CHARLES UNIVERSITY IN PRAGUE
FACULTY OF EDUCATION
EDUCATION POLICY CENTRE

Inequality and Access to Tertiary Education: European Countries 1950-2005

Working paper

Jan Koucký, Aleš Bartušek and Jan Kovařovic

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This working paper is the outcome of the first stage of the activity "Inequality and Access to Tertiary Education in the Czech Republic and Other European Countries" carried out by the Education Policy Centre of the Faculty of Education, Charles University in Prague. The aim of the first stage has been to find out whether, to what extent and how it is possible to use databases of the first two rounds of the European Social Survey for examining and analysing the development of inequities in access to tertiary education in some European countries (including the Czech Republic), and for elaborating and interpreting indices and models of intergeneration transmission of inequities. The working paper has been prepared also in order to be used in the OECD Thematic Review of Tertiary Education. This is why particularly the European countries participating in it have been included in the annex.

The activity continues by the second stage having more ambitious aims and using new sources – new updated data of the third round of the European Social Survey (ESS-3) available in autumn 2007, together with new outcomes of European surveys of higher education graduate employment - CHEERS (conducted in 1998/1999) and its sequel REFLEX (conducted in 2005/2006), just under scrutiny. Analyses of new updated and structured data will be included in the final report of the activity to be published in mid-2008.

New sources of data will enable us to update and extend our analyses and to attempt their deeper interpretation. We intend also to enlarge the existing annex, describing main characteristics of countries involved, into a series of case studies of the development of inequities in access to tertiary education at least in some European countries, particularly in those having a sufficient size of the sample of respondents in all three ESS rounds and in both projects on graduate employability, REFLEX and CHEERS. This group includes thirteen European countries – Austria, Belgium, the Czech Republic, Estonia, Finland, Germany, the Netherlands, Norway, Portugal, Spain, Sweden (reduced scope only), Switzerland and the United Kingdom.

We would be most grateful for any comments on the working paper, as well as for any suggestions concerning the case studies intended. We would welcome very much offers of co-operation and participation in the second stage of the activity or recommendations of experts to be addressed.

Jan Koucký (jan.koucky@pedf.cuni.cz)

Aleš Bartušek (ales.bartusek@pedf.cuni.cz)

Jan Kovařovic (*jan.kovarovic@pedf.cuni.cz*)

Education Policy Centre
Faculty of Education, Charles University in Prague
Malátova 17, 150 00 Praha 5

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1 Introduction

The role of education in society and equity in access to education

It is now generally accepted that education plays a key role in the development of the economy (and thus in raising living standards), and impacts upon the stability and cohesion of society as a whole as well as on the quality of life of each of its members. Not only is better education associated with higher employability and income, but it contributes to the establishment of broader social contacts, leads to a healthier life-style and increases participation in cultural wealth. Education has become a substantial component of the social status of each individual.

The demands related to economic growth and technological development, as well as tougher competition as a result of globalisation, make it a necessity to use the potential of the entire population, of all social groups and, consequently, to enhance the level of their education and skills to the largest possible degree. At the same time, society is changing and becoming more democratic, and it provides far more opportunities for people to improve their position and life situation. Educational attainment has become a major component of this social upswing – tertiary education in particular is seen as a major factor (and a prerequisite) for becoming successful. Efforts to enhance one's own position or that of one's children naturally result in the growth of educational aspirations in all social groups.

When examining access to tertiary education, the attention is naturally focused not only in its quantitative dimension. It is necessary to answer questions concerning the real distribution of educational opportunities in society, main causes and factors of inequities in providing education and in participating in it, discovering which social groups profit from education more and those which profit less, who wins and who loses. Virtually all developed countries strive for more than merely increasing overall participation, but for increasing and evening up participation of all social strata, regardless of their social, economic, cultural or ethnic status. These efforts are motivated economically, socio-politically and ethically.

Firstly, providing access to education for members of all social classes facilitates the unfolding of capacities and talents of the whole emerging generation and, consequently, the most efficient use of their kowledge and skills to boost economic and social development. Secondly, accessible higher education maintains social coherence as it facilitates the change of position (status mobility) between the generations of parents and children. It therefore prevents various classes and groups from enclosing vis-a-vis others, thereby enlarging social gaps between them, when some are becoming more privileged and others marginalised which, inevitably, stirs social conflicts. And finally, equality of opportunities and chances in life constitutes one of the pillars of understanding social justice in democratic societies, and also a driving force behind the individual efforts of their members.

Ensuring equal access to education which is based on individual capabilities and achievements (the so-called meritocratic approach) and not on ascriptive factors (i.e. primarily the social and economic family background) has therefore become a generally accepted and declared aim. Although equal access to education is formally guaranteed in all advanced countries, the influence of ascriptive factors is still strong. Existing inequalities in economic, cultural and social family backgrounds affect, to a large degree, not only educational outcomes, but also the motivation to learn and educational aspirations (OECD PISA 2004). The meritocratic concept is therefore justly criticised that by stressing capabilities and achievements is, in fact, promoting those who have had better conditions for their development only due to a superb family background. In reality, it is thus concealing the real causes of inequality, as it presents input socially conditioned (and unacceptable) inequalities as legitimate (and acceptable) inequalities of individual aptitudes which then appear to be natural (Bourdieu and Passeron 1977[1], Brennan and Naidoo 2007).

