholen. We kunnen deze hypothese niet testen op de huidige dataset, maar dit kan een interessant onderwerp voor toekomstig onderzoek zijn. We willen er wel op wijzen dat deze resultaten voor schoolkwaliteit met enige terughoudendheid geïnterpreteerd dienen te worden. We gebruiken in de analyses een proxymeting van de perceptie van schoolkwaliteit die vooral de nadruk op de academische prestaties van kinderen legt, terwijl andere aspecten (bv. schoolklimaat, zorg en begeleiding) ook ouders' perceptie van schoolkwaliteit kunnen beïnvloeden. In Appendix B presenteren we analyses waarbij we de voorkeuren voor kinderopvang aangeboden door de school en vestigingsplaatsgrootte opnemen als bijkomende schoolkenmerken. De resultaten van deze analyses tonen aan dat ouders scholen met een uitgebreid aanbod van kinderopvang verkiezen, en ook dat ze een sterkere voorkeur hebben voor grotere scholen. Deze voorkeuren zijn minder sterk dan de voorkeur voor de proxyvariabele die we in de analyses opnemen (namelijk percentage leerlingen in ASO-richting).

Tot slot hebben we onderzocht of de invloed van het onderwijsnet op schoolvoorkeuren verschilt naargelang de achtergrond van ouders. De voorkeuren voor onderwijsnet zijn significant, maar klein in vergelijking met die voor afstand, schoolsamenstelling en de proxymeting van de perceptie van schoolkwaliteit. Gecontroleerd voor deze variabelen, vinden we dat ouders (niet-methode)scholen van het gemeenschapsonderwijs verkiezen boven (niet-methode)scholen van het stedelijk onderwijs. Ouders verkiezen verder, gemiddeld genomen, niet-methodescholen van het stedelijk onderwijs

boven methodescholen (van alle netten). Deze negatieve voorkeur voor methodescholen is het sterkst bij ouders met een lage SES. Ook zien we dat ouders die een andere thuistaal dan het Nederlands hebben, een sterkere voorkeur voor (niet-methode)scholen van het vrije net hebben dan Nederlandstalige ouders.

We geven enkele beleidsimplicaties van onze bevindingen voor het schooldesegregatiebeleid.

Eerst zien we dat woonsegregatie zich (deels) vertaalt in schoolsegregatie, gezien de nabijheid van de school een belangrijk element van de schoolvoorkeuren van ouders is. Beleidsmakers moeten dus voldoende aandacht hebben voor het verminderen van woonsegregatie als belangrijke verklarende factor voor schoolsegregatie.

Andere schoolkenmerken spelen daarentegen ook een rol, zoals de schoolsamenstelling en perceptie van de schoolkwaliteit. Als gevolg van deze andere voorkeuren naast afstand, houdt de desegregatie van een woonbuurt (i.e. toename van sociale of etnische mix) niet automatisch in dat de schoolsegregatie in deze buurt ook afneemt. Vooral ouders met hoge SES die zich in een buurt vestigen met scholen met veel lage-SES leerlingen, hebben een sterkere voorkeur voor scholen met veel hoge-SES leerlingen, en zijn meer geneigd om een school in een andere buurt voor hun kind te kiezen. De gentrificatie van een buurt leidt dus niet altijd tot een grotere sociale mix op scholen.

Daarom zou een desegregatiebeleid aandacht moeten hebben voor de oudervoorkeuren voor schoolsamenstelling. Het is daarom belangrijk dat beleidsmakers ervoor zorgen dat deze ouders over voldoende informatie beschikken wanneer ze een schoolkeuze maken. We identificeren op basis van onze resultaten ouders met een hoge SES of met Nederlands als thuistaal als een potentiële doelgroep voor zulke informatiecampagnes, omdat deze ouders sterkere voorkeuren hebben voor een “bevoordeelde” schoolsamenstelling (ook na controle voor schoolkwaliteit) en dan vooral wanneer ze in een buurt wonen met veel lage-SES scholen. Beleidsmakers op gemeenteniveau kunnen organisaties, zoals School in Zicht, steunen die zich richten op deze groep ouders, of ze kunnen zelf informatiecampagnes organiseren (zoals bijvoorbeeld in LOP Gent of Temse).

Tot slot geven de resultaten van dit rapport een inzicht in de manieren waarop vrije schoolkeuze kan bijdragen tot schoolsegregatie. Toch is het niet zeker dat het beperken van vrije schoolkeuze de schoolsegregatie zou doen afnemen. Zo kan het inperken van vrije schoolkeuze en het toewijzen van scholen aan kinderen op basis van hun woonplaats, ertoe leiden dat ouders meer rekening houden met het schoolaanbod bij het kiezen van een woonplaats. Dit kan op langere termijn de woonsegregatie versterken. We zijn bijgevolg van mening dat beleidsmakers eerder moeten focussen op informatiecampagnes en toeleidingacties om de voorkeuren van ouders te beïnvloeden dan in het verminderen van de vrije schoolkeuze van ouders.

Introduction

Increasing freedom of school choice has been a focal policy objective in different school systems (e.g. United States, Sweden, Spain) in the past decades. Freedom of school choice is believed to increase school quality, access of disadvantaged pupils to quality schools and parental school involvement in contrast to government-controlled school choice systems (Carlson, 2014; Harris, 2010). The research literature does however also point to an unwanted side-effect of freedom of school choice: liberating parental school choice often leads to more socioeconomic and racial school segregation (Bifulco & Ladd, 2006; Denessen, Driessena, & Slegers, 2005; Schneider, Schuchart, Weishaupt, & Riedel, 2012). Understanding the dynamic nature of parents' school preferences can be a useful tool to guide desegregation policies, as parents' school preferences are almost directly translated into school choices in educational systems with freedom of school choice.

The school choice literature has identified a number of school characteristics that can impact parents' school preferences. These characteristics are proximity, school composition, school quality, school denomination and costs (e.g. Bifulco & Ladd, 2006; Jacobs, 2013; Lankford & Wyckoff, 1992; Teske & Schneider, 2001). Parents' school preferences are formed by an interplay between these characteristics of the schools in their choice set and their own background characteristics (Denessen, Driessena, & Slegers, 2005). In the following paragraphs we discuss the different components of parents' school preferences and whether these preferences are affected by parents' social and ethnic background and their residential neighborhood.

A first component of parents' school preferences is the distance between their residence and school (Collins & Snell, 2000), referred to as the proximity of the school. Jacobs (2013) claims that all parents, regardless of their background, share similar preferences for a close proximity of the school, because of the financial and social costs of commuting time and the embedment of the school in the local community. Although some studies support this claim (Burgess, Greaves, Vignoles, & Wilson, 2014; Jacobs, 2013), it can be expanded in three ways. First, some research suggests that ethnic minorities or groups with a lower socio-economic status have a stronger preference for proximity because of the commuting costs (O'Shaughnessy, 2007; Schneider et al., 2012). Second, the importance of distance to school may also differ according to parents' residential neighborhood. Parents who live in rural areas often have a more constrained set of options, because of the concentration of schools (and especially secondary schools) in cities. Distance may thus be more important to them than to parents in urban areas (Jenkins, Micklewright, & Schnepf, 2008). Third, the preference for proximity can be counterbalanced by other preferences. For instance, parents may prefer a more distant school with a "better school composition" over a school nearby their home.

