Stockholm University

Stockholm University Linnaeus Center on

Social Policy and Family Dynamics in Europe, SPaDE

School Choice Motives:

The Effects of Class and Residential Context

Bo Malmberg, Eva Andersson and Zara Bergsten

Working Paper 2013: 11

School Choice Motives:
The Effects of Class and Residential Context*

Bo Malmberg

Department of Human Geography, Stockholm University

Eva Andersson

Department of Human Geography, Stockholm University

Zara Bergsten

Institute for Housing and Urban Research, Uppsala University

Abstract: Increased school choice is a prominent feature of reformed school systems in many countries and has led to greater school segregation and to larger differences in results between schools. In this paper we demonstrate that parental motives for choosing schools are strongly influenced by the social and ethnic composition of their own and their adjacent neighborhoods. Contrary to most other studies, we find contextual effects that are stronger than the effects of the parents' own social and ethnic background. We use a survey of 3 749 lower secondary school children to study parents' views on school choice. When measuring context we explore a new method based on individually defined and scalable neighborhoods,. The values are used in a traditional factor analysis where factors show a spatial variation in socio-demographic context. Regression results for school choice motives are more strongly influenced by context than those of earlier studies. For example, for parents in so-called 'elite concentrations' and parents in areas with 'visible minorities nearby', middle-class based preferences seem to dominate. Such areas have negative effects on attending the assigned schools; on choosing the closest-to-home school and on stating that municipality has influenced the decision. Supported by Sampson's' ideas of coordinated perceptions among inhabitants in the same neighborhoods we explain these surprisingly strong contextual effects with the idea that school choice motives are especially sensitive to neighbors ideas and easily influenced as measured preferences in a survey.

Key words: school choice, contextual effects, Equipop

Introduction

Since the 1980s, the introduction of open enrolment, charter schools and vouchers has greatly expanded the role of school choice in a range of countries including the UK and the United States (Gorard and Smith 2004). This trend has generated a wealth of empirical studies that have focused on different aspects of school choice and its consequences (Garcia 2008; Renzulli and Evans 2005; Noreisch 2007; Allen 2007; Rangvid 2007; Waslander and Weide 2010).

These studies have unearthed a number of arresting findings. First, contrary to what proponents of school choice have argued, initiatives to increase school choice have tended to increase social segregation (Oría et al. 2007). In the early stages of these schemes it was argued that allowing parents to select non-neighborhood schools would make it possible to reduce school segregation that results from residential segregation. This possibility has not been realized (Allen 2007; Östh, Andersson, and Malmberg 2013). Instead, studies point to increasing school segregation in terms of ethnicity, socio-economic background and ability e.g. (Noreisch 2007).

Second, an important driving force for this increasing segregation can be found in class-based differences in the propensity to take advantage of school choice. It is demonstrated that while middle-class families actively seek out and select alternatives to neighborhood schools, working-class families are more likely to select a school mainly on the basis of distance considerations (Allen 2007; Butler et al. 2007; Reay and Ball 1997).

Third, even if parents who choose a school stress the importance of school quality in influencing their decision, the main factor influencing the decision, consciously or unconsciously, is the composition of the student body (Lankford and Wyckoff 2001; Theobald 2005; Holme 2002). White, middle-class parents, for example, tend to select schools with both low shares of minority students and few students from low-income households (Waslander and Weide 2010).

Fourth, choice of school is influenced by local, residential demographic composition. The propensity to select non-neighborhood schools is higher in areas with a mixed population than in areas with a homogenous middle-class population belonging to the ethnic majority.

In an earlier study using Statistics Sweden's register data and focusing on travel-to-school distances, has found results that tie in closely with the patterns discussed in the review by Waslander and Weide (2010), including contextual effects on school choice (Andersson, Malmberg, and Östh 2012). Controlling for the location of schools, students from households with parents who has completed tertiary education travel further than students from low-income and visible minority households. Moreover, for white middle-class groups, travel-to-school distances are higher when they live in mixed neighborhoods with higher shares of visible minority and low income households. As a consequence, school choice in Sweden has led to increased school segregation. (Andersson, Malmberg, and Östh 2012) Studies based on register data do not, however, provide information about the motives and details for families' choice of schools. In the present paper we therefore use data from a survey of parents of 4th grade to 6th grade students both to analyze the motives parents have for selecting different schools and to discover the characteristics of parents making the decision.

In analyzing the survey results, our primary aim is to find out whether the motives for school choice are influenced by geographical context. If school choice motives are strongly influenced by geographical context this can help to explain why increased choice tend to increase school segregation. Moreover, strong contextual effects on school choice motives would also indicate that parental preferences with respect to schools are shaped not only by their own socio-economic status but also by collective processes at the neighborhood level.

Our study, thus, will also contribute to the wider literature on contextual effects. This literature on neighborhood effects, for instance, suggests that middle class values and preferences are contagious to other parts of a population in an area, i.e. working class (Wilson 1987). Besides contagion, other mediating mechanisms are suggested in the literature, such as social norms, role models, collective socialization, social control, social capital, perception of opportunity and institutional characteristics (Ainsworth 2002; Galster 2007). For instance perceptions of opportunity will vary throughout the different neighborhoods, probably with social class. Likewise, institutions like schools in neighborhoods will vary in approach and expectations of student achievements (Bauder 2001). These mechanisms will not be measured directly but they explain why we expect there to be a relationship between residential context and the motives and attitudes behind school choice.

With the publication of Robert Sampson's "Great American City: Chicago and the Enduring Neighborhood Effect" (Sampson 2012), the debate on how to conceptualize urban neighborhoods as building blocks of a wider social structure has been given a new impetus (see e.g., Massey 2012). According to Sampson, individual behavior and well-being are strongly influenced by social norms and coordinated beliefs that are reproduced at the neighborhood level. He supports this argument with extensive evidence from a long-term, large-scale study of Chicago and with a thorough discussion of current explanatory models in the social sciences. Sampson argues that there is a need to turn away from neighborhood effects with individualistic reductionism and a focus of causal questions, towards attempts to understand the formation of ideas, norms and behaviors. The use of surveys is one possible way of understanding the motives and preferences of inhabitants in the same neighborhood. Here, we will apply Sampson's approach not to cycles of poverty, health or crime levels but to analyze contextual influences on school choice. Building on Sampson's analysis we propose that neighborhood-level coordination of ideas about school quality could be one reason why school choice tends to result in increased school segregation.

Given this theoretical interest of contextual effects on individual motives we will, in this paper, put special emphasis on how to measure neighborhood-level social and ethnic composition. Traditional methods using the population composition of some pre-defined spatial unit such as wards or blocks have been shown to be prone to errors because measures of residential context in many cases can be more influenced by how the boundaries of the spatial unit have been drawn than by the residential set-up (this is known as the modifiable areal unit problem (MAUP)). Moreover, if measures based on pre-defined spatial units are used then it is implicitly assumed that it is only conditions within this spatial container that are relevant and not a wider spatial context.

Next, after a brief discussion of the Swedish school system we present that data and methods used in our study. Special attention is given to the measurement of context using individualized

neighborhoods and principle components analysis. This is followed by a results section and a concluding discussion.

The Swedish school system, data and methods

Over the past two decades, the Swedish school system has changed rapidly. Since 1992 a number of reforms have been implemented with the aim of providing more competition and a higher degree of market control. School vouchers, school choice and private stakeholders with independently run schools are important elements of the new policy. Meanwhile, attention has focused on deteriorating performance and increasing social and ethnic segregation.

In the years following these changes, the country's few independent schools played a minor role in the school system. According to the National Agency for Education (2010), 3.2% of secondary school graduates attended independent schools in the year 2000. This percentage increased to 6.3% in 2003 and 8.5% in 2006. In 2011/12 the percentage of students in independent secondary schooling was 13 per cent (The Swedish National Agency for Education 2013). The gradual increase in the number of independent schools and the subsequent reduction in the number of students in public schools have triggered competition between schools. In order to attract students, most of the independent schools advertise themselves as pedagogically specialized. The profiling includes focusing on specific school subjects (sports, language, etc.), using specific pedagogical methods (such as Montessori), or adhering to particular confessional orientations (Friskolornas Riksförbund 2010). As a response, many public schools also now make use of pedagogical profiles to attract students. Common profiles among public schools include music, drama or sports orientations. As a result of this increasing competition, parents and students receive advertisements from the different schools (public and independent schools), and parents fill in forms in which they can indicate the schools they prefer. These choices typically are made when the child is about to start first grade, or when the student is about to leave the third, fifth, sixth or ninth grades.

Data

In order to estimate contextual effects on school choice motivation we employ a logistic regression approach using survey answers as dependent variables with individual background variables and contextual variables as explanatory variables. The survey answers come from a questionnaire distributed by Statistics Sweden. The individual background variables from the respondents are based on register data from Statistics Sweden. The contextual variables are factor scores based on contextual measurements using individualized, individual-centred neighborhoods. Below, the three types of data and their use are described in more detail.