[1] Bourdieu and Passeron (1977) even compare the mechanisms of transmission of higher education from parents to children to those of inheriting a title.

At present the main objectives of all developed countries and trans-national organisations (eg the European Union, OECD and UNESCO) in education include not only quality and efficiency, but also equality of opportunity, or better equity (as a new term), where educational outcomes do not depend on the economic, social and cultural standard of the family (OECD 1997, d´Addio 2007).

Over the last forty years or so, when inequality in education has been subject to systematic and intensive research (starting with work eg of Coleman and Jencks in the USA, Halsey in Great Britain, Boudon, Bourdieu and Passeron in France, Dahrendorf in Germany), the term equity has been elaborated upon and expanded to cover new dimensions. According to the most recent Communication from the EC (Efficiency and Equity 2006), the term covers not only equality of access, but also equality of treatment or means which should reflect the specific educational needs of an individual, and, finally, equality of outcomes or achievement which should not be dependent on socio-economic family background and other factors in education. The International Association of Universities (IAU 2004) defines yet another dimension, equality of application, which can be understood – in line with the introductory discussion on the role of education – as a full use of the potential and capacities of each individual.

Inequality in education has long been a major subject of both sociological theory and empirical research. They try to establish and explain whether, to what extent and how the education system helps overcome barriers in society, or whether, on the contrary, it is an instrument of inter-generational reproduction of social status. Various authors stress specific components and aspects of this comprehensive process and focus on its different facets. Their models (eg socio-psychological model of the stratification process) and theories (eg social or cultural theory of educational reproduction) are complementary rather than mutually exclusive (Brennan and Naidoo 2007). To sum it up, education is a major factor of upward mobility, but educational inequalities are still strong.

One of the most influential concepts derives the effects of inequality in education from three forms of capital which families possess to a varying degree, and which influence the education and life of their children in a major way. These are the economic, social and cultural capital (Bourdieu and Passeron 1977). This distinction makes it possible to analyse various mechanisms for the forming and operation of inequalities, and to seek ways to mitigate their influence.

Economic capital is characterised, above all, by the material and financial standard of a family. A bad economic situation either bars children from studying further, or forces them to drop out of education before completion and enter into employment. A good economic situation allows children to start and complete studies. The implications of economic disadvantage are the most apparent. They were the first to be redressed, at least to a degree (diverse grants, loans and foundations), and most developed countries now operate various financial schemes for students from poorer families.

However, there are other forms of educational inequality that are less apparent, often more severe and much more difficult to redress. These result from lack of social and cultural capital. Social capital is characterised by the network of contacts and acquaintances that can be used to achieve certain objectives (acquisition of prestigious education and, later, a high status), and also by their importance (ie the size of the capital of those who make up the network).

Cultural capital is described as a degree of participation in the dominant status culture from which language and other symbolic codes are derived, on which school education is based (Bernstein 1975) as well as its organisation and objectives. Families that have absorbed this culture and adopted the corresponding lifestyle, ways of behaviour and communication (according to Bernstein a developed language code as distinct from a limited code typical of lower social classes) have a positive relationship to education and provide their children with better starting conditions and constant support. School and teachers are closer to their children in many respects and they also have strong motivation and high educational aspirations. The opposite is the case with families where the environment does not provide many stimuli for child development and does not prepare children sufficiently for school work and procedures. School is an alien environment for them, which is apparent both in the low level of their aspirations and motivation to learn, and in poorer educational achievement.

The overall standard of families and all three sources of educational inequality are closely linked, above all, to the occupation and education of parents, their financial situation and to social and cultural background. These inequalities are translated into differences in educational paths of children and, in this way, they are constantly reproduced. If the level of inequality in education is high, there is extensive self-reproduction particularly of higher education between parents and children, and a reduced permeability of the social structure of society, which is dangerous both in social and economic terms. The higher education system becomes increasingly closed and less responsive to the needs of society as a whole. Society faces the threat of classes and groups retreating within themselves, and of insufficient development and use of the potential of new generations.

The expansion of tertiary education and inequities in access to it

Over the last fifty years participation in tertiary education has grown significantly in developed countries, changing the character and form both of education and educational institutions. Already in the seventies, an American sociologist Martin Trow – building on experience of US higher education – defined three basic transition stages in development of higher education systems as elite, mass and universal (Trow 1974), classifying them according rates of access to, and participation in higher education. The scope and speed of these changes are illustrated by the fact that the definition of the three stages changed considerably over just twenty five years. While in the 1970s the author defined 15% of the relevant cohort as constituting the threshold for a shift from elitist to mass participation, and 30% for transition from mass to universal participation, by the 1990s he increased these thresholds to 25% and 50% respectively (in collaboration with the OECD, OECD 1998 and Trow 2005).

