

Using correspondence analysis for analyzing regional differences in Swedish upper secondary education

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Introduction

In the 1990s, Swedish upper secondary education was subject to a radical transformation initiated by the reform of upper secondary education launched in 1991. All Swedish secondary school study programs were made homogenous in terms of length (3 years) and status as regards formal qualification for the entry into post-secondary education. Affirming the formally equal status of all upper secondary education study programs in all schools throughout the country, the reform abandoned the previous sharp division between “theoretical” programs and vocational training programs. However, the shift towards a unified upper secondary education system was accompanied by a parallel shift from a bureaucratic, rule-based management of the education system to a goal and result-oriented type of management (“decentralization”). Great freedom was given to secondary schools to create their own local “profiled” versions of the 16 national study programs, creating a previously unknown heterogeneity of upper secondary education programs. Also, in 1992, Sweden opted for a voucher system in all compulsory education, giving families the right to freely “invest” the public funding for the schooling of their children into any private (“independent”) school, regardless of district or municipality boundaries. As a result, the 1990’s witnessed, especially in the large cities, a rapid expansion of independent schools, both at primary and secondary levels, and a sharp increase of secondary school study programs, also in government schools, with a local “profile”. As a consequence, the tendency towards homogenization inherent in the reform of upper secondary education in 1991 was counter-balanced by the creation of an educational market in which both schools and students and their families have to compete. The education reforms preserved and even strengthened the form of the organizationally homogenous secondary school, while simultaneously creating unparalleled institutional and political conditions for increasing social and cultural differences between schools and study programs. The latter tendency was probably also reinforced by an alteration of the relationship between formal education and the labor market. The bad economic tides in the 90s made an early entry into the labor market an even more unrealistic possibility than before, imposing the necessity of continuing in the education system. As a consequence, educational competition became more intense.

However, the process of marketization of secondary schooling has been subject to various constraints. Primary and secondary education primarily being the responsibility of local governments at district or municipality level, local political traditions and balances have had a say in shaping the effects of the reform, e.g. through promoting or holding back the

establishment of independent or private schools. An example of the former tendency is the Swedish capital, Stockholm, where the local right-wing government abolished, in 1999, inspired by an ideology encouraging competition and “diversity”, the principle that secondary school students had the right to study in the public school neighboring their home residence, granting pupils and families the right to compete for entry into any secondary school in the city (thus giving the public *lycéés* a status equal to the one of independent or private schools as regards the right, and necessity, to compete for the pupils they recruit). In other municipalities, especially ones with strong social-democratic political traditions, an opposite tendency could be observed, that of restraining market mechanisms. Further, the socio-economic character of a municipality or district tends to encourage or discourage a liberal, market-oriented interpretation and implementation of the reforms at local level. This is so because a strong presence, like in the big cities, of social groups with high volumes of both cultural and economic capital by itself favors completion, imposing on families a necessity to seek for and fight for the best educational opportunities for their children, i.e. study “environments”, schools and study programs, where children with less school success, most often children with a more modest social origin, are eliminated through competitive selection. In other words, the education reforms in the beginning of the 90s opened up the door for a transformative force that could inflict itself on the scene of upper secondary education only when certain socio-demographic conditions were at place. The education reforms preserved and even strengthened the form of the organizationally homogenous secondary school, while simultaneously creating unparalleled institutional and political conditions for increasing social and cultural differences between schools and study programs.

An analysis of the effects of these transformations on the social structure of upper secondary education brings a number of problematic issues to the forefront, some of which will be discussed in this paper. In the following, correspondence analysis will be used for comprehending the social structure of upper secondary education in four different regions of Sweden with a view to make comparisons of the effects of the reform. We shall use sets of individual data, comprising all students enrolled in the second year (corresponding to 11th grade, the year in which students make a choice of an often differentiating orientation within the 17 standardized national study programs) of upper secondary education in the four regions in the fall of 2001. For each individual student, we have information on the particular study program, as well as the orientation within this program, and on the school that the student attends. Adding data at individual level from the national census, we also have the possibility to classify (on the basis of information on both parents’ professions and educational level) the social origin of the student according to a classification system comprising 32 social groups (see Appendix). Since we will opt for using simple correspondence analysis, the rows we create will represent study programs at various secondary schools (each row representing a study program at a particular *lycée*) and the columns represent the number of students with a particular social origin. We will interpret the outcomes of the correspondence analysis in the light of other research findings - acquired through interviews or collection of secondary data - related to the local social, political and administrative context in which upper secondary education is embedded.

Our analysis focuses on four regions with different characteristics in terms of demography, economic life, institutional development, political history and geographical location – the Stockholm region, the Gothenburg region, the Uppsala region and the county of Gävleborg (see map). Before we proceed, each region will be briefly introduced and characterized along a few common pertinent dimensions. However, since the correspondence analysis employed for grasping the structure of upper secondary education in the four regions will take the recruitment profiles of the existing – and to some extent locally varying – study

programs as its point of departure, we will also shortly explain the current organization of Swedish upper secondary education and its nomenclature.¹

1.1 Swedish upper secondary education in the 90's

1.1.1 Decentralization and diversification

The reform of upper secondary education in 1991 can be seen as part of a political reform process of decentralization. A model of national governing of the school system based on the formulation of nationally decided general objectives combined with a freedom for municipalities and schools to take responsibility for the means through which these goals are achieved gradually replaced a governing model operating through regulations and ear-marked funding. The launching of a supposedly decentralized model for governing the education system created at least three “arenas”² for the creation and implementation of the education act of 1991: at the national arena the reform is conceived, debated and decided upon politically in a process where political parties, organizations and unions are major stakeholders; at the arena constituted by the municipality, the reform act is reinterpreted in a similar process with similar, but local, stakeholders and it is transformed into directives concerning admission, funding and priorities as regards provision of study programs and creation of schools; finally, at the arena represented by the individual school, the reform takes a concrete form, again filtered by a process of sometimes opposing forces, through the offering of study programs with a specific local profile, content and study organization.