Data on school choice motives

The analysis in the present article is mainly based on survey data on school choice collected in the spring and fall of 2012. The survey was directed towards 6900 parents of lower secondary students ages 11 to 13 years, in eight Swedish municipalities. Previous Swedish school choices studies have mostly focused on the process of choosing secondary school. However, there are indications that the pattern of school choice has changed during recent years (Östh, Andersson, and Malmberg 2013),

and that parents are involved in the process of choosing a school for their child even while the child is in lower secondary school and before he or she starts secondary school. Changes within the Swedish school system give rise to questions on what influences parents' thinking and how they reason and act when it comes to their child's schooling.

The aim of the survey was to study parents' views on school choice policies and the factors that influence school choice, and also to study how school choice decisions are made (for example which actors are important), and how all these factors taken together shape the actual spatial patterns of school choice. Unlike previous studies this study aims to more directly study the relationship between the residential context and choice of school. Does the neighborhood environment influence views on school choice and the actual school choices made?

The survey was conducted in cooperation with Statistics Sweden (SCB). Statistics Sweden selected the survey population randomly from a population of lower secondary students in eight municipalities based on their neighborhood affiliation. This means that unlike many other studies our study population is selected on the basis of their neighborhood of residence and not on the school that they attend, thereby enabling us to study how different neighborhood factors impact parents' views on schooling and school choice. The population was stratified on local areas based on three type areas: areas dominated by Swedish born; mixed areas; and areas with a high percentage of foreign-born individuals. In total 24 strata were created (SCB 2012). The population was children born in 1999, 2000 or 2001 and registered as living in the municipalities of Stockholm, Göteborg, Malmö, Uppsala, Västerås, Botkyrka, Nacka and Norrköping.

The propensity to take part in survey studies has steadily decreased over time. The response rate of 55% is therefore to be viewed as acceptable as it corresponds to the common response rate of survey studies today. The final survey population is still large and consists of 3749 lower secondary school students. The survey data is complemented with register data from Statistics Sweden. The register data consists largely of socioeconomic data on parents' disposable income, educational level, household composition, unemployment and social allowance. Besides data on the parents there is information on the child's country of birth.

Respondents to this survey have higher education, higher disposable income, have higher employment rates and are not receiving social allowances in a high degree, which means that the study population is relatively resource rich compared to the original selected survey population. However, the gap (respondents – non-respondents) between students born in Sweden and non-Swedish born students is even larger than for the mentioned socioeconomic variables. Mostly resource rich parents answered the survey, also among Swedish and foreign born students.

Table 1. Composition of responses and original sample.

Respondents' background	n	Share	Share in sample
Country of birth			
Swedish born	3323	88.6	86.7
Non Swedish born	426	11.4	13.3
Educational level			
Lower secondary school	169	4.0	9.4
Secondary school	1002	26.7	32.1
University degree	2578	68.8	58.5
Income			
Missing	26	0.0	1.1
-1 543	928	24.8	33.7
1 544-2 936	1867	49.8	45.0
2 937-	928	24.8	20.2
Unemployment			
Missing	26	0.0	1.1
Employed	3343	89.2	87.3
Unemployed	380	10.1	11.6
Social allowance			
Missing	26	0.0	1.1
No social allowance	3471	92.6	87.6
Social allowance	252	6.7	11.3

In the analysis we use responses to five of the survey question as outcome variables: Question 11, 8, 4, 28, and 19, see Table 2.

Question 11 (Q11) is phrased “What is the main reason your child is attending the current school?”, and has 16 fixed alternatives for respondents to choose from. The first category of answers deals with social factors, including whether the child has friends or family at the same school, whether there are other children with similar interests, the ethnic background of students, and students’ academic performance. The second category relates to the school's location (whether it is close to home or easy to access with public or private transport), the school's profile and reputation, the quality of education, whether the school environment feels safe and calm, whether the reason for the choice of school has to do with the school's ability to take care of students with special needs. The third category has to do with whether the main reason for choosing the current school is influenced by conditions at a prior school, such as bullying or inadequate teaching or disorder at the school. These responses together form a 17th alternative of having changed from a former school, see Table 2.

Table 2. Questions and response alternatives used as dependent variables.

Survey question	***Response alternatives***
Q11 What is the main reason your child is attending the current school?	Assigned school
	School's reputation
	Proximity
	Transport
	Siblings
	Friends
	Common interests
	Native speaking students
	School profile
	Good teachers
	Stud achievement
	School safe and calm
	Special need
	Bullying
	Inadequate teaching
	Disorder
	Former school
Q 8 Is the current school your closest available school	School closest to home
Q 4 What type of school does your child attend? Public or independent?	Independent school
Q 28 Would you choose a school, if the school was located close to home, but had few Swedish speaking students?	Proximity, few native speaking
Q 19 Who has influenced which school your child attends?	Parents decision
	Childs decision
	Municipality's recom.

Question 4 deals with the type of school (Q4), asking whether the school is a public or an independent school. In the regression analyses independent schools are treated as the reference category. Question 8 asks if "the current school is the closest to home available by choice" (Q8), with "yes" (the nearest school) defined as the reference. Question 28 is, unlike the previous questions, formulated as a hypothetical question, where parents are faced with a dilemma. Parents are asked if they would choose a school that is located close to home but has few Swedish speaking students. The variable is constructed as a dummy variable, where those who answer that they would choose the school in spite of the domination of non-Swedish speaking students are defined as the reference category. Question 19 asks who has influenced which school your child attends; whether it was the parents themselves, the child or the municipality.

With 17 alternative answers for Question 11, 3 alternatives for Question 19, and one alternative for Question 8, 4, and 28, we get a total of 23 dependent variables for which we will estimate separate logit models.

Individual background variables

From earlier studies we know that individuals' socioeconomic and ethnic backgrounds influence their school choices, especially parents' educational level (see review by Waslander and Weide 2010). Here the socioeconomic variables have for the most part been constructed as dummy variables; parents' educational level is measured as the existence of at least one parent with a university degree, unemployment and social allowance as one or more parents unemployed or respectively on social allowance. The impact of household composition on school choice is measured as the existence of households headed by a single mother. The family's disposable income is defined as their income percentile. The final individual background variable analyzed is the influence of the child's country of birth. The variable is constructed to measure the importance of being a first generation immigrant; the reference category is therefore "child born in Sweden", for variables "child born western world" and "child born in visible minority countries" (countries in South America, Asia and Africa).

Table 3. Descriptive statistics for individual level data.

Individual level variables, survey population	N	Range	Min	Max	Proportion	Std. Dev.
Social allowance (parents)	3715	1	0	1	0.07	0.25
University educated (parents)	3715	1	0	1	0.69	0.46
Unemployed (parents)	3715	1	0	1	0.10	0.30
Single mother	3715	1	0	1	0.18	0.38
Western world (born)	3715	1	0	1	0.04	0.21
Visible minority (born)	3715	1	0	1	0.07	0.25
Disposable income percentile (parents)	3715	99	1	100	50.49	28.87

Contextual variables

Contextual influences on the school choice variables will be estimated using factor scores resulting from a principle component analysis of 88 different measures of neighborhood context. These 88 measures of context have been obtained using newly developed software, *Equipop*, which computes aggregate statistics for individualized, scalable neighborhood on the basis of geocoded, register-based individual level data.

Our study, thus, introduces two innovations. The most important innovation is our use of individually defined and scalable neighborhoods. Using a factor-analysis for summarizing contextual information is more standard, but our improvement is that we use this approach on spatial variation in socio-demographic context as a means to manage the wealth of information resulting from scalability. We describe these innovations in more detail below.

Contextual variables based on individualized, scalable neighborhoods

Earlier studies have, in general, used fixed geographical subdivisions such as census tracts, zip code areas, parishes, or small area market statistics (SAMS) tracts, to measure neighborhoods context. We

have instead used Equipop and Statistics Sweden's register data containing information on individual residential location to compute contextual variables based on the population composition among an individual's nearest 12, 25, 50, or any grouping up to 12,800 neighbors in successive doublings of the population threshold.

The EquiPop software was developed by John Östh in order to address the modifiable areal unit problem (MAUP) in segregation measurement (Östh, Malmberg, and Anderson 2011). Traditional measures of segregation such as the isolation index are strongly dependent on the size of the statistical units for which the segregation index has been computed (Malmberg, Andersson, and Östh 2011). Recently, EquiPop has also been used to analyze residential segregation in the Los Angeles Metropolitan Area (Östh, Clark, and Malmberg 2013). In the EquiPop software, the individualized neighborhoods are obtained by expanding a circular buffer around each residential location until the population encircled by the buffer corresponds to the population threshold chosen. When this threshold is reached, the program computes aggregate statistics on a selected socio-economic variable for the encircled population.