A key characteristics of the transition from the elite to the universal model is the fact that the expansion of higher education has been closely linked to its diversification. Usually new short and mostly vocationally oriented programmes have been introduced, offered in new types of institutions (eg polytechnics in England and Finland, *Fachhochschulen* in Germany and Austria, regional colleges in Norway and Ireland, *Institutes Universitaires de Technologie* in France) sometimes of a lower status (as HE non-university institutions or as tertiary non-HE institutions). In some countries tertiary education systems have explicitly been defined as binary, distinctly differentiating both types of educational institutions. But even when they have formally remained (or gradually become) unitary, they still have undergone inner structural and qualitative differentiation – vertical, by the position and prestige of the institution, as well as horizontal, by the focus and preferred fields of study (Brennan and Naidoo 2007).

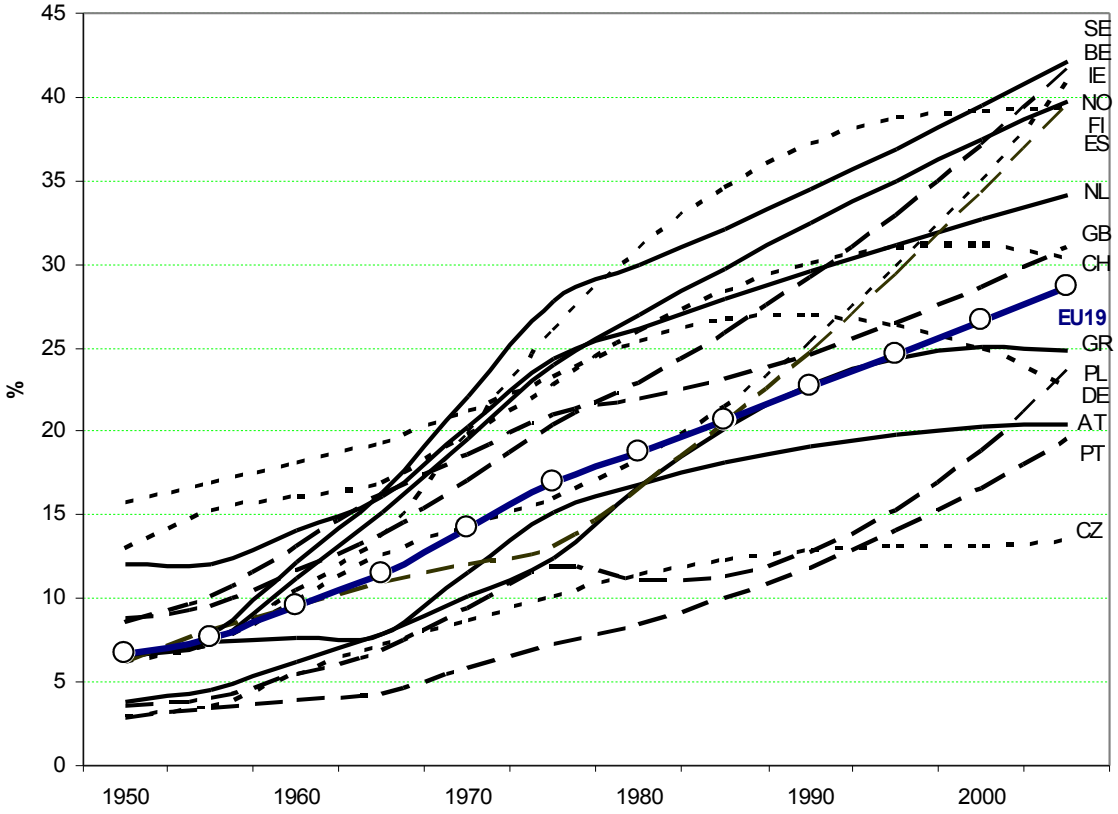
An increase in enrolment has led naturally to an increase in graduates. However, their relation is neither simple nor straightforward, as it is affected by many factors, as the character of transitions between various sectors or institutions of tertiary education, survival rates, cumulating of diplomas of the same level, interrupting and re-entering the studies etc. According to the latest OECD study analysing these processes in international comparison, the average survival rate in the OECD countries is about 60-80 % of those who enrolled some years ago, differing widely across the countries.

This means, of course, that the revised Trow´s typology (which has increased thresholds for mass and universal model to 25 % and 50 % enrolled of the relevant cohort respectively) more or less corresponds to the original typology related to the proportion of graduates (with thresholds of 15 % and 30 % respectively).

The graph below shows the proportion of tertiary education graduates in the population 25-34 years of age in fifteen European countries over more than the last fifty years. Great differences between individual countries are quite evident, as well as the general course of transition between the three stages – the transition from the elite to the mass model occurred in Europe on average in the early seventies (in Belgium, Finland, Germany, the Netherlands and Switzerland even earlier), while today Europe is approaching the next transition, from the mass to the universal model (which has already occurred in Belgium, Finland, Ireland, Norway, Spain and Sweden).