The national study programs, curricula and regulations regarding student qualifications, evaluation or the distribution of available time across subjects or courses provide a format within which a municipality and even an individual school can find a number of often fairly different ways of organizing teaching and other school activities. Starting in the equivalent to Grade 10, all national programs have the length of three years and none does formally exclude the students attending it from pursuing their studies in higher education, although the universities may in practice demand at least complementary studies in order to accept students coming out of most of these study programs. Three secondary study programs have their origin in earlier programs previously recognized as the only ones leading further to higher education, namely the ones in Science, in Social science and in Technology. Although the remaining 14 study programs have the same length, they all, in fact, remain having a basically vocational orientation and keep, as will shall see, a lower profile as regards the social recruitment of their students.

For the second and third year of upper secondary education, most of the national study programs divide into nationally defined specializations. In addition, schools have the possibility to apply for establishing locally defined specializations, a profile program, either local variants of the national ones or new ones. Both at school level, among teachers involved in such locally shaped variants of the national study programs, and in the marketing of a school in its attempt to attract students, these local specializations of especially the Science

¹ This paper was written within the project "The competition field of secondary education", funded by the Swedish Research Council's Committee for Educational Science.

² See Lindensjö, B. & Lundgren, U. P: *Utbildningsreformer och politisk styrning*, Stockholm: HLS Förlag, 2000 (Educational reforms and political governing)

and the Social science programs have come to play an important role. The current trend is also that they increase in number.

Further, municipalities and secondary schools have the possibility to arrange what is named a “specially designed program”, in addition to the national study programs. This is done when the changes made to a national study program, for example in terms of subjects or allocation of teaching time, become so many that the National Board of Education cannot authorize them within the definition of minimum requirements for the national program. Special study programs of this kind are normally more expensive to offer, since they often imply special arrangements as regards teachers or activities. Initially, they were conceived as a possibility to establish study programs adapted to a local labor market, i.e. programs with a vocational orientation. Nevertheless, as an effect of the marketization process, the specially designed programs tend to increase rapidly in number, often being the opposite of vocational ones, and especially so in the capital, Stockholm.

National study program	Nationally established specializations (as opposed to local specializations)
Child and Recreation	Recreational, Educational and Social Activities
Construction	Construction, Building, Painting, Metalwork
Electrical Engineering	Automation, Electronics, Electrical- and Computer Technology
Energy	Operation and Maintenance, Marine Technology, Heating, Ventilation and Sanitation
Arts	Art and Design, Dance, Music and Theatre
Vehicle Engineering	Aeronautics, Coachwork, Motor Vehicle Mechanics and Engineering, Transport
Business and Administration	Business and Services, Travel and Tourism
Handicrafts	Various trades and crafts
Hotel, Restaurant and Catering	Hotel, Restaurant and Catering Services
Industry	Local specializations, country-wide recruiting
Foods	Local specializations, country-wide recruiting
Media	Media Production, Printing Technology
Natural Resources	Local specializations
Natural Science	Mathematics and Computer Sciences, Environmental Science, Natural Sciences
Health Care	No national specializations
Social Science	Economics, Liberal Arts, Social Sciences, Languages
Technology	Local specializations

Source: National Board of Education, <http://www.skolverket.se/>

I.1.2 Conditions for and effects of marketization

Study programs with a specialization or profile, specially designed study programs and independent or private schools play a key role in the marketization of Swedish upper secondary education. Traditionally, upper secondary students would as a rule be expected to pursue their studies at the geographically neighboring *lycée*. With the education reforms in the

90s and the introduction of a school voucher system, this general rule has become less or even far from general. Firstly, within a municipality public schools have to compete with independent or private ones. Since the independent schools most often limit their study program profile to the two elite programs preparing for further studies, Natural Science and Social Science, they tend to recruit only students with an ambition to continue their studies in higher education, hence, as schools, to provide a socially and scholarly exclusive, less heterogeneous environment. This is the basis for the “white flight” of middle class students from socially and scholarly heterogeneous compulsory and upper secondary schools to homogenous ones where students from lower social strata are heavily reduced in number and carefully selected scholarly.³ Secondly, since a student in upper secondary education has the formal right to study at a program of his or her choice, a municipality that cannot provide this particular study program is obliged to accept that the public funding, the school voucher, for this student is invested into a school, public or independent, offering that study program in another municipality. Municipalities may either try to restrict the flow of students to schools in other municipalities or try to compete with the educational offer from outside the municipality. Thirdly, since the funds available for both public and independent schools almost entirely depend on the voucher system, i.e. on the number of students a school can recruit, upper secondary schools have to a varying degree - depending on the local regional context - a need to attract students in competition with other schools, within or outside the municipality. While traditionally prestigious schools, like many of the old *lycéés* in the big cities, may discretely advertise their anciennity and good reputation, as well as their attractive geographical location, other schools may advertise themselves through launching local profile programmes or even specially designed study programs that attract students and also, like in the case of many specialized programs, enable the school to recruit students from outside the municipality. The proliferation of both profile programs and of specially designed programs comprises educational offers ranging from close contacts with university departments to the free distribution of a notebook computer or horse riding in afternoons.