Equipop requires that the input data is geo-coded to a high level of detail. We have used data from the Population Labor Market Chorology Data (PLACE) database of Uppsala University. These data contain register-based, individual level data for the population in Sweden from 1990 to 2010 with geocodes of the residential location in 100 meter squares. From this data, 8 different socio-demographic indicators have been extracted and used as input for Equipop. On the individual level these indicators are: (1) Being unemployed, (2) Having a tertiary education (3) Being a single mother, (4) Belonging to the top-ten percent of the income earners, (5) Arrived in Sweden during the last five years (6) Having received social allowance during the year, (7) Without employment during the entire year, and (8) Country of birth in Asia, Africa, or Latin America. Before being input to Equipop this data has been aggregated to 100 meter squares based on the geo-coordinates.

The advantage of using individually based neighborhood definitions has been acknowledged previously but it has been deemed impracticable. For example, Putnam (2007, 155, p. 155) states: "In claiming that ethnically diverse neighborhoods produce hunkering, we use the census tract as a proxy for 'neighborhood'. However, the real neighborhoods in which people experience their daily lives likely vary from census tracts. Obviously, no nationwide survey could gather contextual data on personally defined 'neighborhoods' for all respondents, so it is difficult to address this issue empirically.".

Among neighborhood effect scholars there has also been an increased awareness that neighborhood effects are not restricted to a single neighborhoods scale. Thus, Robert Sampson argues that there is a need for spatial flexibility when it comes to measuring contextual influences (2012). What is needed is not a "search for the 'best' or 'correct' operational definition of neighborhood"(Sampson 2012). Instead, he argues that "there are multiple scales of ecological influence and possibilities for constructing measures, ranging from micro level street blocks (or street corners) to block groups to neighborhood clusters to community areas of political and organizational importance to spatial 'regimes' and cross-cutting networks that connect far-flung areas of the city."

In the present study, we allow for these multiple scales of ecological influence by varying k, the number of nearest neighbors that are included in the computation of population, from 12 to 12 800 in successive doublings of the population thresholds. For every socio-demographic indicator this gives 11 different measurements of the neighborhood population composition, k = (12, 25, 50, 100, 200, 400, 800, 1600, 3200, 6400, and 12800). By using different numbers of nearest neighbors, or k, it is possible to obtain a range of values for the contextual variable that describes the characteristics of neighborhoods that range in proximity from very close to ever more extended.

Factor-analysis based representation of contextual variation

With 8 different socio-demographic indicators and 11 different levels of neighborhood scale (k) we obtain a total of 88 different contextual variables. Clearly, such a large number of contextual variables cannot easily be included as explanatory variables in a logistic regression of school choice motives. Moreover, many of the indicators are strongly correlated, for example, contextual indicators based on the same socio-economic indicator but computed for similar neighborhood sizes. In order to make the analysis manageable we have, therefore, subjected the contextual indicators to a factor analysis that compresses the 88 original indicators to 15 orthogonal factors that jointly capture more than 90% of the original variation. The factor analysis was based on correlations and the number of factors was selected based on them having eigenvalues higher than one. The factors were rotated using the varimax methods.

Figure 1 is useful for interpreting what the different factors represent. This interpretation is important since we are going to include factor scores as explanatory variables in the logistic regression of school choice motives. Without a proper interpretation of the different factors it will be difficult to interpret the regression results. Below, we look closer at six factors that are of special interest given the estimates presented in the Results section. The discussion is also based on maps showing the spatial variation in factors scores.

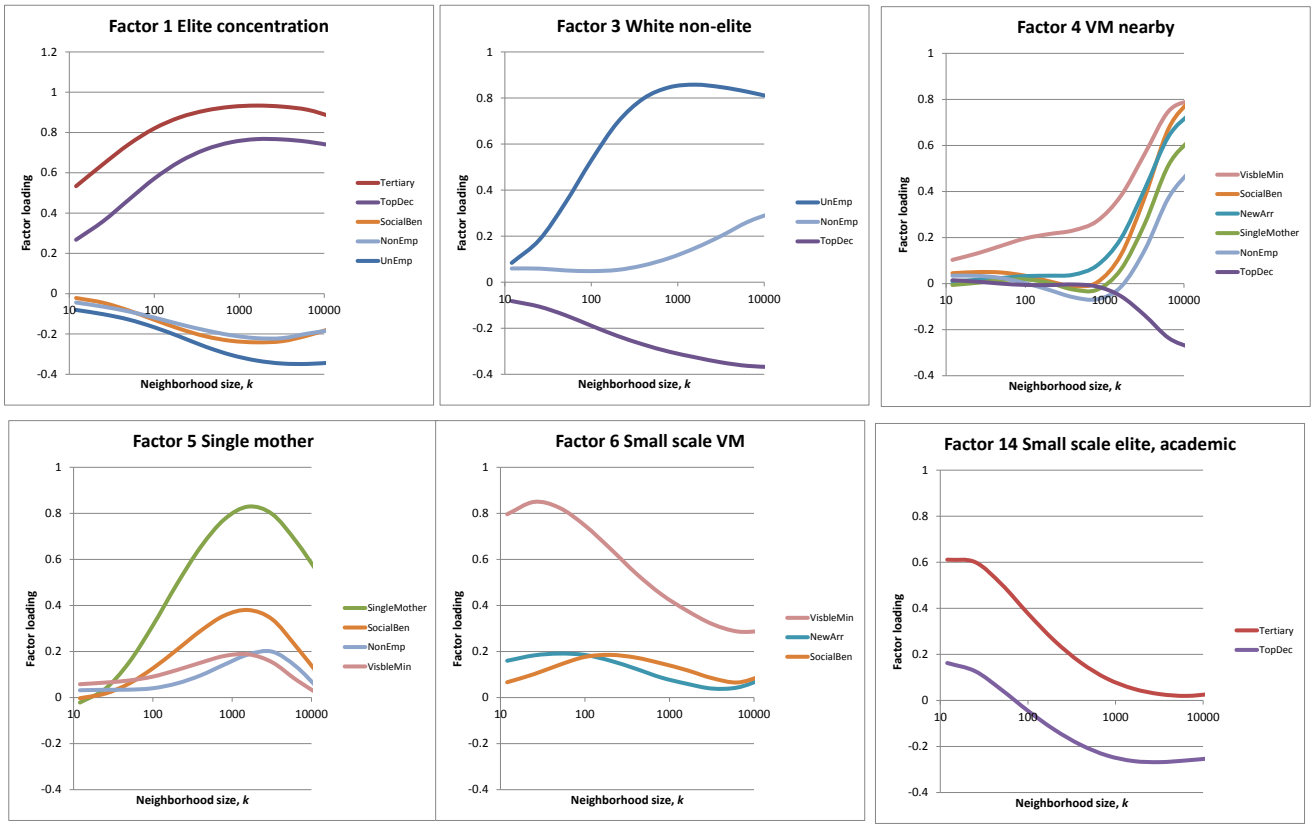

Figure 1. Description of six factors and their loadings.

Factor 1: Elite concentration.

Locations with high values of this factor are characterized by high shares of people with tertiary education, high shares of people with top incomes, and low shares of unemployed, social allowance recipients, and non-employed. The effects are strongest for high k-values, that is, large scale segregation. A good descriptive name for this factor could be elite concentration. The Factor 1 map in Figure 2 shows that these elite concentrations can be found in the major metropolitan areas and in university and college cities, as well as in attractive coastal locations.

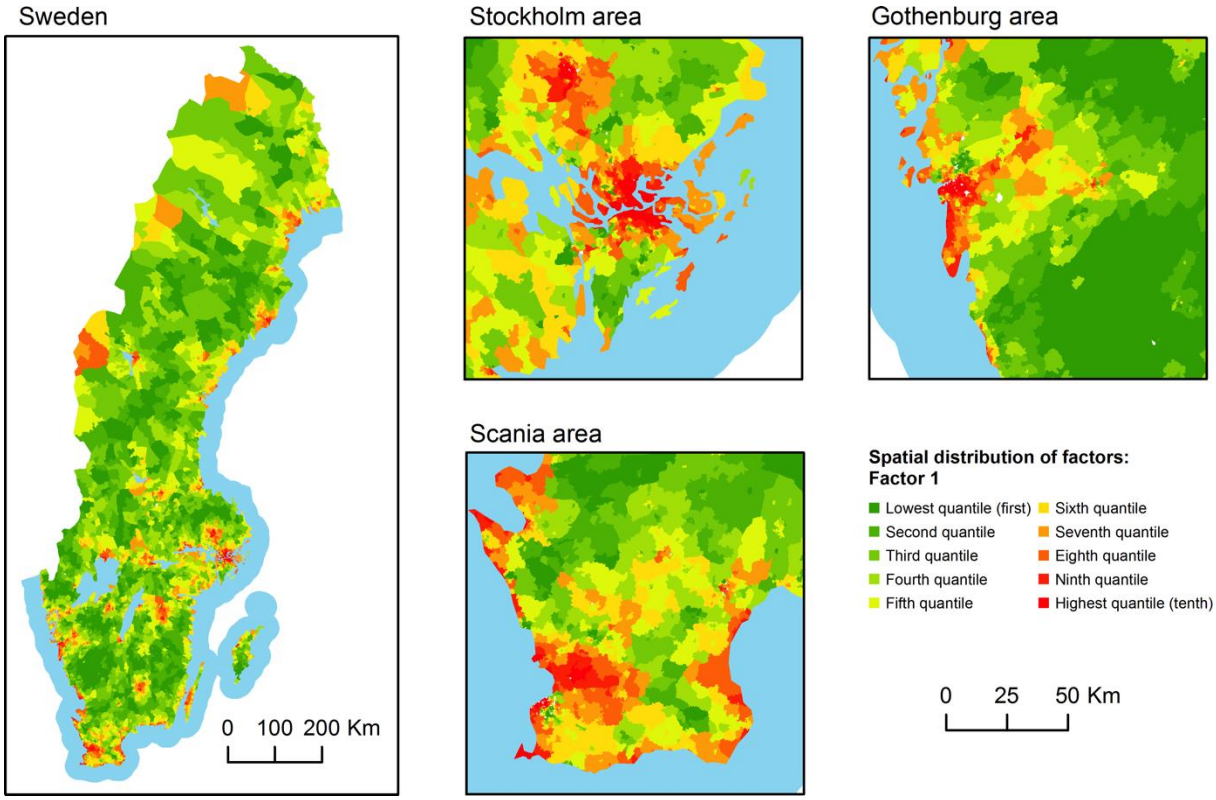

Figure 2. Map of Sweden with areas characterized by elite concentrations.