Proportion of HE graduates in a population of 25-34 of age

European OECD countries, 1950-2005



Already since the eighties, research on inequities in access to tertiary education has been focused on the impact of the expansion of tertiary education. According to the MMI theory (*Maximally Maintained Inequality*, Raftery and Hout 1993, Raftery 2007) the influence of family background does not decrease, until all education needs of the most advantaged social group are saturated, that is until almost all of them continue in their studies. Then inequities begin to decrease on a given education level but to increase on the next level (Shavit and Blossfeld 1993). The latest research (Shavit, Arum and Gamoran 2007) has offered a new perspective: when the proportionate expansion of tertiary education exceeded that of secondary education, it resulted in an overall decrease in inequality.

The expansion of tertiary education has changed its role – it is not any more a sufficient but only a necessary condition for good life prospects. The aim is no longer participation in tertiary education as such, but the study of preferred programmes and admission to elite, prestigious institutions. The effects of the mechanism of educational inequality are not cancelled, they are only moved within diversified systems. Despite increased participation in education, inequalities in education are not decreasing in most countries, but continuing and assuming a new nature, which is qualitative and structural instead of quantitative (eg the theory of *Effectively Maintained Inequality*, Lucas 2007, Shavit, Arum and Gamoran 2007). They are difficult to handle and differ a lot across the countries, it is far less apparent what role in which country different quantitative and structural factors have. To find it out adequate comparative analyses are needed, covering various factors and dimensions of the problem.

Comparative analyses, however, are rather limited by the scarcity of relevant recent data (Shavit, Arum and Gamoran 2007, Clancy and Goastellec 2007). The realiable (and widely used) cohort analysis cannot be applied on the "youngest" cohorts of those who have just left the university. Comparative analyses cannot examine current developments then and serve for determining policy initiatives. Moreover, no international survey of tertiary education that would make comparative

research on inequity possible is conducted today, such as surveys of secondary education (OECD programme PISA) are.

This is why recent comparative projects have been conceived, firstly, as deep sociological qualitative studies comparing more countries, focusing on their situation and context, interpreting their development and analysing specific national data sources, without claiming rigorous comparability and immediate relevance of their data (eg Shavit, Arum and Gamoran 2007). Another possible approach is a secondary comparison of data gathered from various sources or of some indirect indices (eg Usher and Cervenan 2005 or Clancy and Goastellec 2007), which, of course, opens other problems.

This working paper has chosen a slightly different approach, using relatively recent data gathered in two rounds of the *European Social Survey* (ESS 1 and 2), conducted in 2002/2003 and 2004/2005 in more than twenty European countries. Although the ESS is not primarily focused on education and educational inequities (but on value orientation and social structure), yet it contains questions which can be well utilised for analysing inequities in approach to tertiary education and their social conditioning (important is the retrospective way of examining family background of the respondent at the age of fourteen years). On the other hand, the use of the ESS database limits the scope of the research only to those characteristics and variables already contained, however essential they are (ie the father´s and mother´s occupation, the father´s and mother´s education, the respondent´s gender). The aim of the working paper – an outcome of the first stage of the activity – has primarily been to test the possibility of using ESS data for a comparative analysis of inequities and to examine various options of approach.

The second stage of the activity – to be terminated in mid-2008 with a final report – will proceed a lot further in more directions using also other important sources. First of all, new data gathered by the third round of the *European Social Survey* (ESS 3) in 2006/2007. The new data will allow not only updating, but also substantially enlarging the analysed sets of respondents in most European countries. This will make possible to extend the analysis in two significant directions. First, to divide all the three sets – having in many European countries at least about five to seven thousands respondents – into more, probably five cohorts, and thus to analyse not only those studying the university after 2000 separately but also those studying in all preceding decades over the last fifty years. Second, in many countries it will be possible to divide the sets (especially in younger cohorts) by the sector of tertiary education – graduates of the HE (university) sector (ISCED 5A and 6) and graduates of the non-HE sector (ISCED 5B) – and to analyse them separately as well.

In most European countries, however, universities (and other institutions of equal standing, ie offering ISCED 5A and 6 programmes) are the decisive sector of tertiary education. Therefore it is necessary to focus also on effects of inner diversification of HE systems under transition from the elite to the mass and the universal models. The ESF data, however, will not help much for analysing effects of expansion and diversification of HE systems on their inner stratification, on various forms of inequities and on the role of various qualitative and structural factors.

The second stage of the activity will use therefore databases of two projects examining employment of HE graduates (ISCED levels 5A and 6) five years after graduation – the project CHEERS (conducted in 1997/1998) and its sequel REFLEX (conducted in 2005/2006 in fourteen European countries). Analyses grounded on them will focus on the influence of family background and other characteristics examined on inequities in access to higher education, such as the influence of educational institutions (their different prestige and image), of the field of study (preference and demand), of the type or orientation of studies (academic or vocational), of the level achieved by students when entering higher education (their final assessment by the secondary school) and their position on the labour market (salary, function, work satisfaction).