I.1.3 Elite study programs

Traditionally, the Natural Science and Social Science study programs are the elite programs in Swedish upper secondary education. Recruiting the students with the best school results from compulsory education and with the highest social origin, they also send most students off to higher education. In recent years, the Natural Science program has established itself as the elite program *par excellence*, receiving for example close to 50% of all students from households where one of the parents is a physician or a university teacher, while the Social Science program struggles with a certain heterogeneity as regards the social and scholarly recruitment of its students. However, as we shall see from our analysis, the dominating position of the Natural Science program has been challenged in recent years, especially in the Stockholm region where educational competition has accelerated the most, by both local profile programs in Social Science and by specially designed programs at public as well as independent or private schools.

³ Blomqvist, P. & Rothstein B. (2000): *Välfärdsstatens nya ansikte. Demokrati och marknadsreformer inom den offentliga sektorn*. Stockholm: Agora.

1.2 Four regional contexts

Before entering into the details of the correspondence analysis, we will briefly describe the four regions that constitute the focus of our analysis, concentrating on their socio-demographic character, political situation, range of schools and, finally, regulative systems as concerns independent schools, admission to upper secondary education and exchange mechanisms for public funding.

1.2.1 The Stockholm region

Being by far the richest and most populated area of the country, the Stockholm region provides a firm demographic base for the increasing diversity and differentiation of upper secondary education. Comprising 26 municipalities, one of which is the town of Stockholm, the county of Stockholm has a population of 1.8 million, represents $\frac{1}{4}$ of the total Swedish economy and stands for 40% of the country's annual economic growth. The region hosts the head offices of most leading Swedish companies, along with a number of government departments, larger organizations and various institutions for higher education, which explains the strong presence of social elite groups with different compositions of capital (in the Bourdieuan sense). In 2000, the average income in the county of Stockholm was 122 on an index scale where no other county surpassed the medium value 100.

Politically, the richer municipalities, especially the ones neighboring the city of Stockholm to the North, have been dominated by right-winged or non-socialist local governments, while poorer municipalities, either located at the margin of the Stockholm area or to the south of the city, have stayed social-democratic. The municipality of Stockholm itself, the capital, was until recently, for a period of eight years, governed by a non-socialist coalition. The political tensions between richer and poorer municipalities – in part expressed in a geographical opposition between the North and the South - and between municipalities governed by non-socialist parties and the ones dominated by the social-democracy, probably explain why the Stockholm region has not, like the Gothenburg region, developed a common administrative framework for the expansion of upper secondary education. Whereas the Gothenburg region has created a common system for the admission of upper secondary students, including a regulation for how public funding for upper secondary studies can be transferred from one municipality to another, the municipalities surrounding the city of Stockholm have typically made agreements on partnership only with neighboring ones regarding admission and exchange of funding. Analyzing the flows of students going from compulsory education (Grade 9) to upper secondary, one can observe a centrifugal force, students from outer-suburban areas preferring schools in suburban areas and students from suburban areas trying to get admitted to schools in the city of Stockholm itself.

The often non-socialist local political settings, favoring “the liberty of choice”, in combination with the strong presence of social elite groups with an interest in and capacity for developing competitive educational strategies, provide the basis for the rapid expansion of independent or private schools and the parallel spread of local specialized study programs. The number of independent schools reached 23 in 1997 and 44 in 2001, a year when the total number of upper secondary schools in the region totaled 107. Most independent schools being small in volume, the total number of students in public schools, though, by far exceeded the number in non-public ones. In central Stockholm, the old, public *lycées* – like *Södra Latin*, *Kungsholmen*, *Östra Real* and *Norra Real* – have kept their positions as elite schools, as have the few traditional, independent schools with a background in the old bourgeoisie, like *Sigtuna* and *Enskilda Gymnasiet*. However, these positions have increasingly been challenged

by recently established independent schools targeted for students with a high degree of school success in compulsory education and, normally, with a high social origin, especially *Viktor Rydberg* and the *Internationella Gymnasiet*. The increasing diversity of upper secondary education has also had a special impact on study programs and schools oriented towards art, theatre and music, a sub-field which has seen numerous profile study programs and specially designed programs at public school come to exist, as well as independent schools focusing, especially, on music.

I.2.2 The Gothenburg region

Dominated by the city of Gothenburg, Sweden's second largest city and most important harbor, "The Gothenburg region" is the name of an administrative collaboration between 13 municipalities surrounding the city itself and hosting approximately 0.6 million inhabitants. Like the Stockholm region, the Gothenburg area is characterized by a diversified structure of commerce and industry, supplying a potential basis for a diversification of upper secondary education as an effect of a marketization process. Within the municipality of Gothenburg itself, the inner city is distinguished by its large population of groups with a comparably strong cultural capital (university teachers, physicians, journalists, senior officials, art producers, etc). In the North of the city, nearby suburbs are characterized by an immigrant and working class population, while remote suburbs often tend to be dominated by groups with a strong economic capital. In the South of the city, a similar structure exists, although the poorer suburbs have less impact on the general social landscape. The other municipalities in the region could be roughly categorized as either largely working class (workers, fishermen, farmers), like the ones north of Gothenburg, or largely upper middle-class with a population of economically well-off families (civil engineers, managers, businessmen, and to a lesser extent university teachers and physicians), like some of the independent municipalities being suburbs to the city of Gothenburg.

Politically, the region is characterized by its comparably strong social-democratic traditions, with a leading role for the city of Gothenburg which for a long period of time has been governed by either a socialist or a coalition government. In contrast to the Stockholm area, the municipalities who have joined the Gothenburg regional network have, in 2002, in spite of political differences and differences between rich and poor municipalities, agreed on a common policy as regards admission to upper secondary education, as well as the flow of students and inter-municipal exchange of funding. As a result, the Gothenburg region with its currently 45 upper secondary schools, has recently granted all students within the region the right to apply to any secondary school in the region, regardless of municipality. In spite of a political acceptance of independent schools, the region has witnessed a fairly modest expansion of non-public secondary schools, although some of the existing ones occupy dominant positions in the field of upper secondary education.