Parents' preferences for ethnic and socioeconomic school composition are a second component in explaining the link between freedom of school choice and school segregation. There is no consensus in the research literature on the direction in which school preferences for the composition of the school go and whether they are similar for different ethnic and socioeconomic groups. Some studies find that ethnic groups tend to prefer schools with a high proportion of members of their own group

(Bifulco & Ladd, 2006; Booker, Zimmer, & Buddin, 2005; Denessen, Driessena, & Slegers, 2005; Weiher & Tedin, 2002). This preference for a strong presence of in-group members is often explained by “neutral ethnocentrism” which claims that all social groups prefer to interact with members of their own group (without rejecting members of different social groups). Other studies find however that this tendency for self-segregation only prevails among high-status groups. These studies report that white families prefer schools with a high percentage of whites, and that wealthier families avoid schools with high poverty rates, whereas non-whites and poor families demonstrate less explicit school preferences regarding racial and socioeconomic composition (Bifulco, Ladd, & Ross, 2009; Glenn, 2011; Saporito, 2003, 2009). These findings are often attributed to the phenomenon of “outgroup avoidance” which states that only groups with a high social status prefer to interact with their own group (Blumer, 1958), and that groups with a lower social status have weaker preferences for school composition (Saporito, 2003, p. 184). High-status parents are believed to invest more in status maintenance than low-status parents as they better understand the importance of educational status in current society. Because school status and quality are often strongly related to the presence of low-status groups, they tend to prefer schools with a stronger presence of their own group (Sikkink & Emerson, 2008). An alternative explanation for the absence of preferences for school composition among groups with a lower social status may be that they face a trade-off between a preference for a strong presence of in-group members, and school quality which often coincides with the presence of children from high-status groups (Hastings, Kane, & Staiger, 2009).

Proximity and school composition are not the only components of parents’ school preferences. School quality, the role of religion in the school and school costs can also impact the degree to which parents prefer the school.

Although one can expect that all parents prefer to send their children to a high-quality school, studies often report that low-status families have a weaker preference for school quality than high-status families (Ball, Vincent, & Ball, 1998; Burgess et al., 2014; Kristen, 2008; Teske & Schneider, 2001). Families with a higher socioeconomic status tend to have a stronger preference for schools with higher academic achievement (Burgess et al., 2014), because they better understand the importance of education in society and they attach more significance to status maintenance (Sikkink & Emerson, 2008). In addition, groups with a low socioeconomic status or ethnic minorities are often less informed about the quality of schools in their neighborhood and the overall system of school enrollment (Ball et al., 1998; Burgess et al., 2014; Kristen, 2008; Teske & Schneider, 2001).

The educational network of the school can also be a part of parents’ preferences. There are three educational networks (groupings of schools according to funding and management type) in Belgium: the subsidized schools of the Flemish community; the subsidized schools run by municipalities or provinces; and the subsidized, privately run educational network. The large majority of schools in the latter network are Catholic schools. Research evidence on the role of religion in schools is straightforward: religious parents tend to prefer schools with the same denomination for their children (Denessen et al., 2005; Cohen-Zada & Sander, 2008). The preference for a religious school is strongest for parents with the highest levels of religiosity (Cohen-Zada & Sander, 2008). In addition to these three networks, it may also be interesting to investigate preferences for alternative schools (i.e. schools with a particular pedagogical aim, such as Freinet or Steiner schools). These alternative schools are part of the three educational networks, but they differ in pedagogical framework. The proportion

of children with a highly educated mother is on average higher in Flemish alternative schools than in other schools (De Bilde, De Fraine & Van Damme, 2013).

A final component are the tuition costs of schools. Especially in educational systems without subsidies for non-public schools, tuition costs can be an important barrier for parents with low socioeconomic status (Bosetti, 2004; Lankford & Wyckoff, 1992). In many Western European countries, amongst which Flanders, tuition costs are relatively low in the large majority of schools that offer pre-primary, primary and secondary education (EACEA, Eurydice & Eurostat, 2012).

In this study we focus on parents' preferences for proximity, school composition, school quality, and educational network, and whether these preferences differ according to parents' socioeconomic and ethnic background. The analyses are conducted on an administrative dataset that comprises parents' pre-primary school preferences for the year 2015-2016 in the urban area of Ghent. Ghent is an ethnically and socially diverse city that is situated in Flanders, the northern, Dutch-speaking part of Belgium. Flanders forms an interesting context to investigate school preferences of parents for several reasons. Freedom of school choice has been embedded in the Belgian (and thus also the Flemish) educational system since the end of the 19th century to establish a balance between Catholic and government-lead schools. In addition, the Flemish levels of segregation and inequalities between ethnic and social groups are among the highest of OECD countries (PISA, 2015). Finally, a tuition fee cap is in place for all pre-primary and primary schools in Flanders. Because this cap is relatively low, we disregard the role of tuition fees. They are likely to play only a very marginal role in the school choice process in Flanders compared to education systems with a higher dispersion of tuition fees across schools, such as the United Kingdom or the United States.

This study contributes to the research literature in three ways. First of all, we analyze a unique dataset of parents' pure school preferences. The data allow the observation of preferences across schools, instead of outcomes of the school choice process where school capacity constraints and possibly discriminatory practices are mixed up with preferences. Second, this study looks at preferences for both ethnic and socioeconomic school composition, in contrast to most studies which tend to focus on only one aspect of school composition (Bifulco & Ladd, 2006; Booker et al., 2005; Saporito, 2003, 2009; Sikkink & Emerson, 2008; Tedin & Weiher, 2004; Weiher & Tedin, 2002). The results of this study clearly show that the preferences for socioeconomic and ethnic school composition are influenced by parents' group membership. Third, we do not only take parents' social and ethnic background characteristics into account, but we also look at the composition of the schools in their neighborhood. This has been a rather neglected factor in school preferences/choice literature, but we find that it is related to preferences for school composition.

Data and methods

School enrollment data of Ghent (Flanders)

We use a dataset generated in 2014 by the online school assignment procedure in the city of Ghent. The data consist of ranked parental preferences for pre-primary schools. Pre-primary schools in Flanders are organized for children aged between 2.5 years and 5 years old and enrollment is free. Tuition fees cannot exceed 45 euros per child per year for activities and school materials.

School enrollment in pre-primary schools in Ghent takes place in different stages. First, pupils who have a sibling enrolled in a school, or a parent working at a school enjoy an absolute priority for that school. After the enrollment period for these “priority pupils”, non-priority pupils can be admitted to schools as well. During this second period, parents can put their school preferences into an online register. In Ghent, parents can rank as many schools as they like. An allocation algorithm is run on these preferences. The algorithm used in the school assignment procedure is the school-proposing deferred acceptance algorithm.² In Ghent, the school assignment procedure puts emphasis on distance (both distance to home and distance to work are used). Through this procedure, parents obtain the right to enroll in the assigned school. Parents can choose to enroll their child in this school, or they can attempt to enroll their child at a different school (outside Ghent). Assigned places that are not claimed are offered to parents on the waiting list.

Strictly speaking, this allocation mechanism is not strategy proof. There are cases in which it would be optimal for parents to drop the last school(s) from their preference list. These cases, however, are very rare (less than 1% of the students). In order to know that one can benefit from such strategies, a lot of information on the preferences and priorities of other students is necessary. Given that this information is not available and that the chance of successful manipulation is small, the cost of dropping schools from one’s list (i.e. the risk of not being assigned to any school) outweighs the benefit. More fundamentally, it can never be optimal to reverse the ranking of schools on one’s preference list. Overall, we can safely assume that the mechanism incentivizes parents to reveal their true preference list. This is also clearly communicated to parents.