Finally, in the second stage of the activity the existing annex should be extended substantially. As it is, it only describes the development of inequities in fifteen European countries examined. The authors intend, however, to elaborate real case studies at least for some countries involved, supplementing thus existing data with an analysis of the overall situation of the country, searching for explanation and interpretation of outcomes. Of course, only countries having a sufficient size of the sample of

respondents in all three ESS rounds and in both projects on graduate employability, REFLEX and CHEERS, could be included. As thirteen countries – Austria, Belgium, the Czech Republic, Estonia, Finland, Germany, the Netherlands, Norway, Portugal, Spain, Sweden (reduced scope only), Switzerland and the United Kingdom – meet this condition, the final report could contain as much as thirteen case studies.

2 The Analytical Process

The analyses is based on the data of the **European Social Survey** (ESS). ESS is a research programme of the European Science Foundation focused on monitoring values, attitudes, beliefs and behaviour patterns in current European societies. Its themes concern general cultural and national values and the social structure.

2.1 Data and variables

At present[2] data from the first two rounds of ESS are available. The ESS-1 was conducted in 2002/2003 with 22 participating countries: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Israel, Italy, Luxembourg, Netherlands, Norway, Poland, Portugal, Slovenia, Spain, Sweden, Switzerland and UK. The ESS-2 was conducted in 2004/2005 with 26 countries participating in it: without Israel, but Estonia, Iceland, Slovakia, Turkey and Ukraine joined the survey. At the present moment, new data from the third round ESS-3 are just being completed, becoming available in autumn 2007. They are comparable – at least as concerns the issues that are part of this analysis of inequalities in access to tertiary education – with the data from the previous rounds. Compared to the ESS-2, Czech Republic[3], Iceland, Italy, Luxembourg and Greece do not participate in the ESS-3. On the other hand, Bulgaria, Cyprus, Latvia, Romania and Russia joined it. A new version of this analytical study with an enlarged set of data covering all three ESS rounds will therefore be completed in spring 2008.

Iceland, Israel, Italy and Turkey were excluded from the analyses due to an overly small sample. Unfortunately, France also had to be excluded, as it has an entirely different classification of parent occupational categories and it is therefore only possible to compare parents' education. The data, after excluding the countries mentioned above, have the following size: the ESS-1 data set covers 37,150 respondents in 19 countries, the ESS-2 data set 43,296 respondents in 22 countries. In view of the ensuing analyses of several cohorts in each country the data for both ESS stages were combined and limited to the population of respondents aged 20-80[4]. This made the data sets for individual countries about double in size and, taking account of the limitation to the aforementioned cohort, the combined data cover 72,694 respondents in 22 countries. It may be expected that when the ESS-3 data are included at the end of 2007, the result will be an extensive set of data including well over 100 thousand respondents.

In view of the size of the ESS data, and the age span of the respondents, it was possible to form several age cohorts covering, approximately, people who studied at a higher education institution in a particular historical period[5]. An analysis of the age distribution of higher education students in the OECD database confirmed, naturally, that the distribution differs from country to country. It also showed, however, that the differences in the average age of students and their age span do not exceed several years. Moreover, further analyses show that, in earlier periods, the students' average age and age span were substantially lower. In spite of this the respondents in both ESS surveys were only divided into three age groups according to the age range of a majority of students. The groups even partially overlap. They represent, approximately, students in tertiary education in three historical periods, having been broadly defined as follows:

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[2] The Czech text of this analytical study was completed in April 2007.

[3] In order to perform the analysis, the Education Policy Centre will collect the Czech data by a special survey at the end of 2007.

[4] More specifically, it is the age the respondents will reach in 2005.

[5] The same approach was followed by Chevalier (Chevalier et al. 2005). It was based on IALS data, it distinguished two age groups – those aged less than 45 and those aged 45 and above – for investigation of educational mobility between parents and their children.

Group	Respondent's age	Historical period of study
1.	55-80	1950-1970
2.	35-60	1970-1990
3.	20-40	1990-2005

Having defined the analysed data according to age cohorts in various European countries and historical periods, it is necessary to define and explain the variables used in the analyses. We must repeat, again, that the procedure had to respect certain limitations given by the nature of the variables in the questionnaire ESS-1 and ESS-2 which were, fortunately, identical in many areas. As has been mentioned, the potential of the ESS data in terms of the use of the variables is limited. However, the objective of the analyses is to develop an interpretable model where the explained variable will be the acquisition of tertiary education, and the explaining variables will be the characteristics of family background and the respondent´s gender.

This means that there is one explained variable in the analyses: **Tertiary** (acquisition of tertiary education) with values: 1 = respondent achieved/studies tertiary education, 0 = did not achieve/does not study tertiary education. It has been formed using data about the highest level of school education attained (**EDLVL**[6]) and data about the level of education which the respondent is currently studying (**STDLVL**[7]). For both types of data it was possible to use a five-degree scale derived from the ISCED[8] international classification of education: ISCED 0-2, ISCED 3C, ISCED 3AB+4, ISCED 5B, ISCED 5A+6, tertiary education being defined by categories ISCED 5B and ISCED 5A+6. The most difficult operation in the process was the matching of the national classifications used in the national versions of the questionnaires with this international standard[9], as it turned out that the variable developed in the ESS data did not have ISCED characteristics in line with the converters for individual countries, and therefore it was not fully applicable.