I.2.3 The Uppsala region

In the present study, the Uppsala region is composed of the three (out of seven) municipalities of the county of Uppsala that have formed a partnership in the area of upper secondary education. Dominated economically and demographically by the municipality of Uppsala, the region – with a total population of approximately 230.000 people - is characterized by the particularly strong representation of social groups with a high volume of cultural and educational capital: university teachers (upper secondary students in the Uppsala region four

times more often than students at the same level in general have a father or mother who is a university teacher), physicians, higher and medium officials and journalists. It is likely that this demographic profile to a large extent is explained by the presence of Sweden's second largest university and one of the country's most important hospitals.

Politically, the municipality of Uppsala has been governed by a socialist-dominated coalition for two electoral periods, while the other two municipalities are socialist or governed by a coalition. This political context probably explains the implementation of principles for admission to upper secondary education that probably are unique for this region. While students cannot apply for admission to a specific school or lycée, but only to a study program, they are guaranteed the right to get admitted to the program of their choice. As a consequence, students can influence the choice of school only through opting for a study program that only exists at the school of their choice. The regions houses 13 public upper secondary schools and only five independent ones (in 2002). Traditionally, a leading position has been upheld by the oldest lycée, the *Katedralskolan*, located in the centre of the town in proximity with the various university departments and faculties, a position that is challenged only by the *Lundellska gymnasiet*, also public.

I.2.4 The county of Gävleborg

The county of Gävleborg, finally, contrasts sharply to the Stockholm and Gothenburg regions. Dominated by forest areas, the county has a population of 280.000, with a relatively large proportion working in forestry, agriculture and steel and paper industry. The average educational level being among the lowest in the country, the region hosts only one institution for higher education, the university college of Gävle. The county capital, Gävle, is the only city in the region approaching a population of 100.000 inhabitants. A majority of the 10 municipalities have had a long-lasting socialist majority-rule. Probably, the weak presence in the region of social groups with strong volumes of economic and cultural capital, in combination with a political determined distrust of independent schools, is the reason for extremely slow expansion of non-public upper secondary schools, the first one appearing only in 2002. In the largest city, Gävle, the traditionally leading school for the educated layers of society is the *Vasaskolan*, a *lycée* in the old sense of the word. The city also houses *Borgarskolan*, with an origin as a commercial school, and *Polhemsgymnasiet*, a school with traditionally technical and vocational study programs. The slow expansion of independent schools, as well of specialized, local variants of the national study programs, together with often fairly large geographical distances between different municipalities, probably explain why no common regional agreement on admission to upper secondary education and exchange of public funding for school vouchers has yet been reached. In a situation where most municipalities have an annual exit of especially young inhabitants to the large cities in the South, in particular to Stockholm, the conservation of the upper secondary school has been seen as a means in the struggle for defending the municipality. However, most municipalities have reached partnership agreements with neighboring ones that guarantees a wider range of optional study programs for students entering upper secondary education. Recently, the region saw the birth of its first independent school, when a larger Swedish steel company in the city of Sandviken established a particularly well-equipped upper secondary school with an orientation towards Natural Science and Technical study programs.

II. Some theoretical and methodological considerations

Before discussing the correspondence analysis of the recruitment profiles to upper secondary education in the four regions, a few theoretical and methodological observations should be made.

II.1 The notions of “field” and “social space”

A first obviously problematic issue regards the delimitation of the areas – or rather the upper secondary schools – that are the object of the correspondence analysis. As the short overview of the four regions has shown, the four regions differ considerably with respect to the possibility of students to move freely across municipality borders or to compete for entry into all of the upper secondary schools included in the analysis. Inversely, all schools do not compete with all other schools for recruiting the students they seek to recruit. In order for a “social field” to exist, in the Bourdieuan sense of the word, either students or the schools themselves would have such relationships to each other that the strategies of the other participants in the field influence their own strategies in a manifest way. Within most municipalities, competition exists with regard to the admission to study programs, the average mark obtained in the final year of compulsory education normally being decisive. An exception is the Uppsala region that guarantees all students admission to the program of their choice. In contrast, few municipalities allow free competition for the admission to schools – if they are public (the competition for admission to independent or private is always free). An exception is the municipality of Stockholm, where only geographical distances constrain the competition between students and schools within the municipality, while numerous partnership agreements either hinder or promote competition in other municipality areas in the region. As for the Uppsala region, students can only in a limited way influence their choice of school. In the Gävleborg region, finally, free competition is in practice with few exceptions an unknown phenomenon. Virtually all upper secondary schools being public ones and the provision of upper secondary study programs being planned in accordance with the expected demand, students rarely have to compete for admission.

Obviously, then, the regional analyses discussed here are not analyses of social fields. However, they do give a picture of the relationships between recruitment profiles of schools in areas that are geographically and administratively interconnected, albeit in somewhat varying ways. The analysis uncovers the structure of upper secondary education in these areas as a social space, but has to take into account the differing additional characteristics of the various spaces being analyzed.