However, it is possible that the presence of an allocation algorithm changes parental preferences in two ways. First of all, the mechanism uses the distance between parents’ home (or workplace) and the school as one of the main determinants of allocation. As a consequence, parents may be less likely to include schools that are further away on their preference list, because the chances of enrollment in these schools are smaller. Second, the mechanism may also impact parental preferences through its impact on school composition. If schools become more equal in terms of their school composition as

² The school-proposing deferred acceptance algorithm proposes seats to the students with the highest priority for that school, as long as seats are available. Students who had not yet received any offers and who included the school in their preference list will tentatively accept the offer until they receive a better one. If they do receive a better offer, they will (again tentatively) accept it and the first school (that got rejected by the student) will now propose this place to the next student on its priority list.

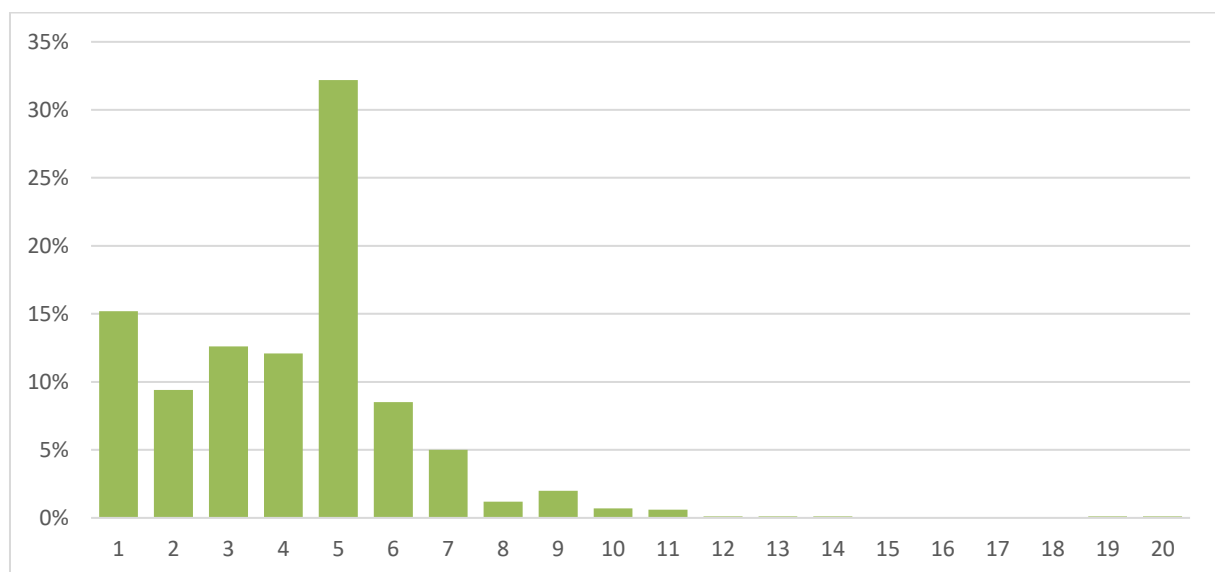
a result of the allocation mechanism, people may become less sensitive to this dimension of school choice. School segregation has however remained relatively stable in Ghent.³

The dataset consists of the preference data of non-priority pupils (i.e. pupils without siblings in the school or parents working in the school) who are enrolling for the first time in pre-primary school in 2014-2015. 43 parents with missing values on their background variables (SES, home language, home address) were excluded from the dataset. This brings the total sample size to 1,403 parents making their initial school choice. We link the school preferences of parents with administrative information on the socioeconomic and ethnic composition, and location of the 99 pre-primary schools in the Ghent area. This data is obtained from the Flemish administration.

Variables

We analyze parents' school preferences as the dependent variable in the analyses. These preferences are operationalized by the preference list of parents on the website (see Sample). Parents can put as many schools on their preference list as they want. On average, people list 4 schools. About 15% of the parents only mention one option. The distribution of the number of preference is presented in Figure 1. Five schools is the mode. This is likely to be the result of the system administrators' recommendation to list at least 5 schools.

Figure 1. Distribution of number of preferences.



We have information on the socioeconomic and ethnic background of pupils, the distance between their home and the schools in their choice set, as well as the average composition of the schools in their neighborhood. Descriptive statistics for these variables are presented in Table 1.

³ According to our own computations, school segregation has remained stable in Ghent between 2001 and 2012. For the school year 2013-2014, a change was implemented in the enrolment mechanism in order to reduce segregation. On average, a decrease in segregation was documented, but this effect was not always visible to school personnel, let alone to parents. Since our dataset pertains to the second school year for which the desegregation policy was in place, we will assume that parental preferences have not (yet) changed substantially because of the introduction of the allocation mechanism.

The socioeconomic background of pupils is operationalized by the dummy variable 'low socioeconomic background'. The low SES group (value 1) consists of children whose mother did not obtain a higher education degree (39%), or who receive a school allowance (7%).⁴ In total, 40% percent of children have a low socioeconomic status. The proportion of children who receive a school allowance in the dataset is significantly lower than the official figure of 30% for all pre-primary school pupils. This is because most pupils in the first year of pre-primary school are unsure whether they are entitled to school allowance at the moment of school enrollment. Because of this underestimation of the proportion of pupils, we do not include educational level of mother and reception of financial assistance as separate variables into the model.^{5,6}

We measure pupils' ethnic background with the dummy variable 'non-Dutch home language' (0= Dutch spoken at home; 1= other language than Dutch spoken at home). 23% of the parents do not speak Dutch at home. Additional information on nationality or country of birth of pupils and/or their parents is not available. The correlation between the ethnic and socioeconomic background variables is significant and moderately high ($r= 0.396$, $p=0.000$).

We also include the shortest distance between home/work and school. Parents can submit home and work addresses in the online register. The distance between home or workplace(s) and the school is calculated and we include the shortest distance in the analyses as a continuous variable (distance in kilometers).⁷ In 83% of the cases, this shortest distance equals the home-school distance. To illustrate, we present the distribution of the distance for the school of first preference in Figure 2.

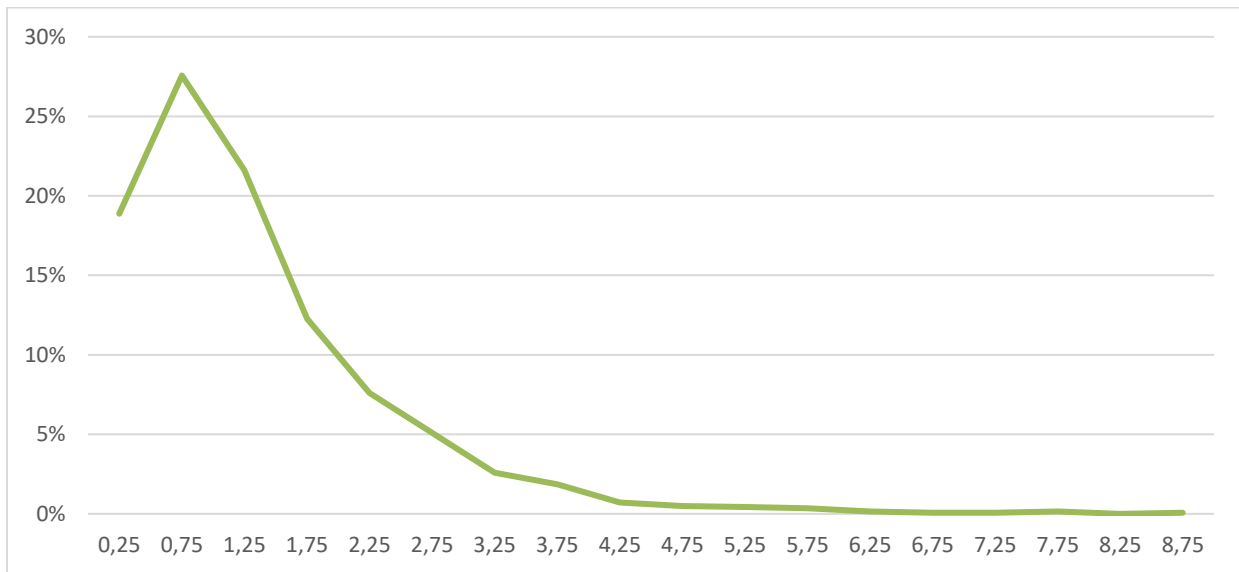
⁴ Note that this operationalization of the socioeconomic background of pupils diverges from the way low-SES pupils are defined in the Enrollment Decree of the Flemish government.