The following five characteristics were used as explaining variables:

OccF[10] **- Father's occupation** when the respondent was 14 years of age, with the following eight categories: 1 = Traditional professional occupations; 2 = Modern professional occupations; 3 = Clerical and intermediate occupations; 4 = Senior manager or administrators; 5 = Technical and craft occupations; 6 = Semi-routine manual and service occupations; 7 = Routine manual and service occupations; 8 = Middle or junior managers.

OccM[11] **- Mother's occupation** when the respondent was 14 years of age (with the same categorization of occupations as in the previous case).

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[6] The **EDLVL** variable was created by recoding answers to the question F6 (What is the highest level of education you have achieved?) as specific categories of answers were used in different countries.

[7] The **STDLVL** variable is a variable used in the ESS-2 data set, answering to the question G94 (At what level are you studying?).

[8] The **International Standard Classification of Education ISCED** is the main basis for comparing educational institutions and education levels attained. Its last version was prepared and approved by the UNESCO in 1997.

[9] When comparing the ISCED with national classifications, a detailed OECD 1999 manual "Classifying Educational Programs: Manual for ISCED-97 Implementation in OECD Countries" as well as the Eurydice database and the 2005 publication „Focus on the Structure of Higher Education in Europe" were used.

[10] The **OccF (Occupation - Father)** variable is based on answers to the question F50 from the ESS-1 main questionnaire, or to the question F54 from the ESS-2 main questionnaire (Which of the descriptions on this card best describes the sort of work your father did when you were 14 years of age?).

EduF[12] **- Father's highest level of education** with the following categories: 1 = ISCED 0-2 primary and lower secondary education; 2 = ISCED 3-4 upper secondary and post-secondary education; 3 = ISCED 5-6 tertiary education.

EduM[13] **- Mother's highest level of education** (with the same categorization of education levels in the previous case).

Gender[14] **- Respondent's gender** with the following two categories: 1 = male; 2 = female.

The original intention was to include the influence of the respondent's belonging to a national minority in a given country. However, the **BLGETMG**[15] variable contained in both ESS studies turned out to be non-applicable, as it was understood differently in various countries. After due deliberation it had to be excluded from further analyses and from the model.

Before composing the model, the values for all variables representing the respondent's family background had to be given a fixed score so that they could be classified. In the case of the mother's and father's education they were assigned an average length of education according to OECD data. As regards the mother's and father's occupation, the problem was resolved by assigning a calculated average value of the International Socio-Economic Index of Occupational Status (ISEI) to each of the eight occupational groups. The corresponding ISEI value for the eight groups of occupations was calculated based on a standard procedure[16] and by weighing individual occupations by detailed representation of occupations according to the classification ISCO[17] in the ELFS Eurostat[18] database.

Occupational group	OccF/M	**ISEI**
Traditional professional occupations	1	80,1
Modern professional occupations	2	79,6
Clerical and intermediate occupations	3	63,0
Senior manager or administrations	4	78,0
Technical and craft occupations	5	33,9
Semi-routine manual and service occupations	6	26,2
Routine manual and service occupations	7	23,6
Middle or junior managers	8	56,2

Another step was the **calculation of the value of quartiles**[19] for all variables representing the respondent's family background. This eliminated the frequent problem of an incorrect comparison.

[11] The **OccM (Occupation - Mother)** variable is based on answers to the question F56 from the ESS-1 main questionnaire or the question F60 from the ESS-2 main questionnaire (Which of the descriptions on this card best describes the sort of work your mother did when you were 14 years of age?).

[12] The **EduF (Education – Father)** variable is based upon categories used in answers to the question F45 from the ESS-1 main questionnaire or the question F49 from the ESS-2 main questionnaire (What is the highest level of education your father achieved?)

[13] **EduM (Education – Mother)** is based upon categories used in answers to the question F51 from the ESS-1 main questionnaire or the question F55 from the ESS-2 main questionnaire (What is the highest level of education your mother achieved?) .

[14] **Gender** – a variable based on answers to the question F2 (gender) contained in both ESS sets.

[15] **BLGETMG -** a variable based on answers to the question C24 contained in both ESS main questionnaires (Do you belong to a minority ethnic group in [your country]?)

[16] Treiman Ganz

[17] International Standard Classification of Occupation. ILO, Geneva 1988

[18] The ELFS (European Labour Force Survey) database is based on data of periodical national surveys submitted to the Eurostat by member countries.