II.2 The definition of social groups

In the analysis that follows, a classification system comprising 32 social groups will be used. Inspired by the notion of “capital” in Bourdieuan sociology – symbolic resources of various kinds, as well economic or material resources, which need to be kept separate in the sociological analysis – this classification system was designed with a purpose to catch differences as regards symbolic or material assets between groups along more than one single, hierarchical dimension, while still respecting the unavoidable restraints imposed by the

classifications systems and variables found in the official statistical data that are used. While this classification system has proved to be useful in numerous previous analyses (which is the reason for it being used here), it still poses problems of both theoretical and practical nature. First of all, the social groups identified by the classification system are likely to assume different roles in relation to each other, i.e. different meanings, in different social contexts. For example, a “farmer” in the Stockholm area most probably is something different from a “farmer” in the mostly rural context of the county of Gävleborg. The identification of a social group and its separation from other groups by means of a limited number of pertinent properties, for example the profession or the educational level, may hide from the analysis a set of other properties that are often not visible in the information provided by official statistical data but nevertheless crucial for the understanding of, e.g., the group’s educational strategies in a socially structured regional education system. In other words, the fact that the social group in the sense defined by the classification system is “the same” across regional contexts does not imply that it is necessarily the same group in sociological terms.

Secondly, social groups are unequally distributed in the geographical space and some groups may be weakly represented in terms of number in a particular regional context. Since the present analysis takes as its point-of-departure the distribution of all social groups at upper secondary study programs and schools in a regional context, the pattern that the distribution of a numerically small group represents may be rather accidental and also vary considerably between years. This problem is probably one of the explanations for the weak strength of the second dimension unfolded by the correspondence analysis for all other regions than Stockholm in the analyses that will follow. Since the polarities pointed to by the correspondence analysis nevertheless make sociological sense, particular attention will be given to exploring the meaning and accuracy of the oppositions made visible by the analysis.

III. The social structure of upper-secondary education in 2000

Let us now examine the structure of upper secondary education in 2000 in the four regions using simple correspondence analysis.

III.1 Stockholm: marketization and the renewal of traditional hierarchies through multitude and diversity

Being the biggest and most diversified region in demographic terms, the Stockholm area offers the demographic conditions for a marketization of upper secondary education. If we consider differences and similarities between recruitment profiles to all study programs at all upper secondary schools, independently of municipality borders, in the county of Stockholm, two fundamental oppositions reveal themselves. The first is a purely hierarchical one, opposing study programs and schools, to the left in the graph, characterized by a particularly strong recruitment of students with a high social origin (sons and daughters to executive managers, senior administrators, lawyers, civil engineers, senior civil servants, physicians, university teachers) to programs and schools, to the right, receiving many students with low social origin (workers in production and service, clerks). The first pole is entirely constituted by study programs in Natural Science and Social Science at schools in the city center or in wealthier Northern suburbs, while the second one comprises predominately vocational study programs or programs located at schools in less wealthy Southern suburbs. This geographical

opposition is not a perfect one, but largely corresponds to the social structure of the geographical space of the Stockholm region.

The correspondence analysis also unfolds a second opposition between, on the one hand, study programs and schools largely populated by social groups whose positions depend on the possession of cultural and educational capital, e.g. physicians, university teachers, subject teachers, journalist and art producers, and, to some extent, senior public civil servants, and, on the other hand, programs and schools characterized by a strong recruitment of students from social groups that stand closer to the economic sector in society and for whom economic capital is equally or even more important, e.g. executive managers, senior administrators in the private sector, merchants, private technicians and small entrepreneurs. In terms of study programs and schools, this opposition consists to a large extent of a difference between schools in the city center, most often the old prestigious public *lycéés*, like *Södra Latin*, *Kungsholmen*, *Östra Real* and *Norra Real*, and schools, both independent and public ones, located in the wealthier ones of Northern suburbs. At one of the extreme ends of this opposition, on the side where cultural capital is particularly important, we find the Steiner schools located in the Stockholm area, highly esteemed by social groups such as art producers, journalists and teachers. The opposition between a cultural and an economic pole is to some extent also a difference between study programs as such, the Natural Science program being particularly important to culturally strong groups and the Technical program having a stronghold among the groups closer to the economic sector.

The correspondence analysis makes some of the effects of marketization in the Stockholm area visible. Having rapidly increased in number during the last five years, independent schools occupy both elite positions and more modest ones. In particular, among the new independent schools created after the educational reforms, *Viktor Rydberg* and to a lesser extent *Internationella gymnasiet*, occupy leading positions in the structure, while older independent schools like *Enskilda gymnasiet* and *Sigtunaskolan* maintain traditionally prestigious positions closer to the economic pole. It should be noted, however, that most of the traditional public *lycéés* in the city center occupy similar elite positions and have not, like in Gothenburg, lost ground in relation to the independent schools.

Another striking feature of the effects of marketization on the structure of upper secondary education in Stockholm is the rapidly growing number of both specially designed study programs (SPD) and local profile study programs (LPP) occupying elite positions. This is probably a direct result of the institutional competition between schools for recruiting students, reinforced as it were by the abolishment, in the municipality of Stockholm, in 1999, of the principle that public schools need to give priority to students living in their surrounding neighborhood (proximity principle). Both specially designed programs and local profile programs tend to create more homogeneous student groups than the ones found in “ordinary” study programs. In a socially heterogeneous context, where a study program in an ordinary public upper secondary school such as Natural Science or Social Science receives students from fairly different social groups and with fairly different educational careers, both families and teachers may look for socially and scholarly less heterogeneous study environments, composed of students who supposedly are more “motivated” or more “interested” in the kind of studies that the study program represents. With the emergence of independent schools, basically offering precisely that homogeneity, the need, at public schools, to provide a similarly homogeneous educational offer, was reinforced. By the same token, the specially designed study programs, originally conceived as a possibility to create study programs adapted to the local labor market, offered a possibility for schools to create selective study environments. Also, a specially designed program, per definition unique, may more easily get acceptance from municipalities to put at their disposal, independently of municipality borders, the public funding (through the school voucher) for a student choosing such a program, thus

increasing the potential “market” for the study program. In addition, it may also potentially be more successful in getting acceptance for a higher cost per student, although municipalities have become increasingly reluctant to recognize any study program’s claim that it needs more funding than other programs. To summarize, the large amount of study programs of these two kinds in the elite subfield of the structure of upper secondary education in Stockholm should be seen as an indicator of the impact of the competition both between social groups and between schools imposed by the marketization process.