⁵ The correlation between the reception of financial assistance and the educational level of the mother is also relatively low ($r=0.273$). This is because of the high proportion of non-observation in the financial assistance variable.

⁶ In Appendix C we present the results for mother's educational level separately with two different operationalizations: in the first table we compare no degree of secondary education with degree of secondary/higher education, in the second table we compare no degree of higher education with degree of higher education. The results in this table show that the direction and significance of the estimates do not alter, but that the estimate sizes slightly differ between these two operationalizations.

⁷ We included both home and work address in the calculation of the shortest distance, because the research literature on school proximity especially focuses on commuting costs. By looking at the shortest distance between the school and the work or home address, we calculate the additional commuting distance parents have to travel to bring their child to school. For instance, if a school is far from the home but close to parent's work, the additional commuting costs are relatively small.

Figure 2. Distribution of shortest distance between home/work and school of first preference (in kilometers).



Note: 9 observations with a distance higher than 10 kilometers are not included in this figure.

Finally, we take the composition of the schools in close proximity of parents' residence into account. This is calculated as the weighted mean of the proportion of disadvantaged children (low SES or non-Dutch home language) in the pre-primary schools that are situated at a maximum distance of three kilometers from the parents' home address. The weights are attributed to schools based on the home-school distance, based on a linear distance decay function. Schools closer to parents' home receive a higher weight than schools further away: schools at a distance of 0 meters have a weight of 1, and schools at distance 3 km (or further) have a weight of 0. As a consequence, especially the composition of nearby schools have a strong impact on the calculation of this weighted mean.

Table 1. Descriptive statistics for pupil-level variables

Variables	Mean	S.D.	Min.	Max.
Distance (in km)	1.55	3.46	0.00	73.61
Low socioeconomic status	0.40	0.49	0.00	1.00
Non-Dutch home language	0.23	0.42	0.00	1.00
Number of preferences	4.16	2.31	0.00	36.00
Average % of low-SES pupils in neighborhood schools	0.55	0.10	0.23	0.88
Average % of non-Dutch speaking pupils in neighborhood schools	0.36	0.12	0.00	0.60

The independent variables at the school-level are based on the administrative school data, and not the preference data. The descriptive values of the school-level variables are presented in Table 2.

We first include the socioeconomic and ethnic school composition of the pre-primary school. The socioeconomic composition of the school indicates the proportion of pupils with a low socioeconomic background (mother without degree of higher education or school allowance beneficiary) in the pre-primary school. The ethnic composition of the school is the proportion of pupils with a non-Dutch home language. The correlation between socioeconomic and ethnic school composition is significantly high ($r=0.884$; $p=0.000$).

For each combination of a pupil and a pre-primary school, we calculate the share of pupils with the same background. We take the socioeconomic and the ethnic background of pupils into account. Pupils who have the same SES (high or low) or the same home language (Dutch or non-Dutch) as the parents receive a score of 0.5 for each of the two characteristics. For instance, a pupil with the same socioeconomic and ethnic background gets a score of 1; and a pupil with a different ethnic but similar socioeconomic background gets a score of 0.5. The variable “pupils with same background” is the mean value of this similar background variable for all the pupils in the pre-primary school.

We construct a proxy measure for *perceived* school quality using the administrative dataset. For this measure, we consider the future academic careers of the pupils from the pre-primary schools in Ghent. We operationalize this as the proportion of former pupils that follow the academic track in the third year of secondary education. These proportions are available in the administrative school dataset, but not for all schools. The analyses for perceived school quality are conducted on a smaller subsample. We lose almost one third of the observations if we want to include this variable in our analysis. A t-test reveals that in terms of group composition, schools for which we have quality data are not different from the other schools regarding their school composition. This proxy measure of perceived school quality is crude, because of the sole focus on cognitive achievement in secondary school. Furthermore, it undervalues other aspects of school quality beyond achievement scores, such as pupil guidance, ‘added value’ or school climate. Also, there is a strong and significant correlation with the percentage of low SES pupils ($r=-0.80$) and pupils with a foreign home language ($r=-0.73$). We recommend the reader to interpret the results for school quality with these comments in mind.⁸

Finally, we include a variable in the analyses that captures the educational network. In Flanders, 61% of pre-primary schools belong to the network of subsidized free schools. In Ghent, on the contrary, 55% of schools are run by the (local or regional) government, while 44% are part of the free subsidized educational network (mostly Catholic schools or alternative schools). Furthermore, almost one third of schools in Ghent can be considered “method schools” or “alternative schools. The majority of the method schools are part of the educational network of the local government, but some method schools are also freely subsidized. In the analyses, we will distinguish between four types of educational networks: 1) non-method schools run by the local government (19%); 2) non-method schools run by the Flemish community (9%); 3) non-method schools of the free subsidized educational

⁸ We performed additional analyses with other school characteristics, such as after-school childcare and school size. They had a very small impact on parents’ school preferences and did not change the findings for the proxy measure of perceived school quality. We decided to only present the results for perceived school quality in this paper, and to include the findings for the additional analyses with school size and after school care in Appendix B.

network (40%); and 4) method schools (32%)⁹. 84% of parents have a ranking that consists of more than one educational network. 3% have only ranked method schools.

Table 2. Descriptive statistics for school-level variables

	N	%	SD	Min	Max
% Low socioeconomic status	99	0.58	0.25	0.19	1.00
% Foreign language	99	0.34	0.26	0.00	0.97
% Pupils in academic track	68	0.53	0.20	0.01	0.95

Method

We perform rank-ordered logit regression analysis on the ranked preferences of parents. Ranked data can be represented as a series of choices by the same decision maker. First, the most preferred option is chosen from the whole choice set. The second option is the one that would be chosen from a set containing all schools except the most preferred one, etc. This idea, originally developed by Beggs, Cardell and Hausman (1981), is called rank-ordered (or exploded) logit.

Take a student, who has schools A, B and C in the school choice set, with $C \succcurlyeq B \succcurlyeq A$. Then, following Train (2000), the probability to submit this ranking becomes:

$$Prob(C \succcurlyeq B \succcurlyeq A) = \frac{e^{V_{iC}}}{\sum_{j=A,B,C} e^{V_{ij}}} * \frac{e^{V_{iB}}}{\sum_{j=A,B} e^{V_{ij}}}$$

In this equation, V_{ij} is the deterministic part of utility U_{ij} , which represents the utility pupil (or parent) i derives from choosing school j . The total probability is obtained by the product of two probabilities. The first is the probability that school C is chosen from set (A, B, C); the second is the probability that school B is chosen from set (A, B) – after school C is removed from the choice set.