When analysing inequality, chances of acquiring education are often compared for children of two groups of parents – those with the highest and the lowest qualifications. The level of inequality is expressed, for example, as a ratio of the chances of children of parents with tertiary education to those of children whose parents only have primary education. A problem occurs when this procedure is used to compare various countries, as each country has a different education structure (i.e. a different representation of various education levels), which may distort the results considerably. It is therefore more appropriate to compare two extreme groups which, and this is of key importance, must be of the same size. This allows for a correct comparison not only in terms of the development in a given country over time, but also a comparison between countries. In order to determine the group size we chose quartiles, because a larger group size limits random influences (which could become apparent, for example, if deciles were compared). Based on the quartiles thus defined and calculated, the values of all variables in all countries were divided into four groups of the same size. The reasons for doing so are illustrated by the following example:

When, for example, children's chances of achieving tertiary education based on the father's educational attainment are compared in Germany and Portugal, and when the aforementioned education categories are used (primary, secondary and tertiary), a mistake occurs, since the distribution of these categories of educational attainment differs considerably in these two countries. In the tables below the first column states the education of fathers (1. primary, 2. secondary and 3. tertiary), the second column states the number of respondents for the relevant country whose fathers had this education, the third column shows the percentage of these respondents, and the fourth column contains respondents who achieved tertiary education. The table clearly shows that, if the chances of children of fathers with primary education in Germany and Portugal are compared, the chances of only 14% of German children are compared with the chances of 88% of children in Portugal. Moreover, if the ratio of the chances of children of fathers with tertiary education to those of fathers with primary education is calculated, we are considering 36% (14%+22%) in Germany as compared to 92% (88% + 4%) of children in Portugal. This, again, distorts the results.

Germany				***Portugal***			
EduF	*Respondents*	*%*	*% Tertiary*	*EduF*	*Respondents*	*%*	*% Tertiary*
1	*679*	*14*	*9,6*	*1*	*2667*	*88*	*8,8*
2	*3118*	*64*	*18,1*	*2*	*227*	*8*	*40,1*
3	*1083*	*22*	*40,1*	*3*	*117*	*4*	*67,5*
Total	*4880*	*100*	*21,8*	*Total*	*3011*	*100*	*13,5*

To eliminate the distortion is possible if we work with variable quartiles of the variable as illustrated in the tables below. All values of the variable were divided into four large groups of the same size which can be compared without problems. In this way, of course, we do not compare the chances of children whose fathers have tertiary education with the chances of children of fathers with primary education, but the chances of children of a quarter of the best-educated fathers in a given country with a quarter of the fathers with the lowest qualifications in the given country.

[19] Quartiles are three values of a given variable which divide a series of values of this variable, sequenced upwards or downwards, into four parts of the same size. It means that they establish, in a set of data, quarters with the same representation of the variable sequenced in this way.

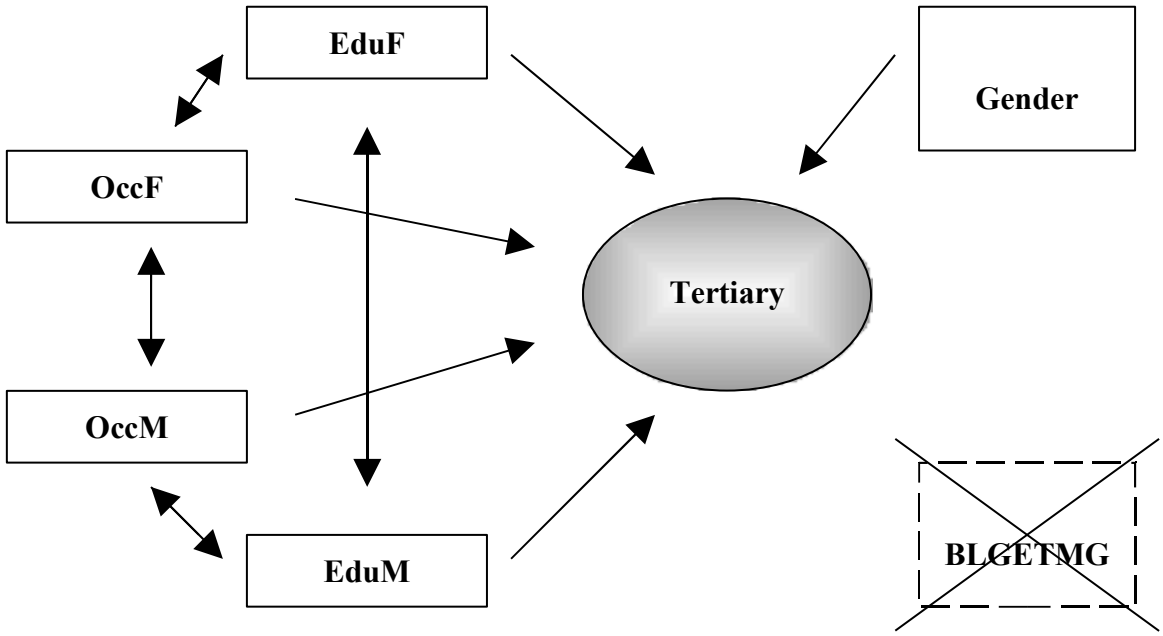
Germany			
EduF	*Respondents*	*%*	*% Tertiary*
Q1	*1220*	*25*	*13,0*
Q2	*1220*	*25*	*18,2*
Q3	*1220*	*25*	*18,2*
Q4	*1220*	*25*	*37,8*
Total	*4880*	*100*	*21,8*