The seriousness, both for students or families and for schools, of this competition, in the aftermath of the abolishment of the principle of proximity in conjunction with the struggle for funding provided by the school voucher, is expressed by the changes in the recruitment to *Södra Latin*, one of the old prestigious lycées in the city center. Previously a reservation for the culturally strong social groups living in the culturally prestigious part of the inner city that constitutes its immediate neighborhood, the school, in 2001, received students from most part of the municipality of Stockholm, highly selected scholarly and, as a consequence, socially.

III.2 Gothenburg: marketization in slow progress

In Gothenburg, like in Stockholm, the first dimension opposes study programs and schools, on the left side of the graph, distinguished by the fact that they recruit particularly many students from fractions of the dominating class, i.e. from social groups with high volumes of capital, to study programs and schools, on the right hand of the graph, characterized by the inversed recruitment profiles. However, Gothenburg differs from Stockholm in at least two respects. *Firstly*, the elite pole in this structure, is constituted solely by three independent schools and the study programs they offer. All three schools are traditionally prestigious private schools with anciennity, established long before the education reforms of the 90’s that opened up the door for the expansion of non-public schools. The Natural and Social Sciences study programs at *Sigrid Rudebeck*, *Göteborgs Högre Samskola* and *L-M Engström* have a particularly high profile as concerns both the social origin and the scholarly excellence of their students. Interestingly, the traditional public *lycée* of the inner city, *Hvitfeldtska*, occupy a second-ranked position. The shadowed area of the graph indicates the area of the social space of upper secondary education in the region where one finds Arts, Natural and Social Sciences study programs at public schools, either in the city of Gothenburg or in surrounding municipalities. However, in the local sub-spaces that these municipalities represent, these study programs often occupy dominating positions. *Secondly*, the dominating pole in the structure of upper secondary education is characterized by the strong presence of cultural fractions of the dominating class and the relative absence of economic fractions. In contrast to Stockholm, the social hierarchy found in upper secondary education can be said to be more uni-dimensional, with study programs and schools dominated by culturally strong groups occupying the leading positions. However, within the shadowed area of the graph representing study programs coming closest to the elite schools, one can observe an opposition between cultural and economic poles in the field of upper secondary education in the region, the cultural one appearing at the bottom of the graph and being represented in particular by the Steiner schools, highly esteemed by art producers and journalists. *Thirdly*, the market mechanisms created by the education reforms have not, as yet, led to the establishment of new independent schools or study programs that occupy leading positions in the structure. As can be seen from the graph, all but one of the recent independent schools position themselves in areas of the space inferior to the shadowed area representing Natural

and Social Sciences study programs at more important public schools. Also, by the same token, the area where elite study programs and schools are located, does not include any specially designed study program (SDP) at all. A likely sociological explanation is that the marketization of upper secondary education in the Gothenburg region has been considerably slower than in the Stockholm region and has, as yet, had less an effect on the social structure of the space. We may find one explanation for this in the dimension indicated by the second axis.

The second dimension put forward by the correspondence analysis is primarily a geographical one, opposing study programs and schools in specific remote suburbs of Gothenburg, to ones in the city center or in nearby suburbs. However, this geographical opposition corresponds to a social one. The municipalities, schools and study programs appearing in the upper part of the graph, like Natural Science at *Kongshälla*, *Ale* and *Nönäs*, are all characterized by a particularly strong presence of economic fractions of the dominating class and middle class – executive managers, entrepreneurs, technicians in the private sector. One can observe that the Humanities study orientation of the Social Sciences program at *Nösåns gymnasium* typically deviates slightly from the other study programs at the same schools in that it receives more students from cultural fractions. The opposite pole of the opposition pointed out by the second dimension is constituted by both the elite study programs in the city centre and the working class and immigrant dominated study programs and schools in nearby, proletarian suburbs. A typical school representing the latter area is *Ångeredsgymnasiet*, located in the low-right corner of the graph. The oppositions made visible by the second axis points to a possible sociological explanation to the relatively modest impact of market mechanisms on the structure of upper secondary education in the Gothenburg region. The traditional independent schools in the city centre being a reservation for the culturally strong fractions of the dominating class and the rivaling economic fractions largely being present in municipalities where their educational needs have been met by the local public schools they themselves dominate, the latter fractions have not, like in Stockholm, procured independent schools in order to challenge the monopoly of culturally strong groups in the area of education. Perhaps, this is the reason why the “marketization” taking place in Stockholm has not yet had a major impact on the social structure of upper secondary education in the Gothenburg area.

III.3 The Uppsala region: the domination of cultural capital

In the Uppsala region, the schools and study programs in the municipality of Uppsala – a city dominated by one of Scandinavia’s biggest universities, numerous small high-tech companies and one of the country’s most important and specialized hospitals – as expected plays a crucial role in structuring upper secondary education. The first dimension opposes, on the left side of the graph, the Natural and Social sciences programs at the two socially most distinguished schools in the city, *Katedralskolan* and *Lundellska skolan*, both public, to study programs on the right hand side which are either predominately vocational or located at schools situated - like *Högbergsskolan* in the municipality of Tierp - in the countryside at a distance from the town of Uppsala. This polarity opposes university teachers, physicians, lawyers, senior administrators and senior civil servants, engineers, subject teachers, journalists and art producers from workers and farmers.