After the model is specified, we still need to define the choice set (or consideration set), i.e. the set of schools parents actually take into consideration and compare to each other. In principle, any school can be chosen. With ranked data, the easiest option is to include only the schools appearing in the individual's ranking in the choice set, and to limit ourselves to the variance between these schools. However, the observed rankings will be incomplete. Their ranking will only contain those schools parents really like, not those they do not want to attend. We therefore include all schools in every pupil's choice set. The schools that were ranked by the individual are assumed to be weakly preferred to the non-ranked ones. We do not assume anything about the relative appreciation of schools within the set of non-ranked schools. For two observed but non-ranked schools O_1 and O_2 , we get: $C \succcurlyeq B \succcurlyeq A \succcurlyeq O_1 \sim O_2$.

⁹ The majority of the 31 method schools are municipality schools (25). There are 2 method community schools, and 4 method schools of the free subsidized educational network (3 Catholic schools and 1 other).

Results

In the analyses we focus on three main components of parents' school preferences, namely the proximity of the school, the school composition and the educational network. Because of the limitations of the measure of perceived school quality (section 2.1), we add this variable to the analyses as a control variable. We perform stepwise rank-ordered logit regression analyses. In a first step we include the home/work-school distance into the model. In a second step, we add school composition and in a final step we analyze the role of the educational network. In each step, we include interaction effects with parental background variables to see if the preferences differ by socioeconomic status, home language and the composition of neighborhood schools (only for school composition).

Proximity

We first include the distance between home/work and school into the model (Table 3). We find that all parents have a preference for proximity (i.e. a school close to their home or work). This preference is stronger for parents with low SES (Model D-II) and parents with a non-Dutch home language (Model D-III). When we include the interaction with SES and home language in one model (Model D-IV), we find that especially parents with a non-Dutch home language prefer schools within a short distance. The interaction effect between distance and socioeconomic background is no longer significant in this model. Overall, we can conclude that proximity is important to all parents, but particularly important for parents with a non-Dutch background.

Table 3. Rank-ordered logit regression of school preferences with distance from home/work to school

	Model D-I	Model D-II	Model D-III	Model D-IV
Distance	-1.269 (0.014)***	-1.232 (0.017)***	-1.227 (0.015)***	-1.214 (0.017)***
Distance * Low SES		-0.115 (0.030)***		-0.053 (0.032)
Distance * Non-Dutch			-0.246 (0.039)***	-0.223 (0.041)***

*Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$*

School composition and school quality

In a second step, we add the socioeconomic and ethnic school composition to the analysis. The results are presented in Table 4. On average, parents have a preference for schools with a low presence of pupils with a low socioeconomic background and/or with a non-Dutch home language (Model C-I and Model C-II).

Interpretation of parameter estimates

We can use the parameter estimate of distance to interpret the effect for socioeconomic and ethnic school composition. For instance, the parameter estimate for ethnic composition is about 1.5 times higher than the estimate for distance in Model II. We can interpret the estimated effect sizes as follows: parents prefer a school with 0% pupils with a non-Dutch home language on 1.5 kilometers from their home over a school next to their home that has 100% pupils with a non-Dutch home language.

The influence of school composition on preferences differs according to parents' background (Model C-III and Model C-IV). Parents with a high SES have a stronger negative preference for the presence of low-SES pupils than parents with a low SES. Parents who speak Dutch at home have a stronger negative preference for non-Dutch speaking pupils than parents with a different home language. In Appendix A, we included a model with quadratic effects. This shows that the negative preference for low SES and non-Dutch speaking pupils occurs for schools where their shares are high already. In other words, people are indifferent or may even like a minor amount of socioeconomic or ethnic diversity in schools. Nevertheless, the higher the share of disadvantaged pupils, the more this preference turns negative. For disadvantaged parents, the ideal school composition is more disadvantaged than for advantaged parents.

The role of school composition for parents' school preferences declines after inclusion of the perceived school quality proxy variable in the model (Model C-V and Model C-VI).^{10,11} Note that this proxy measure of school quality is relatively crude (focusing on long-term study choices) and does not control for selection of students of different (observed and unobserved) backgrounds into schools. The preference for perceived school quality does not differ between parents from a high and low socioeconomic background (Model C-VII). We do however find that parents with Dutch as home language have a stronger preference for schools with a higher "quality" than non-Dutch speaking parents. According to Model C-VIII, non-Dutch speaking parents' school preferences are not significantly affected by the perceived school quality.¹²

¹⁰ In contrast, the size of the interaction effect estimates slightly increases.

¹¹ In additional analyses (not presented here) we found that the preference for ethnic and socioeconomic school composition is still significantly negative for parents with low SES or a non-Dutch home language after inclusion of school quality into the model.

¹² In appendix B, we further explore the heterogeneity in preferences for perceived school quality. We find that school quality becomes less important as the quality of the average school in the neighborhood increases. We also use a group-specific school quality measure, but this does not significantly alter the main results: all parents care about school quality, but this preference is stronger with higher-educated and Dutch-speaking parents.

Table 4. Rank-ordered logit regression of school preferences with distance from home/work to school, school composition and school quality

	Model C-I	Model C-II	Model C-III	Model C-IV	Model C-V	Model C-VI	Model C-VII	Model C-VIII
Distance	-1.312 (0.014)***	-1.291 (0.014)***	-1.279 (0.017)***	-1.247 (0.015)***	-1.337 (0.021)***	-1.297 (0.019)***	-1.339 (0.021)***	-1.305 (0.019)***
% Low SES	-1.929 (0.061)***		-2.613 (0.080)***		-1.944 (0.120)***		-1.872 (0.132)***	
% Non-Dutch		-2.010 (0.065)***		-2.703 (0.079)***		-2.194 (0.117)***		-2.052 (0.123)***
School quality					0.854 (0.138)***	0.609 (0.130)***	0.989 (0.172)***	0.882 (0.149)***
Distance * Low SES			-0.096 (0.031)***		-0.107 (0.038)**		-0.098 (0.038)**	
Distance * Non-Dutch				-0.240 (0.039)***		-0.307 (0.049)***		-0.276 (0.049)***
% Low SES * Low SES			1.761 (0.127)***		1.987 (0.127)***		1.773(0.220)***	
% Non-Dutch * Non-Dutch				2.175 (0.143)***		2.246 (0.168)***		1.592 (0.236)***
School quality * Low SES							-0.375 (0.287)	
School quality * Non-Dutch								-1.202 (0.309)***

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

We test the ‘trade-off’ hypothesis we discussed in the introduction of this study more in detail in Table 5. The results show that parents have a positive preference for schools with a high presence of members of their own social group (% same pupils) and a negative preference for schools with low SES or non-Dutch pupils. This latter preference declines when we add the measure of school quality to the model. So, to put it differently, parents with an advantaged background have a strong preference for their own group, whereas parents from a more disadvantaged background have to make a trade-off between the presence of their own group and (perceived) school quality which often coincides with the presence of high-status pupils. These findings align with the trade-off hypothesis.