Factor 3: White non-elite.

Areas with high values on this factor demonstrates high levels of unemployment at neighborhood scales beyond 100 closest neighbors. The same areas are also characterized by an absence of the top-income elite. Geographically, areas with high values on this factor are found in the more sparsely populated, forested areas of northern and north-western Sweden, as well as in areas that are distant from the metropolitan areas and other major cities. In addition, there are some restricted, centrally located areas in Stockholm, Malmö and Göteborg with high scores on this factor.

Factor 4: Visible minorities and marginalized groups nearby.

An interesting feature of this factor is that it only has a strong effect on contextual values when the neighborhood scale is near or above 1000 closest neighbors and the highest values are for the very largest neighborhood scales (10 000 neighbors). This implies that people living in areas with high values on this factor have high shares of visible minorities, low income groups, newly arrived immigrants, single mothers, and non-employed among their 1000+ nearest neighbors but not necessarily in their closest neighborhood. Figure 3 shows that these high values for this factor are associated with metropolitan areas and with most of Sweden's larger cities.

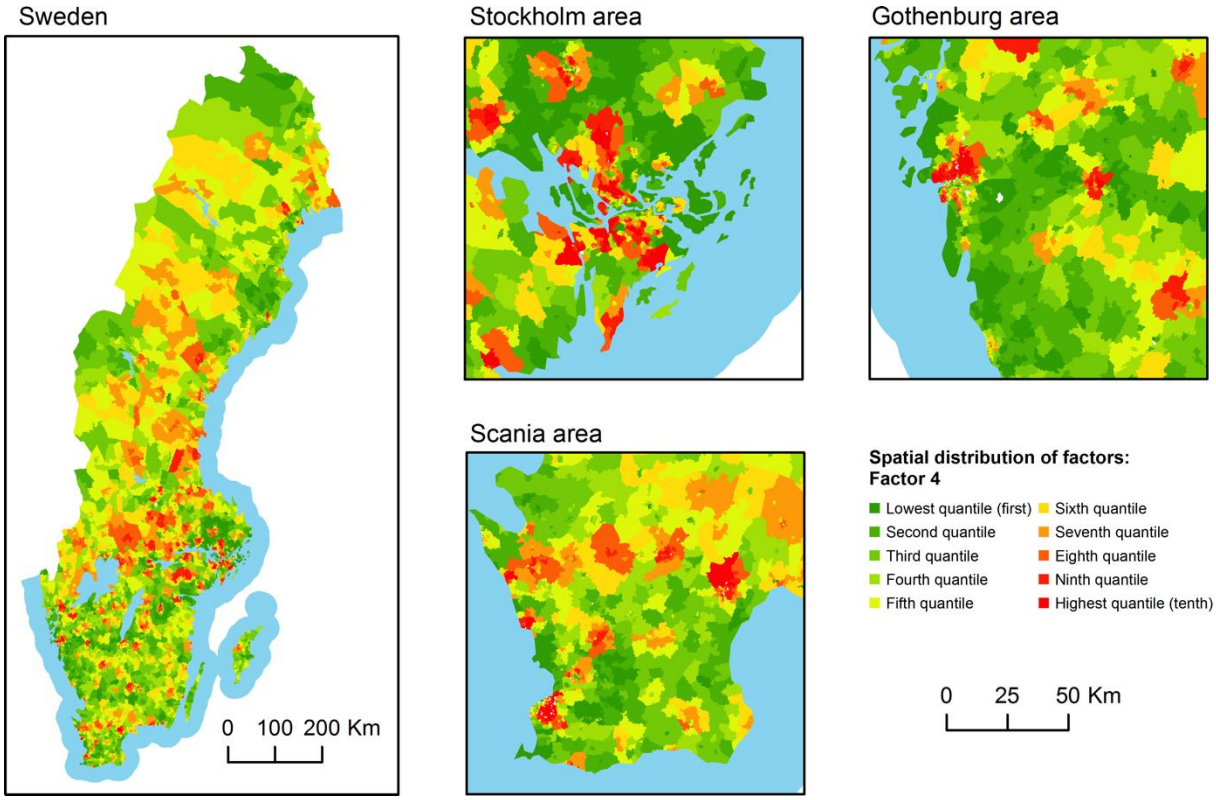

Figure 3. Map of visible minorities and marginalized groups nearby.

Factor 5: Single mothers.

This factor has loadings that are somewhat similar to factor 4 but with lower values for visible minorities and a less pronounced peak for the largest neighborhood sizes. One interesting aspect of this factor called single mothers, is that low factor scores are found in two areas known for low levels of secularization: south-central Sweden and the lower part of the far-north Sweden.

Factor 6: Small scale visible minority.

High values for this factor are a characteristic of areas with high shares of visible minorities among the nearest 12, 25, 50, 100, 200, or 400 neighbors. The association of this factor with high concentrations of visible minorities in small-scale neighborhoods is evidenced by its geographical pattern. Thus, high values for this factor are found in the western parts of metropolitan Stockholm, in central Malmö and in the north-west part of Göteborg, as well as in selected areas in Sweden's smaller cities where high concentrations of visible minorities are found, see Figure 6.

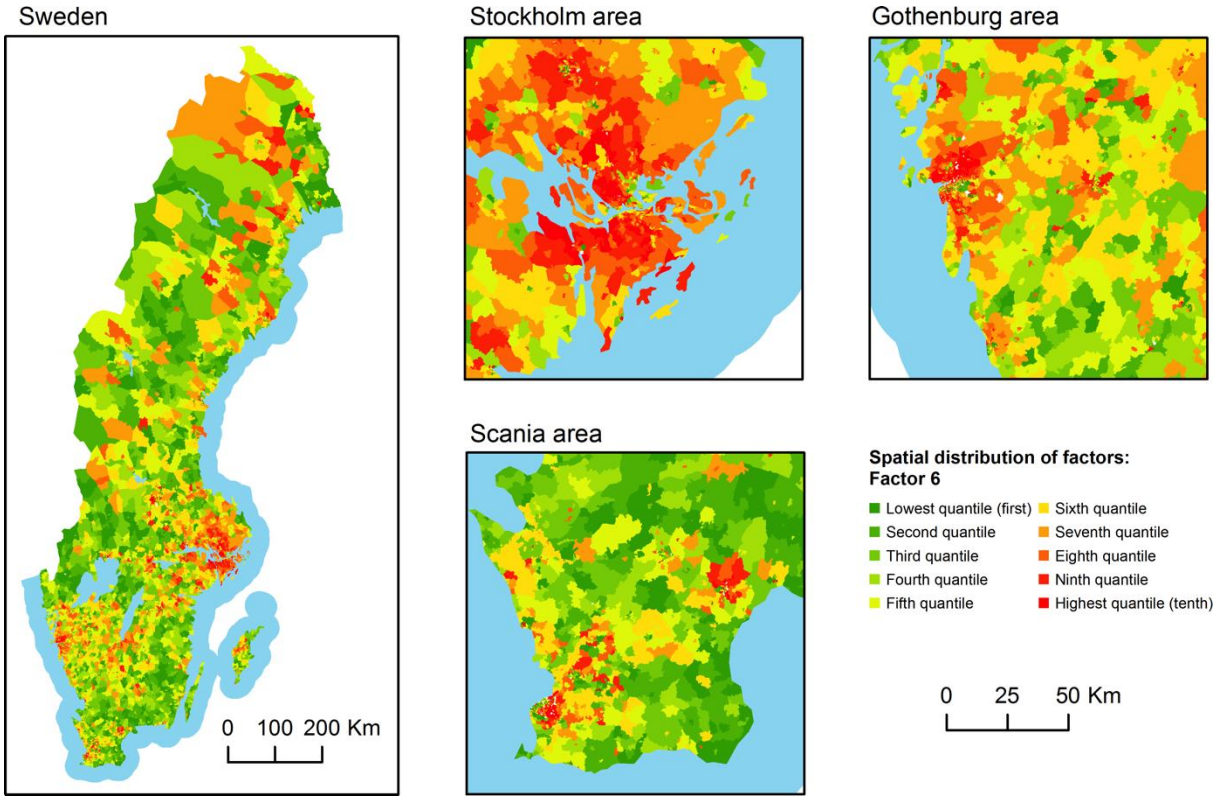

Figure 4. Map of small scale visible minority.