A few comments should be made to this dimension. First, in contrast to Stockholm, but also in a less obvious way to Gothenburg, the dominating pole in this opposition is composed

solely of fractions of the dominating class possessing high volumes of cultural and educational capital, engineers and lawyers positioning themselves closer in the space to university teachers and physicians than in Stockholm and Gothenburg. Despite the apparently clear separation of social groups appearing in the social classification system (that necessarily operates with categories defined by a limited number of crucial characteristics), groups such as engineers, lawyers and even senior administrators or civil servants are likely, in a social contexts such as the one of Uppsala, to depend more on their purely cultural and educational capital, working e.g. in the small high-tech companies that are off-springs from the university to possess properties, and to come closer to groups such as university teachers or physicians.

Secondly, in this purely socially hierarchical dimension one can observe a total absence of independent or private schools among the study programs constituting the dominating pole. The shadowed area of the graph includes the Natural and Social Science study programs at *Katedralskolan* and *Lundellska skolan*, but also the one for Natural Science at *Uven* and *Fyrisskolan*. Historically, *Katedralskolan* is the *lycée* of the city center, situated in the midst of the various university departments in the inner city. The *Lundellska skolan* was originally created in opposition to the dominance of this *lycée*, representing at the time a more progressive, “modern” pedagogy, although it now fulfills a similar social function. The case of the *Uven* upper secondary school is interesting. Being a school designed for particularly unsuccessful students, its specially designed study program oriented towards social sciences was created through an exodus from the *Katedralskolan* by left-winged students seeking for a less socially selective study environment. These students have long since left the school, but the study program remains, occupying a particularly selective position in the structure of upper secondary education in the city close to similar study programmes at *Katedralskolan* and *Lundellska skolan*. The sociological explanation for the total dominance of public schools is probably that the existing public elite schools have been sufficient for satisfying the needs of selective study environments of a social elite that is comparatively homogenous in as far as its social positions rely first of all on the possession and reproduction of cultural and educational capital. Since independent or private schools operate strictly on the basis of an educational demand made visible by the market mechanisms created by the education reforms of the 90’s, there has not – as yet – existed a basis for the establishment of independent schools with study programs that could rival the ones found at the most prestigious public schools.

Thirdly, the graph makes visible the abundance, compared to the other regions⁴, of both specially designed study programs (SDP) and local profiled variants (LPP) of the national study programs. This is an effect of the particular admission system introduced in the Uppsala region by means of a political agreement between the social-democracy and certain non-socialist parties with a view to avoid educational competition, guaranteeing all students the right to be admitted at the study program, but not the school, of their choice. As a result, upper secondary schools have gradually come to established supposedly unique profiled study programmes of this kind in an attempt to guarantee students the possibility to be admitted to their school. However, since the most procured and most prestigious schools and study programs, like Natural Science at *Katedralskolan* or *Lundellska skolan*, do not have the status of a unique, profiled study program, families with strong cultural capital make hard pressure on the education authorities to get acceptance for the admission of their children.⁵ A peculiar

⁴ The number should be seen in relation to the total number of all study programs existing in the region; if the Stockholm region hosts more study programs of this kind, in numbers, this is because the total number of study programs in all 60 upper secondary schools in Stockholm by far exceeds the number in any other region.

⁵ Since this study program is particularly valued by physicians, an administrator at the education office at the municipality complained in an interview of all medical statements made to prove that a particular student for medical reasons had to attend *Katedralskolan* and not another upper secondary school offering Natural Science.

effect of this admission policy is the recruitment to the only public media study program existing in the region, *GUC*. With a high demand from students and a social pressure from the media industry, the municipality, according to its own policy, had reluctantly to create a previously non-existing study program of this kind, which soon became the biggest singular study program in the city, positioned in the center of the structure (see graph). This study program has recently been replicated in a new independent school, bearing almost the same name, using partly the same teachers, counting a smaller volume of students and occupying a lower position in the structure.

The second dimension made transparent by the correspondence analysis opposes, at the top of the graph, study programs characterized by recruiting almost only students of Swedish origin, and, at the bottom of the graph, study programs attracting many students with immigrant origin. Although considerably weaker in statistical terms, this opposition points to a crucial dimension of the space constituted by upper secondary study programs and schools. Among the study programs and schools that constitute the first pole, the Christian fundamentalist *Livets ord* sticks out, an independent school basically recruiting only students originating from the Christian movement's own independent compulsory schools. Another study program constituting this pole is local profile of Natural Science at *Forsmarks skola*, a program connected to a nuclear power station with the right to recruit students from all over the country. It is likely that the high marks needed to get admitted, in combination with the demands on social or economic capital necessary for arranging accommodation during the study periods in the remote area where the school is located, as well as on informational capital needed for knowing about the existence of the study program, exclude students with immigrant origin. Study programs opposing these ones can be found at *Celsiuskolan* in central Uppsala. Hosting a study program that prepares mainly immigrant for upper secondary education, this school has for political reasons been a particular concern for the municipality. In order to encourage immigrant children to pursue studies preparing for higher education, the school, being public, has not been authorized to establish study programs with a vocational orientation. As a result many students with immigrant origin continue from the preparatory program to, especially, the Social Science study program, with the effect that students of Swedish origin avoid the school, reinforcing its immigrant character. The case of *Celsiuskolan* can be seen as an example of how the political governing of upper secondary school has an effect on the flow of students and the structure of the space of education at this level.