Table 5. Rank-ordered logit regression of school preferences with distance from home/work to school, school composition, percentage of pupils with a similar background and school quality

	Model OA-I	Model OA-II	Model OA-III	Model OA-IV
Distance	-1.279 (0.017)***	-1.337 (0.021)***	-1.247 (0.015)***	-1.298 (0.019)***
% Low SES	-1.732 (0.063)***	-0.951 (0.107)***		
% Non-Dutch			-1.616 (0.072)***	-1.071 (0.109)***
% Same pupils	0.880 (0.063)***	0.994 (0.074)***	1.088 (0.072)***	1.123 (0.084)***
School quality		0.854 (0.137)***		0.609 (0.130)***
Distance * Low SES	-0.096 (0.031)**	-0.107 (0.038)**		
Distance * Non-Dutch			-0.240 (0.039)***	-0.307 (0.049)***

*Note: *p<0.05; **p<0.01; ***p<0.001*

We also analyze if the preferences for school composition differ according to the neighborhood school composition. We present the results of the analyses in Table 6. We only find a significant effect of socioeconomic neighborhood school composition; the effect for neighborhood composition on the language dimensions is not significant ($p=0.069$).¹³ We find that the preferences for socioeconomic school composition are stronger when parents live in a neighborhood with many low-SES schools. To illustrate, we compute the preferences of low and high SES parents for a school with 33% and 66% pupils with low SES in two hypothetical residential areas: one where schools have on average 66% pupils with low SES and one where schools have on average 33% pupils with low SES. The estimated preferences are presented in Figure 3. If parents live in a more socioeconomically advantaged neighborhood, they tend to be more indifferent to school composition. In a more disadvantaged neighborhood, high-SES parents have a strong negative preference for schools with many low-SES pupils. They are, in other words, more likely to prefer a school outside of their own neighborhood for their children.

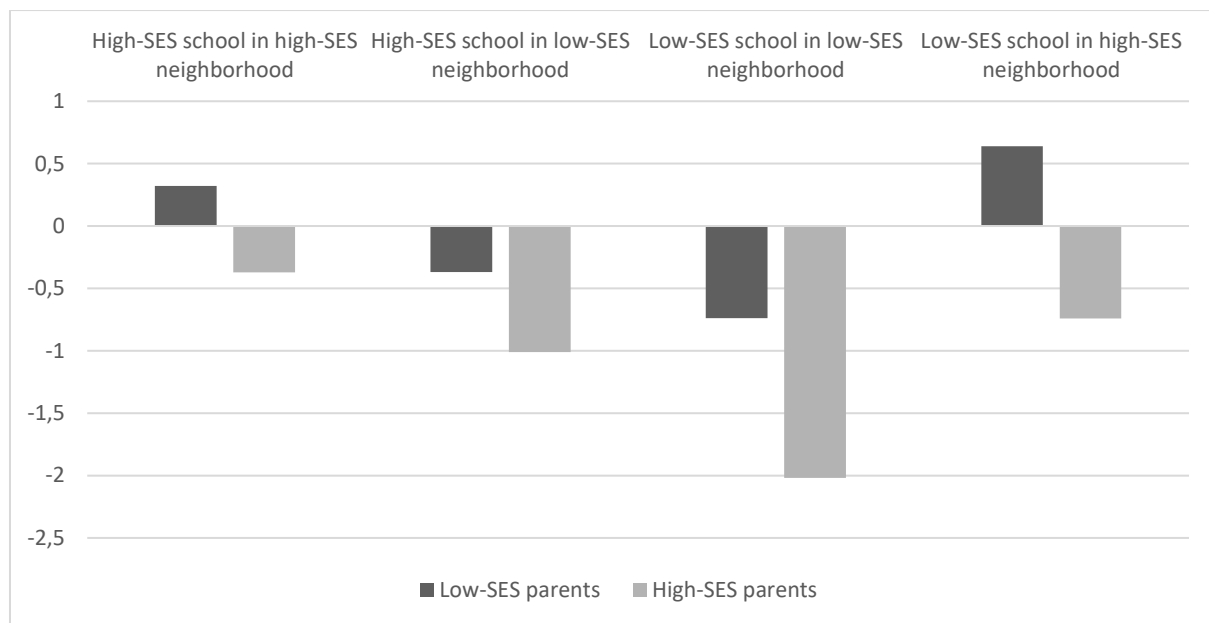
¹³ Adding a quadratic effect for group composition confirms these results: we still find a highly significant effect for socioeconomic neighborhood composition, but no longer on the language dimension (table in Appendix A).

Table 6. . Rank-ordered logit regression of school preferences with distance from home/work to school, school composition and average neighborhood school composition

	Model NSC-I	Model NSC-II
Distance	-1.467 (0.020)***	-1.400 (0.017)***
% Low SES	0.813 (0.535)	
% Non-Dutch		-2.244 (0.323)***
Distance * Low SES	-0.042 (0.034)	
Distance * Non-Dutch		-0.217 (0.043)***
% Low SES * Low SES	2.245 (0.895)*	
% Non-Dutch * Non-Dutch		2.858 (0.699)***
Average % low SES* % Low SES	-5.867 (0.884) ***	
Average % non-Dutch* % Non-Dutch		-1.411 (0.775)
% Low SES * Average % low SES* Low SES	-0.460 (1.437)	
% Non-Dutch * Average % non-Dutch * Non-Dutch		-1.323 (1.595)

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Figure 3. Preferences for school composition according to parents' socioeconomic background and the average socioeconomic school composition in the neighborhood.



Note: High-SES school= 33% low-SES pupils; Low-SES school = 66% low-SES pupils; High-SES neighborhood = mean of 33% low-SES pupils in neighborhood schools; Low-SES neighborhood = mean of 66% low-SES pupils in neighborhood schools.

Educational network

In a final model we examine the role of the educational network. We include the distance, composition, quality and educational network in the analyses. The results are presented in Table 7.

Parents have a small preference for non-method schools of the Flemish community over non-method schools of the local government. They have a small negative preference for method schools compared to non-method schools of the local government. This negative preference is stronger for low-SES

parents. Non-Dutch speaking parents have a stronger positive preference for schools of the subsidized free network than Dutch-speaking parents.

The preferences for educational network are relatively small compared to those for distance and school composition. To illustrate this, comparing the estimates for educational network with the estimate for distance in Model EN-I, parents (on average) are prepared to go 200 meters for a school of the Flemish community compared to a school that is run by the local government. The results for distance and school composition did not change by including educational network into the analyses.

Table 7. Rank-ordered logit regression of school preferences with distance from home/work to school, school composition, school quality and educational network

	Model EN-I	Model EN-II
Distance	-1.338 (0.021)***	-1.304 (0.019)***
% Low SES	-2.229 (0.132)***	
% Non-Dutch		-2.242 (0.125)***
School quality	0.865 (0.145)***	0.824 (0.138)***
Educational network (ref. Local school)		
Community school	0.269 (0.067)***	0.094 (0.061)
Method school	-0.282 (0.059)***	-0.397 (0.054)***
Subsidized free school	0.099 (0.060)	-0.072 (0.051)
Distance * Low SES	-0.141 (0.038)***	
Distance * Non-Dutch		-0.346 (0.049)***
% Low SES * Low SES	1.761 (0.170)***	
% Non-Dutch * Non-Dutch		1.922 (0.192)***
Community school * SES	0.107 (0.118)	
Community school * Non-Dutch		0.118 (0.154)
Method school * low SES	-0.386 (0.104)***	
Method school * Non-Dutch		-0.117 (0.119)
Subsidized free school * SES	-0.074 (0.093)	
Subsidized free school * Non-Dutch		0.239 (0.106)*

*Note: *p<0.05; **p<0.01; ***p<0.001*

Conclusion

This paper aimed at getting a better insight in the pre-primary school preferences of parents in Ghent, an urban area in Flanders. We first give an overview of the main findings of the analyses. After this, we discuss the limitations and implications of the research findings.