Factor 14: Small scale academic elite.

Factor 14 is similar to factor 1 but with a different profile across neighborhood scales. In areas with high values on factor 14 but low values on factor 1, the local neighborhood has a high concentration of people with tertiary education and, to some extent, high incomes. At a larger neighborhood scale, 400+, the elite share is much lower. That is, many of one's very closest neighbors are elite but one's more extended neighborhood tends to be mixed. High values for factor 14 are found mainly outside the metropolitan regions in mid- and south Sweden as well as in some of the larger cities in northern Sweden.

In the study we also propose possible names for the remaining 9 factors but we refrain from giving these factors a verbal interpretation given their relative unimportance in the estimated models of school choice motives.

Results

The majority of the responding parents, 64 per cent, are in favor of school choice reforms, while 12 per cent state that they are against the reforms and the remaining 24 per cent are undecided. This indicates that there is strong support for the reforms amongst parents, which corresponds to earlier studies (The Swedish National Agency for Education 2003). However, a closer look at the statements made by parents reveals that they have much more complex and ambivalent views on school choice than has previously been assumed.

A majority (53 per cent) of those parents who said that they prefer school choice to a system where children are allocated to the nearest public school are critical of the workings and effects of the school choice reform. Many of these parents say that they have conflicting feelings towards school choice. What they feel is best for their own child is not necessarily something that they feel is best for society. In some cases their own actions and priorities are in direct conflict with their political beliefs and values. Earlier research has also stressed that choice can generate conflicting feelings. Oríaa et.al. (2007) argued that school choice can create an ethical dilemma for the urban middle class, a tension between what parents feel is best for their own child's future and the belief that they have a civic responsibility. They claim that, 'Consequently, these middle class families find themselves acting in ways that they feel to be necessary in terms of their interests but which make them uncomfortable, to varying degrees, in terms of their preferred values' (Oría et al. 2007, p. 93).

In answering the open-ended question of what parents themselves believe to be important arguments for and against school choice, parents who are predominantly positive towards the reforms frequently mentioned that school choice has or can have negative effects for society, since it can intensify ethnic and socioeconomic segregation within the Swedish compulsory school and create what the parents call 'A' and 'B' schools, a division of schools into different leagues. They argue that the current schools system, where a voucher is attached to each student irrespective of whether the school is a public or an independent school and the school receives funding according to the number of students attending, has negative effects especially on the public schools. The risk is, according to parents, that public schools as a consequence are depleted, as they have less ability to control and plan their activities.

The other main criticism that parents in the survey have of school reform is how it has been implemented by municipalities and schools. Many parents express frustration with the fact that what they believe to be the intentions of the reform are not realized in practice. They feel that the criteria for allocating students hamper their ability to choose, and that there is no real choice. It is difficult for parents living in the 'wrong neighborhood' to get their child into the preferred school, as proximity remains a criterion for acceptance. They also feel that it is difficult to make an informed choice, since it is difficult to find objective information on which to base their decisions. Furthermore, parents feel pressure to make their choice early on to get their child into the preferred school, with some parents feeling that the choice is made too early and that it creates stress and anxiety among the children and parents to make the "right choice". These feelings of stress have also been recognized in other studies. Parents are worried that their children will lose contact with friends in the process, as they end up at different schools. Another criticism is the lack of control and regulation of independent schools. Parents feel that independent schools should not be able to make a profit, and that the schools invest too much money on advertising instead of putting all available resources into education. They are also opposed to the fact that independent schools are allowed to say no to students with special needs, that they put more focus on the profile of the school than on the elementary subjects, and that they give their students better grades than they deserve, which leads to an inflated grade system and unfair differences in students grades between schools.

Although these parents are critical of the reforms, they do still believe that the reform has positive outcomes for individuals. Parents feel that they have greater control and ability to influence their

child's education. School choice is therefore thought to improve the opportunities to better and individualize education, at least for some, and if problems arise they have the possibility to change school. Some parents stress that school choice is not only a good thing for resource rich students, but something that can be beneficial for all. When schools have to compete with each other it creates greater incentives for schools to improve, which is believed to have positive effects on all children's education.

Not surprisingly, parents who state that they are primarily critical of school choice do not agree with this positive view. Their main critique is that school choice enhances segregation and creates an unequal educational system, which has negative effects especially on resource poor families. The rest of their critique in many ways mirrors the aforementioned critical points. However, one apparent difference between the two main groups, those who are positive and those who are not, is that parents who are negative towards school choice reform are much less ambivalent in their statements.

When asked why their child attends the school that they do, most parents (64 per cent) say it is because of the location. The school is close to home. This is a reason for choosing an independent school (26 per cent of parents state that this is one of the main reasons), but it is not as common as for the choice of public schools (the corresponding percentage for public schools is 74 per cent). Other common reasons are that the school has a good reputation, both in terms of education and the school being safe and calm, but also social reasons, namely that the child has siblings, relatives or friends attending the same school. Besides these reasons, 24 per cent of the parents state that the main reason for the child attending the current school is that the school was the assigned school.

Influences on school choice motives: regression estimates

To analyze the extent to which individual characteristics and context influence different dimensions of school choice we used five questions in the survey. The first set of regressions used the question: "What is the main reason your child is attending the current school?" (Q11) where 17 alternatives were presented, whereas the second set of regressions used the question: "Who has had an influence on the school your child is attending?" (Q19) with 9 preset alternatives. The third set of regressions used the survey question (Q8) asking whether the current "school is the closest to home school available by choice", the question (Q4) on the type of school (municipally run or independently run) and the question (Q28) with hypothetical choice situations are used for regressions.

Results from individual level variables are presented in Table 4. This table includes 23 of 29 estimated regressions. 6 regressions have been excluded because of insignificant results. Furthermore, in order not to overburden the presentation, we do not present parameter estimates for all the 15 factors but only for 6 factors that have at least 5 significant parameter estimates. (Full table in appendix)

Table 4. Regression estimates, individual level variables, only significant results.

INDIVIDUAL BACKGROUND INFLUENCE ON SCHOOL CHOICE MOTIVES

		Social allowance (parents)	High educ. (parents)	Unemployed (parents)	Single mother	Western world	Visible minority	Disp inc perc (parents)	*Log likelihood individual variables*	*Prob*
Q11	Assigned School							**0.005**	5.2	0.1678
Q11	School's reputation							**0.006**	**48.0**	<.0001*
Q11	Proximity					**-0.458**			**14.2**	0.0002*
Q11	Transport					**0.434**	**0.537**		**8.1**	0.0232*
Q11	Siblings					**-0.756**	**-0.688**		**19.5**	<.0001*
Q11	Friends					**-0.516**			**16.2**	<.0001*
Q11	Common interests				**-0.334**				7.2	0.0458*
Q11	Native speaking students				**0.282**				**7.7**	0.0314*
Q11	School profile		**0.485**						**19.9**	<.0001*
Q11	Good teachers								4.4	0.2641
Q11	Stud achievement					**0.528**	**0.359**	**0.005**	**26.8**	<.0001*
Q11	School safe and calm								6.6	0.0665
Q11	Special need	**0.489**	**-0.537**				**0.567**		**35.3**	<.0001*
Q11	Bullying				**1.082**	**0.990**			**16.8**	<.0001*
Q11	Inadequate teaching								3.3	0.4618
Q11	Disorder								**7.8**	0.0287*
Q11	Former school								**8.3**	0.0203*
Q 8	School closest to home		**-0.184**		**-0.192**	**-0.377**			**12.3**	0.0009*
Q 4	Independent school					**0.553**			**13.3**	0.0004*
Q 28	Proximity, few native speaking	**0.398**	**0.262**		**-0.331**		**0.308**	**-0.005**	**37.6**	<.0001*
Q19	Parents decision		**0.418**					**0.005**	2.8	0.5939
Q19	Childs decision		**0.200**					**0.005**	4.5	0.253
Q19	Municipality's recom.						**0.406**		**13.7**	0.0003*

The strongest *individual level effects* are found on (1) stating that school reputation and school profile are important for school choice, (2) emphasizing school results (3) stressing special educational support as important, and (4) valuing a close-to-home school even when few students have Swedish as their first language.

Here, an emphasis on school reputation increases with parents' income and emphasis on school profile increases with parents' education. The importance of school results is higher for families with a non-Nordic background. Mentioning special educational support is positively influenced by families being in receipt of social allowance and negatively influenced by a parent having a tertiary education. Valuing close-to-home schools even when few students have Swedish as their first language is positively influenced by being on social allowance, having tertiary education and having a visible-minority background. Having a high income and being a single mother is associated with a negative valuation of such schools. As the specific aim of this study is the contextual effects these individual level results are described briefly.