III.4 The Gävle region: marketization unknown and preservation of traditional hierarchies

For the region of Gävleborg, the less urbanized area, the correspondence analysis unfolds a structure whose first dimension is both meaningful and manifest, while the second dimension, in spite of being clearly relevant, is statistically less secure. The first axis opposes, on the left hand side, all study programs at the traditionally most prestigious *lycée* in the region, *Vasaskolan* in Gävle, as well as study programs in Natural Science and Social Science in the region's other middle-ranged cities (the shadowed area of the graph), to, on the right hand side, both vocationally-oriented study programs in the region and study programs in minor urban centers. This opposition corresponds to an expected social hierarchical dimension - social elite groups like physicians, senior civil servants, subject teachers, engineers, journalists and art producers distinguish themselves from especially workers in service,

workers in production and farm workers by opting for the Natural Science and Social Science programs in the middle-ranked cities or, most typically, at *Vasaskolan*.

The first dimension also clearly expresses the hierarchies in upper secondary education in the municipality of Gävle, the regional capital. All but one of the study programs at *Vasaskolan* constitute, as a group, the elite pole in the structure, with manifest distances to all other schools and study programs in the region, while study programs at *Polhemsskolan* and *Borgarskolan* occupy middle or low positions in the structure. Both the recruitment profiles and interviews confirm that students originating from families with high volumes of cultural capital, like physicians or subject teachers, by social necessity make their upper secondary studies at *Vasaskolan*.

The interesting distribution of the Arts study programs in the region should also be analyzed as a dimension pertaining to the opposition expressed by the first axis. In contrast to the other studied regions, two Arts programs occupy dominating positions, both hosted at *Vasaskolan*. One is in fact a study program oriented towards circus professions. Being the only one in the country, it has the status of a program with the right to national recruitment, i.e. a study program to which any Swedish student can apply in competition. As an effect, in the regional context, the program has a recruitment profile that grants it an elite position, in social terms, in the structure of upper secondary education. The second of these two Arts study programs, also at *Vasaskolan*, has an orientation towards jazz music, a culturally highly legitimate orientation, probably attracting students originating from families with a strong cultural capital. These two Arts study programs contrast to virtually all other Arts study programs in the region. They do so in terms of recruitment – as is made visible in the graph – but also in terms of content and character. For example, the two lower-positioned Arts programs in Music, at *Hammaraskolan* in the middle-ranked steel-industry city of Sandviken and at *Torsbergsskolan* in the city of Bollnäs, also middle-ranked, both host culturally low-prestigious orientations towards musicals.

The second dimension of the structure proposed by the correspondence analysis is less obvious and should be interpreted with more caution. It opposes, in the top of the graph, small, rural or forest, municipalities - or, rather, study programs located in such areas - to study programs that either do not have these characteristics or pertain to municipalities like Sandviken, where the most important steel industry in the region is found. The sociologically most significant aspect of this opposition is the identification of a clearly rural or forest pole in the structure, typically represented by the Natural Science study program at the *Gymnasieskolan* in Ljusdal. This study program opposes the one at *Bessemerymnasiet* in Sandviken, characterized by a strong recruitment of students with fathers who are engineers. A likely sociological interpretation of the position of the Natural Science study program in Ljusdal is that the demographic composition of small urban centers in rural areas, like Ljusdal, is such that the social groups normally dominating this program – physicians, university and subject teacher, senior civil servants, etc. – are too weakly represented in the local social space to dominate the recruitment. Instead, the presence of other social groups manifests itself. In the case of Ljusdal, especially the farm owners, being, in the local social space, a relatively respected and wealthy group, influence the character of recruitment to what is, still, an elite study program in the particular local context. However, the weak contribution in statistical terms of this second axis relates precisely to the importance given by the correspondence analysis to rather small social groups. Were it not for the farmers and farm workers, the structure would probably look different.

Finally, it should be noted that the structure manifested in the graph makes explicit the necessarily varying social uses of the elite study program *per se*, Natural Science. If, at *Vasaskolan*, located in the only bigger city in the region, the Natural Science study program occupies the position normally attributed to it in other contexts, i.e. as the study program *par*

excellence for social groups with a particularly strong cultural capital, in other local regional contexts, where these groups are more weakly represented, it recruits students from other socially dominating groups – farm owners at the upper secondary school in Ljusdal, engineers at Hammarskolan in Sandviken. This is probably the explanation of the particular distribution of the Natural Science program in the structure visible in the graph.

IV. Conclusion

The correspondence analysis applied to the datasets comprising all study programmes in the four regions in 2000 shows

Our sociological interpretation of the outcomes of the correspondence analysis shows that the impact in the four regions, in 2000, of the education reforms of the early 90's has been determined, firstly, by the socio-demographic composition of each region, and, secondly by the varying politically determined governing models that administrate upper secondary education by regulating admission systems, school expansion and funding mechanisms. The by far most advanced region as regards diversification, is Stockholm. The specific socio-demographic topography of Stockholm and its effects on the political landscape where poorer municipalities governed by the social democracy and richer ones ruled by the political right oppose each other, making it difficult to establish a common strategy for the whole region, probably explains the political acceptance of the market model and the accelerated competition. It looks like the market model of free choice and the establishment of independent schools have become a strategy for social groups with strong economic capital and a weaker cultural capital to oppose the supremacy of the culturally dominant groups in the education system. Their investment – political as well as educational through families' choice of schools – in independent schools has forced the culturally strong groups to follow by increasing their own competitive strategies. This "demand", in turn, has created an expanded market for independent schools and a competition between schools for students in which also schools owned by the municipalities get increasingly involved. As a result, differences between schools have become by far larger in Stockholm than in other areas, as have the creation of elite schools where the scholarly elite sometimes unite with the economic elite, as in the case of *Viktor Rydberg*, or oppose each other, as in the case of intellectual elite schools like *Södra Latin* standing out against the corresponding schools for the economic elite, like *Enskilda Gymnasiet*.