First, we found that the direction of preferences for distance and school composition is very similar for all parents. All parents prefer a school in close proximity to their home or work. The preference for proximity can be motivated by the high costs of commuting and the local embedment of schools (Jacobs, 2013). Furthermore, parents all share to some extent a preference for schools with a high SES and Dutch-speaking student body.

Second, the intensity of these preferences differs according to parents' socioeconomic and ethnic background. Parents with a high socioeconomic background or who speak Dutch at home have a stronger preference for schools with members of their own 'social group' compared to low SES or non-Dutch speaking parents. Negative preferences for low SES and non-Dutch speaking pupils at school are more outspoken when the average school in the parents' choice set contains more such disadvantaged students.

Two hypotheses have been formulated in the research literature for the weaker preference for school composition among low-status parents. The out-group avoidance hypothesis claims that low-status parents are less invested in their children's educational career compared to high-status parents. Only high-status parents have a strong preference to avoid schools with many low-status pupils. The trade-off hypothesis on the other hand poses low-status parents have to make a trade-off between high-quality schools (which often coincides with the presence of pupils from a more advantaged background) and schools with a high proportion of pupils with a similar background. We tested these two hypotheses more in detail in this paper. The findings support the trade-off hypothesis. All parents have a preference for their own social group and, at the same time, for schools with more pupils with high SES or Dutch as home language. This latter preference declines when we control for school quality which suggests that the proportion of high-status pupils is an indicator of (perceived) school quality for parents. This suggests that low-status parents have to make a trade-off between school quality and a preference for their own group.

Third, the results suggest that dispersions in school preferences are the largest for home language. Especially the preferences for distance and school quality appear to differ stronger between Dutch and non-Dutch speaking parents than between low and high SES parents. Non-Dutch speaking parents have a stronger preference for nearby schools and they appear indifferent to school quality, compared to Dutch-speaking parents. Based on the research literature we hypothesize that these different preferences may be explained by a lack of information about available schools outside their neighborhood and school quality among non-Dutch speaking parents (Ball, Vincent, & Ball, 1998; Burgess, Greaves, Vignoles, & Wilson, 2014; Kristen, 2008; Teske & Schneider, 2001). This lack of information can be linked to cultural capital theory on educational inequalities (Bourdieu, 1986;

Bourdieu & Passeron, 1970). More research is necessary to test this hypothetical explanation in the Flemish context.

Fourth, the preferences for educational network were very small and differed slightly according to parents' socioeconomic and ethnic background, after controlling for distance and school composition.

This study is prone to some limitations. First, we estimate preference in an urban setting. It is not clear whether they would be the same in a more rural area. Still, we exploited variation in the school composition choice set of parents (some parents live in disadvantaged neighborhoods, others in more advantaged ones). Second, we included a very crude measure of school quality. Arguably, our measure comes close to perceived school quality, as parents are unlikely to observe school-added value. Additionally, we did not have information on other aspects of school quality, such as school climate or pupil guidance. Third, we report correlations and not causal relationships in the analyses. This should especially be kept in mind when interpreting the results for neighborhood school composition. It is very likely that parents who are more tolerant toward low socioeconomic groups or non-Dutch speakers, select themselves in more disadvantaged neighborhoods. This may explain why we do not find an impact of neighborhood ethnic composition on school composition preferences. More research is necessary to disentangle the endogenous nature of the neighborhood composition effect. Finally, it remains uncertain whether these findings can be transposed to other educational levels. This can be an interesting topic for future research.

The results of this study have a number of practical implications for desegregation policies.

First, the results show that school segregation proceeds at least partially from residential segregation given that all parents have a positive preference for proximity of a school. Policy-makers should therefore in the first place give sufficient attention to the reduction of residential segregation, as this is one of the main mechanisms driving school segregation. However, other school characteristics also impact parents' school preferences, such as school composition or school quality. This implies that neighborhood desegregation (i.e. neighborhoods becoming more socioeconomically or ethnically mixed) does not always imply school desegregation. Particularly high-SES parents who live in more socioeconomically disadvantaged neighborhoods have a stronger negative preference for schools with many low-SES pupils, and they are more likely to choose a school outside their neighborhood. Neighborhood gentrification thus not translates automatically into more (socioeconomic) diversity in neighborhood schools.

Therefore, it is necessary that desegregation policies have attention to parents' preferences for school composition. These policies should in the first place target high-SES and Dutch-speaking parents, as they have stronger preferences for more "advantaged" school composition (also after controlling for the perception of school quality). As mentioned earlier, high-SES parents who live in neighborhoods with more low-SES pupils are more likely to send their children to a school outside their neighborhood, because they are more sensitive to the socioeconomic composition of schools. It is important that high-SES parents in low-SES neighborhoods receive objective information about the schools in their neighborhood so they can make a well-informed school choice. Policymakers in municipalities with high levels of school segregation can support organizations, such as 'School in Zicht', that aim at improving the social mix in schools, or organize such information campaigns (e.g. cities of Ghent) themselves.

Finally, the preferences for proximity and school composition can explain why liberating school choice is often linked to higher school segregation (Bifulco & Ladd, 2006; Denessen et al., 2005; Schneider, Schuchart, Weishaupt, & Riedel, 2012). Nevertheless, a reduction of school choice would not necessary lead to lower segregation in the long run. Without free school choice, parents may make different housing decisions, or may prefer to attend schools charging high tuition fees (for a review on the link between house prices and school quality, see Black and Machin (2011)). Therefore, we would suggest that policy-makers focus on information and group enrollment campaigns to decrease school segregation (in addition to reducing residential segregation) instead of diminishing parents' freedom of school choice.

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APPENDIX

Appendix A. School composition as a quadratic term

Appendix A1. Rank-ordered logit regression of school preferences with distance from home/work to school and school composition (linear and quadratic)

	Model A-I	Model A-II
Distance	-1.274 (0.017)***	-1.249 (0.015)***
% Low SES	0.556 (0.382)	
% Low SES ²	-2.840 (0.337)***	
% Non-Dutch		-1.540 (0.257)***
% Non-Dutch ²		-1.506 (0.320)***
Distance * Low SES	-0.100 (0.031)***	-0.240 (0.039)***
% Low SES * Low SES	0.783 (0.541)	
% Low SES ² * Low SES	1.120 (0.655)	
% Non-Dutch * % Non-Dutch		1.744 (0.512)**
% Non-Dutch ² * % Non-Dutch		0.717 (0.560)

*Note: *p<0.05; **p<0.01; ***p<0.001*

Appendix A2. Rank-ordered logit regression of school preferences with distance from home/work to school, school composition (linear and quadratic) and average neighborhood school composition

	Model NSC-I	Model NSC-II
Distance	-1.453 (0.020)***	-1.397 (0.017)***
% Low SES	2.289 (0.607)***	
% Low SES squared	-2.439 (0.362)***	
% Non-Dutch		-1.754 (0.364)***
% Non-Dutch squared		-1.152 (0.343)**
Distance * Low SES	-0.049 (0.034)	
Distance * % Non-Dutch		-0.219 (0.043)***
% Low SES * Low SES	1.761 (1.012)	
% Low SES squared * Low SES	1.094 (0.576)	
% Non-Dutch * % Non-Dutch		2.552 (0.759)**
% Non-Dutch squared * % Non-Dutch		0.758 (0.600)
Average % low SES * % Low SES	-3.788 (1.001)***	
Average % non-Dutch * % Non-Dutch		-1.419 (0.857)
% Low SES * Average % low SES * Low SES	-1.484 (1.581)	
% Non-Dutch * Average % non-Dutch * % Non-Dutch		-1.900 (1.730)

*Note: *p<0.05; **p<0.01; ***p<0.001*

Appendix B. Further exploration of school quality

In appendices 3 and 4 below, we further explore preferences for school quality.