In previous studies it has been argued that class is of importance for which actors are of relevance for school choice (Reay and Ball 1997). Reay and Ball claims that the child is of greater importance for working-class families' educational decisions than for middle-class families, as the child is often seen as an authority by working-class parents. However, this does not seem to be the case for the families with lower educational backgrounds in this study. The child, as well as the parents themselves, is

mentioned more often as an important actor by highly educated parents than by parents with less education. Instead, relatives and municipalities are mentioned more often by parents with a lower education than by those with a higher education.

The overall results for the *contextual/neighborhood level variables* showed especially strong effects for (1) stating that the current school was selected because it was the assigned school, and (2) stating that a close-to-home school was selected. Contextual effects are also strong for (3) selecting a non-municipality school (4) stating that school reputation and school results are important for school choice, and (5) stating that the municipality has had a strong influence on choice of school.

Table 5. Regression estimates for contextual level variables, only significant results.

CONTEXTUAL INFLUENCE ON SCHOOL CHOICE MOTIVES

		Factor 1 Elite concent.	Factor 3 White non-elite	Factor 4 VM Nearby	Factor 5 Single mother	Factor 6 Small scale VM	Factor 14 Small scale elite, academic	*Log likelihood contextual factors*	*Prob*
Q11	Assigned School	**-0.231**	**0.135**	**-0.149**	**-0.207**	**-0.089**	**0.241**	**73.3**	0
Q11	School's reputation	**0.166**	**-0.176**	**0.096**				**38.9**	0
Q11	Proximity		**-0.127**	**-0.090**				**23**	0.0001
Q11	Transport						**-0.279**	**16.6**	0.0049
Q11	Siblings		**-0.129**					**20.8**	0.0003
Q11	Friends		**-0.124**	**-0.097**	**-0.082**			**34.4**	0
Q11	Common interests	**0.142**		**0.137**				**20.8**	0.0003
Q11	Native speaking students							**12.7**	0.0448
Q11	School profile	**0.213**		**0.130**	**0.151**			**23.7**	0
Q11	Good teachers	**0.091**	**-0.119**	**0.125**				**17.6**	0.003
Q11	Stud achievement	**0.170**		**0.114**			**-0.206**	**43.8**	0
Q11	School safe and calm					**-0.078**		**15.1**	0.0139
Q11	Special need				**0.255**			**17.5**	0.0025
Q11	Bullying			**0.255**				**20.1**	0.0056
Q11	Inadequate teaching		**0.245**		**0.158**			**12.1**	0.0645
Q11	Disorder		**0.243**	**0.132**	**0.174**			**25.5**	0.0001
Q11	Former school			**0.155**	**0.158**			**20.4**	0.0003
Q 8	School closest to home	**-0.161**		**-0.156**	**-0.163**	**-0.098**	**0.182**	**59.3**	0
Q 4	Independent school	**0.220**		**0.224**	**0.114**	**0.078**		**47.6**	0
Q 28	Proximity, few native speaking		**0.155**					**26.8**	0
Q19	Parents decision	**0.100**						**17.8**	0.002
Q19	Childs decision							**26.8**	0
Q19	Municipality's recom.	**-0.338**	**0.191**	**-0.254**	**-0.134**			**38.5**	0

Looking at the contextual factors it turns out that Factor 1 (Elite concentration) and Factor 4 (Visible Minority nearby) in many ways have similar effects on school choice motivations, see Table 5. Both factors have a negative effect on choosing an assigned school, on choosing the closest school, and on stating that the municipality has influenced the school decision. Both contexts also have a positive effect on giving importance to school reputation, school profile, teacher quality, school results, and students with similar interests, and on choosing an independent school. This profile in the effects can be interpreted as an expression of middle class based understanding of school choice. Thus, its association with Factor 1 is not surprising. However, from a policy point of view, the result that a

similar understanding of school choice is influenced also by Factor 4 - which captures the presence of visible minorities and other marginal groups in adjacent neighborhoods - is perhaps even more interesting. It has been pointed out in earlier studies that concerns about the demographic composition of schools sometimes are masked as concerns about school quality (Schneider and Buckley 2002). The results we have obtained here point in a similar direction.

A distinctly different, non-middle class pattern is found for Factor 3 (White non-elite). Factor 3 is associated with a positive effect on choosing an assigned school, and on stating that the municipality has influenced the school decision. Moreover, Factor 3 is associated with a negative effect on giving importance to school reputation, school profile (ns.), teacher quality, school results, and students with similar interests. This result therefore reinforces the view that selective school choice practices are associated with a middle-class based outlook. The choice situation from a working class perspective might as suggested by Reay and Ball (1997) be a refusal of opting for the risk of humiliation and failure.

The pattern found for Factor 1 (Elite concentration) can also be contrasted to the parameter estimates for Factor 14 (Small scale elite). Here it turns out that a middle-classed based understanding of school choice seems to presuppose a large scale concentration of elite groups. If you live in a small-scale elite neighborhood - that is, if the elite share declines as the neighborhood scale expands beyond 200-400 persons - then you have an increased propensity to choose an assigned school, close-to-home school, and to indicate an influence of the municipality on school choice. Moreover, you have a decreased propensity to give weight to school profile, school results and teacher quality. Thus the effect of the small-scale elite factor is in many ways similar to the effect of the white non-elite factor. From a theoretical point of view this is an important finding. It suggests that the effects of small-scale segregation can be quite different from the effects of large-scale segregation. With small-scale social segregation there may be less room for the development of, for example, a sophisticated middle class based understanding of what constitutes an appropriate school for one's children. Or possibly, the proximity to known 'others' forms tolerance among parents.

One joint feature of parents in small-scale elite (14) and large-scale elite (1) neighborhoods is that they tend not to emphasize negative motivations for school choice: problems with bullying, substandard teaching, school disorder and having changed school. Positive effects on this set of school choice motivations are, instead, found for White non-elite (Factor 3), Visible Minority nearby (Factor 4), and Single mother (Factor 5). It could be possible to interpret this pattern as expressing more of a working-class attitude towards school choice, less concerned about building a specific personality than providing your children with a stable school environment.

In order to enable an assessment of the contextual variables we also report the log likelihood values (difference compared to intercept-only model) for models that only include the individual level variables and models that also include contextual level variables, see Table 6.

Table 6. Log likelihood for individual level variables and contextual level variables.

INFLUENCE ON SCHOOL CHOICE MOTIVES

		Log likelihood individual variables	*Log likelihood contextual factors*	Share contextual effect
Q11	Assigned school	5.2	73.3	93.4%
Q11	School's reputation	48.0	38.9	44.8%
Q11	Proximity	14.2	23	61.8%
Q11	Transport	8.1	16.6	67.2%
Q11	Siblings	19.5	20.8	51.6%
Q11	Friends	16.2	34.4	68.0%
Q11	Common interests	7.2	20.8	74.4%
Q11	Native speaking students	7.7	12.7	62.3%
Q11	School profile	19.9	23.7	54.4%
Q11	Good teachers	4.4	17.6	79.9%
Q11	Stud achievement	26.8	43.8	62.0%
Q11	School safe and calm	6.6	15.1	69.5%
Q11	Special need	35.3	17.5	33.2%
Q11	Bullying	16.8	20.1	54.4%
Q11	Inadequate teaching	3.3	12.1	78.3%
Q11	Disorder	7.8	25.5	76.5%
Q11	Former school	8.3	20.4	71.1%
Q 8	School closest to home	12.3	59.3	82.9%
Q 4	Independent school	13.3	47.6	78.2%
Q 28	Proximity, few native speaking	37.6	26.8	41.6%
Q19	Parents decision	2.8	17.8	86.5%
Q19	Childs decision	4.5	26.8	85.6%
Q19	Municipality's recom.	13.7	38.5	73.7%

Moreover, the last column in Table 6 compares the contribution of the individual level variables and the contextual factors to the log-likelihood. The report shows that for 20 of 23 outcome variables there is a stronger effect of the contextual variables than for the individual level variables. This result

merits some discussion. Traditionally neighborhood effect studies show modest effects of context compared to individual level variables. For example, a child's educational achievement is much more dependent on parental education than on any neighborhood factors (Andersson and Subramanian 2006; Andersson and Malmberg 2013). One reason for the strong contextual effects we find on school choice motives is that we use survey responses as dependent variables. It is possible that such responses, made in a moment, are more influenced by locally constructed understandings of the world than outcomes that depend on efforts that extend over months and years. In addition, using context measures based on individualized neighborhoods can have contributed to the strong effect we find. A third factor could be that our sample consists of parents that have chosen to participate in the study. It is possible that this selection has masked some individual level effects.

Concluding discussion

With the introduction of open enrolment and free school choice parents across a wide range of countries, have been asked to make locational decisions that will determine with which social and ethnic groups their children will interact during their formative years. An increased understanding how these decisions are made will, therefore, give insights into processes that influence how social relations are established during a critical phase of the life course.

The main contribution of our study is that we have been able to show that neighborhood context plays a fundamental role for how parents think about school choice. In neighborhoods dominated by people with high income and high education parents, irrespective of socio-economic status, tend to evaluate school options in the way advocated by school choice models. Parents living in non-elite neighborhoods, on the other hand, have a more traditional view of school choice by favoring the assigned school and putting less emphasis on school profile and teacher quality. This pattern can, of course, be seen as paradoxical. The idea of school choice emphasizes free individual choice, but in reality it turns out that group thinking plays a central role for how parents manage this question.

But its not only the immediate neighborhood that plays a role but also the socio-economic and demographic profile of adjacent areas. If this more extended neighborhood context contains marginalized groups such as visible minority households, households dependent on social allowances or households headed by single mothers, motives associated with the free school choice ethos are again given a much stronger emphasis. For school-choice advocates this is a potentially troubling finding. If school choice is driven not by quality concerns but by fears of social and ethnic mixing then we should not expect strong beneficial effects of free choice. The end result will instead be increased segregation with potentially negative effects on overall school performance. It also worth noting that increased diversity in the wider neighborhood area strengthens what can be seen a typical middle-class views on school choice. This result suggests that increasing support for open enrolment is not necessarily a result of strengthened individualistic values. It may instead reflect anxiety for sending one's children to schools with a mixed social and ethnic composition.

From a research perspective it is worth noting that the use of individualized, scalable neighborhoods has made it possible to demonstrate both strong and detailed effects of neighborhood context on parental decision-making. In our view this lends strong support to the theoretical argument that favors the use of individualized neighborhood over measures that are based on administratively

defined units. Our results also show that there is a pay-off from using contextual measures that can handle neighborhoods of varying scale. Thus, we have been able to show that the scale of residential segregation influences contextual effects, at least for elite groups.

From a methodological point of view we, therefore, claim to have made a contribution also to the wider literature on neighborhood and contextual effects. As suggested by Sampson (2012) and Putnam (2007) existing measures of neighborhood context are not satisfying. In particular, they have critiqued the dependence on administratively defined areal units. We maintain that the use of individualized neighborhoods largely circumvents this problem and that, furthermore, the possibility of varying the scale of these neighborhoods will allow for a more flexible model designs. Further research is needed, however, in order to determine the usefulness of individualized neighborhoods for contextual effects research in general.

Acknowledgement

We thank John Östh for the contextual data used in this paper and for help with data analysis. The contextual data was generated by the EquiPop software John Östh has developed. This research was supported by the Linnaeus Center on Social Policy and Family Dynamics in Europe, SPaDE, Stockholm University and by the Swedish Research Council grant 2009-6299. Thanks also to Stefan Ene for assistance with the maps.

References

Ainsworth, J. W. 2002. Why does it take a Village? The Mediation of Neighborhood Effects on Educational Achievement. *Social Forces* 81 (1):117-152.

Allen, R. 2007. Allocating Pupils to Their Nearest Secondary School: The Consequences for Social and Ability Stratification. *Urban Stud* 44 (4):751-770.

Andersson, E., and B. Malmberg. 2013. Contextual effects on educational attainment in individualized neighborhoods; differences across gender and social class. In *ENHR European Network for Housing Research, June 2013*. Tarragona.

Andersson, E., B. Malmberg, and J. Östh. 2012. Travel-to-school distances in Sweden 2000–2006: changing school geography with equality implications. *Journal of Transport Geography* 23 (0):35-43.

Andersson, E., and S. V. Subramanian. 2006. Explorations of neighborhood and educational outcomes for young Swedes. *Urban Studies* 43 (11):2013-2025.

Bauder, H. 2001. 'You're Good with your Hands, Why Don't You Become an Auto Mechanic': Neighborhood Context, Institutions and Career Development. *International Journal of Urban and Regional Research* 25 (3):593-608.

Butler, T., C. Hamnett, M. Ramsden, and R. Webber. 2007. The best, the worst and the average: secondary school choice and education performance in East London. *Journal of Education Policy* 22 (1):7-29.

Friskolornasriksförbund. 2010. (Swedish Association of Independent Schools) http://www.friskola.se/Om_oss_In_English_DXNI-38495_.aspx.

Galster, G. 2007. Neighbourhood Social Mix as a Goal of Housing Policy: A Theoretical Analysis. *European Journal of Housing Policy* 7 (1):19-43.

Garcia, D. R. 2008. Academic and Racial Segregation in Charter Schools: Do Parents Sort Students Into Specialized Charter Schools? *Education and Urban Society* 40 (5):590-612.

Gorard, S., and E. Smith. 2004. An international comparison of equity in educational systems. *Comparative Education* 40 (1):15-28.

Holme, J. J. 2002. Buying Homes, Buying Schools: School Choice and the Social Construction of School Quality. *Harvard Educational Review* 72 (2):177-206.

Lankford, H., and J. Wyckoff. 2001. Who would be left behind by enhanced private school choice? *Journal of Urban Economics* 50 (2):288-312.

Malmberg, B., E. Andersson, and J. Östh. 2011. To what extent does the level of segregation vary between different urban areas? Introducing a scalable measure of segregation. In *European Network for Housing Research Conference*. Toulouse: http://www.enhr2011.com/sites/default/files/Paper-BoMalmberg-WS16.pdf.

Massey, D. S. 2012. Location Matters. *Science* 336 (6077):35-36.

Noreisch, K. 2007. School catchment area evasion: the case of Berlin. *Journal of Education Policy* 22 (1):69-90.

Oría, A., A. Cardinib, S. Balla, E. Stamoua, M. Kolokithaa, S. Vertigana, and C. Flores-Morenoa. 2007. Urban education, the middle classes and their dilemmas of school choice. *Journal of Education Policy* 22 (1):91-105.

PLACE. 2004. Population, Chorology and Employment Database, Institute for Future Studies, Stockholm. from statistics Sweden.

Putnam, R. D. 2007. E pluribus unum: Diversity and community in the twenty-first century the 2006 Johan Skytte Prize Lecture. *Scandinavian political studies* 30 (2):137-174.

Rangvid, B. S. 2007. Living and Learning Separately? Ethnic Segregation of School Children in Copenhagen. *Urban Stud* 44 (7):1329-1354.

Reay, D., and S. J. Ball. 1997. 'Spoilt for choice': The working classes and educational markets. *Oxford Review of Education* 23 (1):89-101.

Renzulli, L. A., and L. Evans. 2005. School choice, charter schools, and white flight. *Social Problems* 52 (3):398-418.

Sampson, R. J. 2012. *Great American City: Chicago and the Enduring Neighborhood Effect*. Chicago: University of Chicago Press.

SCB. 2012. Skolval (School choice), 2012 10 30. In *Teknisk Rapport. En beskrivning av genomförande och metoder*, 437: SCB, Örebro.

Schneider, M., and J. Buckley. 2002. What do parents want from schools? Evidence from the Internet. *Educational evaluation and policy analysis* 24 (2):133-144.

Theobald, R. 2005. School Choice in Colorado Springs: The Relationship Between Parental Decisions, Location and Neighbourhood Characteristics. *International Research in Geographical & Environmental Education* 14 (2):92-111.

TheSwedishNationalAgencyforEducation. 2003. Valfrihet och dess effekter inom skolområdet. Stockholm: Skolverket, National Agency for Education.

———. 2013. Skolor och elever i grundskolan läsår 2011/12: Sveriges officiella statistik.

Waslander, S., C. Pater, and M. v. d. Weide. 2010. *Markets in Education: An Analytical Review of Empirical Research on Market Mechanisms in Education*: OECD Publishing.

Wilson, W. J. 1987. *The Truly Disadvantaged: The Inner City, the Underclass, and Public Policy*. Chicago and London: The University of Chicago Press.

Östh, J., E. Andersson, and B. Malmberg. 2013. School Choice and Increasing Performance Difference: A Counterfactual Approach. *Urban Studies* 50 (2):407-425.

Östh, J., W. Clark, and B. Malmberg. 2013. Measuring Societal Separation and Segregation: theoretical considerations and practical approaches, submitted March 2013.

Östh, J., B. Malmberg, and E. K. Anderson. 2011. Introducing Equipop. *6th international conference on population geographies*, June 15, 2011.