In appendix B1, we add an interaction effect with average school quality. This is constructed in a similar way as the variable average school composition (i.e. weighting neighborhood schools using a linear distance-decay function that assigns weight 1 at distance 0 and weight 0 at 3 km). If school quality in the individual's choice set is low, school quality will matter more. From model Q-I and Model Q-II, we conclude that both for low SES and non-Dutch speakers, school quality is less important. This effect is more pronounced for non-Dutch speakers. In model Q-III and Q-IV, we add additional variables to better understand where this heterogeneity stems from. We create a quality measure that takes group composition into account. For each school, we look at children with low-educated mothers or from non-Dutch speaking backgrounds. For each group, we calculate how many progress to the academic track in secondary education. It would make sense for different social groups to only consider how well peers from their own group did at the school. This may also be the dimension on which parents have more information. However, including these new variables (and interaction effects with individual background) does not indicate that low-SES parents or non-Dutch speaking parents have a preference for schools where pupils from their own social group do better. If anything, the effect is negative. Findings do not change when we include quadratic preferences for group composition.

In appendix B2, we include additional school characteristics, namely child care (operationalized in hours of child care offered to parents, centered around the modus of child care offered between 7am and 6pm) and school size.

Appendix B1. Further exploration of school quality (1): group-specific school quality

	Model Q-I	Model Q-II	Model Q-III	Model Q-IV
Distance	-1.518 (0.024)***	-1.461 (0.022)***	-1.513 (0.024)***	-1.459 (0.022)***
Distance * Low SES	-0.050 (0.041)		-0.050 (0.041)	
Distance * Non-Dutch		-0.217 (0.051)***		-0.210 (0.052)***
% Low SES	-1.965 (0.133)***		-2.096 (0.136)***	
% Non-Dutch		-2.110 (0.125)***		-2.308 (0.133)***
% Low SES * Low SES			1.866 (0.224)***	
% Non-Dutch * Non-Dutch		1.674 (0.238)***		1.817 (0.253)***
School quality	5.661 (0.612)***	3.979 (0.610)***	6.220 (0.627)***	3.951 (0.612)***
School quality * Avg school quality	-9.099 (1.137)***	-6.022 (1.160)***	-8.300 (1.160)***	-6.078 (1.166)***
School quality * Low SES	-0.632 (0.029)*		-1.160 (0.376)**	
School quality * Non-Dutch		-1.254 (0.312)***		-1.039 (0.426)*
School quality (low educ)			-1.385 (0.195)***	
School quality (foreign language)				-0.181 (0.140)
School quality (low educ) * Low SES			0.731 (0.344)*	
School quality (foreign language) * Non-Dutch				-0.099 (0.342)

*Note: *p<0.05; **p<0.01; ***p<0.001.*

Appendix B2. Further exploration of school quality (2) with child care and school size

	SS-1	SS-2	CC-1	CC-2
Distance	-1.322 (0.021)***	-1.286 (0.019)***	-1.336 (0.021)***	-1.298 (0.019)***
% Low SES	-2.339 (0.125)***		-1.832 (0.122)***	
% Non-Dutch		-2.258 (0.118)***		-2.142 (0.125)***
School quality	0.610 (0.138)***	0.631 (0.132)***	0.956 (0.139)***	0.651 (0.135)***
Childcare			0.154 (0.032)***	0.041 (0.034)
School size	0.005 (0.000)***	0.004 (0.000)***		
Distance * Low SES			-0.109 (0.038)**	
Distance * Non-Dutch		-0.326 (0.049)***		-0.307 (0.049)***
% Low SES * Low SES	2.080 (0.155)***		2.014 (0.149)***	
% Non-Dutch * Non-Dutch		2.258 (0.118)***		2.251 (0.168)***
School size * Low SES	0.002 (0.001)*			
School size * Non-Dutch		0.001 (0.001)		

*Note: *p<0.05; **p<0.01; ***p<0.001. Interaction effects between child care and low SES/Non-Dutch are not significant.*

Appendix C. Educational level of mother

In appendix C1 and C2, we conduct separate analyses for socioeconomic status with educational level of the mother as the only indicator. We distinguish between low education (no degree of secondary education), medium education (only degree of secondary education) and high education (degree of higher education). In appendix 5, we identify low SES as pupils with a lowly educated mother. In appendix 6, we identify low SES pupils as pupils with a lowly or medium educated mother.

If we compare the results in the two appendices, we can draw several conclusions. First of all, the direction and significance of the effects remain stable if we change the operationalization of educational level of the mother. Second, the absolute size of the estimates differs slightly in the two tables. For preference for school composition, we see that the preferences for % of pupils with a lowly educated mother are more negative than the preferences for % of pupils with lowly and medium educated mother. For school quality, we find that highly educated parents have a strong preference for school quality (but this preference is not significantly lower for lowly and medium educated). For educational network, the results show that the negative preference for method schools (compared to municipality schools) is the strongest for pupils with a lowly educated mother. Overall, changing the operationalization of mother's educational level does not alter the main conclusions of this study.

Appendix C1. Rank-ordered logit regression of school preferences with distance from home/work to school, school composition, and educational network: mother with secondary education degree vs mother without secondary education degree

	Model EM-I	Model EM-II	Model EM-III	Model EM-IV
Distance	-1.239 (0.015)***	-1.276 (0.015)***	-1.331 (0.019)***	-1.334 (0.019)***
% Low SES		-2.775 (0.084)***	-2.008 (0.139)***	-2.393 (0.153)***
School quality			0.635 (0.157)***	0.581 (0.168)***
Educational network (ref. Local school)				
Community school				0.180 (0.060)***
Method school				-0.436 (0.053)***
Subsidized free school				-0.050 (0.050)
Distance * Low SES	-0.236 (0.044)***	-0.224 (0.045)***	-0.226 (0.055)***	-0.311 (0.058)***
% Low SES * Low SES		2.202 (0.174)***	2.049 (0.307)***	1.587 (0.350)***
School quality*Low SES			-0.410 (0.381)	-0.442 (0.417)
Community school * SES				0.137 (0.164)
Method school * low SES				-0.485 (0.140)**
Subsidized free school * SES				0.000 (0.115)

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Appendix C2. Rank-ordered logit regression of school preferences with distance from home/work to school, school composition, and educational network: mother with higher education degree vs mother without higher education degree

	Model EM-1	Model EM-2	Model EM-3	Model EM-4
Distance	-1.228 (0.017)***	-1.274 (0.017)***	-1.331 (0.021)***	-1.333 (0.021)***
% Low SES		-2.532 (0.079)***	-1.671 (0.134)***	-2.034 (0.148)***
School quality			1.117 (0.177)***	1.055 (0.187)***
Educational network (ref. Local school)				
Community school				0.274 (0.068)***
Method school				-0.323 (0.060)***
Subsidized free school				0.061 (0.060)
Distance * Low SES	-0.129 (0.030)***	-0.108 (0.031)**	-0.122 (0.039)***	-0.152 (0.039)***
% Low SES * Low SES		1.803 (0.124)***	1.793 (0.224)***	1.495 (0.274)***
School quality*Low SES			-0.340 (0.300)	-0.443 (0.316)
Community school * SES				0.107 (0.119)
Method school * low SES				-0.373 (0.106)***
Subsidized free school * SES				-0.040 (0.094)

*Note: *p<0.05; **p<0.01; ***p<0.001.*