	Question 11: importants of factor for school choice																	Q 8	Q 4	Q 28	Q 19		
	Assig-ned school	School's repu-tation	Prox-imity	Trans-port	Sib-lings	Friends	Comm on inte-rests	Native speakin g stud-ents	School profile	Good teach-ers	Stud achiev-ement	School safe and calm	Special need	Bully-ing	Inade-quate teach-ing	Dis-order	Former school	School closest to home	Indepe ndent school	Proximi ty, few native speak-ing	Par-ent's deci-sion	Child's dec-ision	Munici-pality's recom.
Constant	**-0.591**	**-0.946**	**0.608**	**-2.035**	**-0.771**	**-0.489**	**-2.743**	**-1.922**	**-2.642**	**-1.225**	**-2.228**	**-0.98**	**-2.671**	**-4.569**	**-3.043**	**-2.93**	**-2.66**	**1.454**	**-2.022**	**-1.031**	**0.907**	**-0.557**	**-0.723**
	-0.142	**-0.128**	**-0.128**	**-0.181**	**-0.132**	**-0.13**	**-0.213**	**-0.197**	**-0.183**	**-0.135**	**-0.166**	**-0.138**	**-0.226**	**-0.45**	**-0.281**	**-0.244**	**-0.216**	**-0.135**	**-0.161**	**-0.139**	**-0.158**	**-0.126**	**-0.161**
Social benefit (parents)	0.169	0.011	0.071	0.319	0.123	0.182	0.316	0.012	0.157	0.108	0.222	0.066	**0.489**	-0.184	-0.074	0.035	-0.08	0.292	-0.331	**0.398**	-0.332	-0.017	-0.046
	-0.183	-0.163	-0.157	-0.207	-0.167	-0.165	-0.239	-0.247	-0.212	-0.163	-0.201	-0.178	**-0.213**	-0.463	-0.336	-0.261	-0.242	-0.164	-0.207	**-0.159**	-0.178	-0.158	-0.21
High educ. (parents)	-0.069	0.065	0.022	-0.015	-0.12	0.007	0.18	-0.205	**0.485**	0.052	0.095	-0.065	**-0.537**	-0.1	-0.108	-0.142	-0.082	**-0.184**	0.198	**0.262**	**0.418**	**0.2**	-0.138
	-0.093	-0.08	-0.081	-0.113	-0.084	-0.083	-0.133	-0.125	**-0.115**	-0.085	-0.102	-0.087	**-0.133**	-0.263	-0.171	-0.147	-0.131	**-0.083**	-0.099	**-0.089**	**-0.1**	**-0.079**	-0.105
Unemployed (parents)	-0.023	-0.001	0.053	0.098	-0.121	0.144	-0.056	0.133	0.136	0.119	-0.05	0.234	0.034	0.153	-0.099	0.094	0.063	-0.132	0.081	-0.007	0.104	-0.093	0.02
	-0.137	-0.116	-0.116	-0.161	-0.122	-0.118	-0.192	-0.174	-0.151	-0.119	-0.148	-0.122	-0.191	-0.345	-0.254	-0.202	-0.184	-0.116	-0.137	-0.124	-0.149	-0.115	-0.155
Single mother	-0.06	-0.098	-0.099	-0.038	-0.159	-0.144	**-0.334**	**0.282**	0.156	-0.105	-0.095	0	0.158	**1.082**	0.272	0.267	0.271	**-0.192**	0.134	**-0.331**	-0.084	0.001	-0.245
	-0.109	-0.092	-0.092	-0.13	-0.099	-0.097	**-0.162**	**-0.138**	-0.119	-0.097	-0.114	-0.1	-0.148	**-0.258**	-0.185	-0.159	-0.142	**-0.093**	-0.109	**-0.104**	-0.118	-0.091	-0.13
Western world	-0.054	-0.028	**-0.458**	**0.434**	**-0.756**	**-0.516**	-0.028	0.242	0.389	0.123	**0.528**	0.065	-0.084	**0.99**	-0.056	-0.198	0.316	**-0.377**	**0.553**	0.293	0.001	-0.215	-0.067
	-0.204	-0.169	**-0.164**	**-0.215**	**-0.207**	**-0.193**	-0.283	-0.244	-0.201	-0.174	**-0.187**	-0.182	-0.305	**-0.375**	-0.379	-0.341	-0.254	**-0.166**	**-0.179**	-0.175	-0.217	-0.17	-0.242
Vminority	0.178	0.02	-0.188	**0.537**	**-0.688**	-0.254	0.373	-0.344	0.304	0.287	**0.359**	-0.027	**0.567**	-0.28	0.509	0.19	0.429	-0.041	0.094	**0.308**	-0.183	-0.019	**0.406**
	-0.171	-0.151	-0.147	**-0.184**	**-0.172**	-0.16	-0.215	-0.262	-0.189	-0.15	**-0.177**	-0.167	**-0.203**	-0.556	-0.281	-0.252	-0.217	-0.152	-0.18	**-0.151**	-0.175	-0.148	**-0.186**
Dispincprec (parents)	**0.005**	**0.006**	0.001	0	0.001	0.003	0.001	0	0	0.001	**0.005**	0.002	0.001	0.002	0.001	0.004	0.002	-0.002	-0.002	**-0.005**	**0.005**	**0.005**	0.003
	-0.002	**-0.001**	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	**-0.002**	-0.002	-0.003	-0.005	-0.003	-0.003	-0.003	-0.002	-0.002	**-0.002**	**-0.002**	**-0.001**	-0.002
Factor 1 Elite concentration	**-0.231**	**0.166**	0.005	-0.002	0.037	-0.044	**0.142**	-0.088	**0.213**	**0.091**	**0.17**	0.014	0.051	-0.031	0.003	-0.042	0.011	**-0.161**	**0.22**	0.019	**0.1**	0.05	**-0.338**
Factor 3 White non-elite	**0.135**	**-0.176**	**-0.127**	-0.143	**-0.129**	**-0.124**	-0.156	-0.004	-0.046	**-0.119**	-0.136	-0.055	-0.057	0.333	**0.245**	**0.243**	0.174	-0.065	0.002	**0.155**	-0.087	0.007	**0.191**
Factor 4 VM Nearby	**-0.149**	**0.096**	**-0.09**	0.036	0.055	**-0.097**	**0.137**	-0.013	**0.13**	**0.125**	**0.114**	0.059	0.078	**0.255**	0.093	**0.132**	**0.155**	**-0.156**	**0.224**	0.038	-0.041	0.032	**-0.254**
Factor 5 Single mother	**-0.207**	0.046	-0.031	-0.037	-0.05	**-0.082**	0.058	-0.035	**0.151**	0.037	0.064	-0.005	**0.255**	0.171	**0.158**	**0.174**	**0.158**	**-0.163**	**0.114**	0.067	0.053	0.012	**-0.134**
Factor 6 Small scale VM	**-0.089**	0.032	-0.039	-0.015	0.003	0	0.008	-0.033	0.013	-0.028	-0.01	**-0.078**	0.059	0.076	0.062	0.034	0.019	**-0.098**	**0.078**	0.002	-0.009	-0.004	-0.058
Factor 14 Small scale elite, ac	**0.241**	-0.111	0.1	**-0.279**	-0.078	0.104	-0.07	0.107	-0.022	-0.119	**-0.206**	-0.036	-0.029	-0.273	-0.038	0.156	0.051	**0.182**	-0.065	0.072	0.024	**0.158**	0.146
Log Likelihood Reduced	2046.6	2548.1	2431.1	1479.9	2328.9	2409.3	1210.7	1225.9	1653.6	2315.2	1894.9	2201.3	1082.9	370.7	758.5	949.6	1150.4	2423	1925.5	2200.7	2425.9	1335	749.8
Diff LL indiv. vs reduced	5.2	**48**	**14.2**	**8.1**	**19.5**	**16.2**	7.2	**7.7**	**19.9**	4.4	**26.8**	6.6	**35.3**	**16.8**	3.3	**7.8**	**8.3**	**12.3**	**13.3**	**37.6**	2.8	4.5	**13.7**
Prob>ChiSq (df 7)	0.1678	<.0001*	0.0002*	0.0232*	<.0001*	<.0001*	0.0458*	0.0314*	<.0001*	0.2641	<.0001*	0.0665	<.0001*	<.0001*	0.4618	0.0287*	0.0203*	0.0009*	0.0004*	<.0001*	0.5939	0.253	0.0003*
Dif. LL Full vs reduced	**78.2**	**86.3**	**36.2**	**24.6**	**39.9**	**50.6**	**28**	**20.4**	**43.6**	**21.6**	**70.4**	**21.4**	**52.7**	**33**	**15.4**	**30.6**	**28.7**	**71.6**	**60.9**	**64.4**	**20.6**	**31.3**	**52.2**
Prob>ChiSq (df 15)	<.0001*	<.0001*	<.0001*	0.0008*	<.0001*	<.0001*	<.0001*	0.0088*	<.0001*	0.0044*	<.0001*	0.0051*	<.0001*	<.0001*	0.1019	<.0001*	<.0001*	<.0001*	<.0001*	<.0001*	0.0078*	<.0001*	<.0001*
Diff LL indiv. vs full	**73.3**	**38.9**	**23**	**16.6**	**20.8**	**34.4**	**20.8**	**12.7**	**23.7**	**17.6**	**43.8**	**15.1**	**17.5**	**20.1**	**12.1**	**25.5**	**20.4**	**59.3**	**47.6**	**26.8**	**17.8**	**26.8**	**38.5**
Prob>ChiSq (8)	0	0	0.0001	0.0049	0.0003	0	0.0003	0.0448	0	0.003	0	0.0139	0.0025	0.0056	0.0645	0.0001	0.0003	0	0	0	0.002	0	0