Portugal			
EduF	*Respondents*	*%*	*% Tertiary*
Q1	*752*	*25*	*9,4*
Q2	*753*	*25*	*7,8*
Q3	*753*	*25*	*9,4*
Q4	*753*	*25*	*27,1*
Total	*3011*	*100*	*13,5*

*The last columns in the tables for Germany and Portugal state the percentage of the population with a particular education of the father who achieve tertiary education. If we worked with the original categories of the variable, we could wrongly believe that the ratio of the chances of children with the best-educated fathers to those of children with the least-educated fathers are almost twice as high in Portugal (67,5/8,8 = **7,7**) than in Germany (40,1/9,6 = **4,2**). When working with the quartiles we can see that the inequalities in terms of the father's educational attainment are about the same in both countries (Portugal: 27,1/9,4 = **2,9** ; Germany: 37,8/13,0 = **2,9**).*

2.2 The methods and the model

The model used for the analysis of inequality in access to tertiary education in Europe over the last decades can also be described as follows: It is a logistic, regressive model with one binary explained (target) variable expressing whether or not a respondent achieved tertiary education (**Tertiary**). The explaining variables are the occupation of the father of the respondent at the age of 14 (**OccF**), the mother's occupation when the respondent was 14 years of age (**OccM**), the highest level of education achieved by the father (**EduF**), the highest level of education achieved by the mother (**EduM**) and the respondent's gender (**Gender**). In this form the model was repeatedly used to analyse three designated age cohorts of respondents in all the 22 European countries.



EduF = Father's highest level of education
OccF = Father's occupation when respondent was 14 years of age
OccM = Mother's occupation when respondent was 14 years of age
EduM = Mother's highest level of education
Tertiary = Respondent achieved / didn't achieve tertiary education
Gender = Respondent's gender
BLGETMG = Respondent belongs to national or etnic minority group in the country

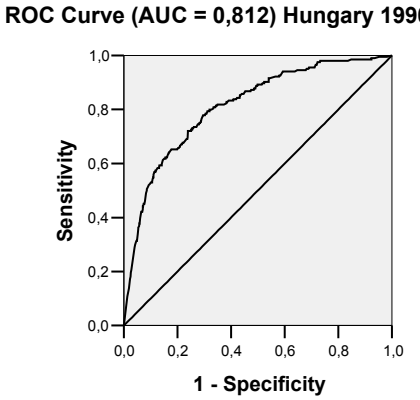
As the target variable (acquisition of tertiary education) is binary (assumes only two values), and the explaining variables are categorised (according to quartiles), the **logistic regression model** was chosen. If we apply the model we get values of parameters expressing a change in the chances of acquiring tertiary education within the given variable, always in relation to a pre-determined reference value. The reference value is always the group with the lowest education, or with the lowest occupational status. When analysing the influence of the respondent's gender, females serve as a reference value.

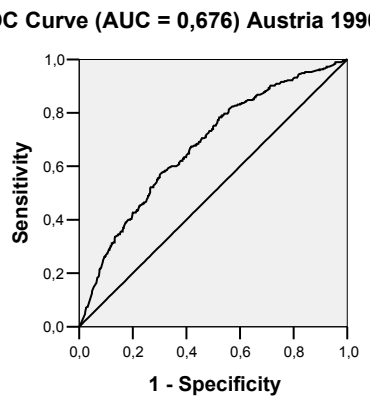
With the logistic model it is very difficult to express its overall quality, as it is not possible to create a direct equivalent of the R^2 determination coefficient used in linear regression. This is why the so-called **ROC curve** - *Receiver Operating Characteristics* was used (see the graphs in the example below). It establishes the dependence of the proportion of correctly predicted cases when the respondent achieved tertiary education (the horizontal line, so-called *1-specificity* complement) on the percentage of incorrectly predicted cases when tertiary education was not achieved (the vertical line, so-called *sensitivity*). The size of **AUC** (*Area Under the Curve*) is considered to provide a comprehensive expression of the quality of the model. The larger the area between the diagonal and the ROC curve, the better the model predicts the behaviour.

Thanks to **AUC** it was possible to assess, in individual countries, the intensity of the influence of ascriptive factors on acquisition of tertiary education and, in this way, actually to see the level of inequalities in access to tertiary education. The higher the level of the **AUC** indicator, the more dependent the acquisition of tertiary education on the variables which characterise the education and occupation of parents and the gender of the responded – i.e. on ascriptive factors – and also the higher the inequality in access to education. The **AUC** indicator assumes values within the <0,5;1> interval and it is further defined as an **index of inequality in access to tertiary education**.

The method is illustrated by the following example:

In Hungary, for example, the influence of ascriptive factors on acquisition of tertiary education has been very strong since 1990. Evidence of this is the AUC value (0.812) which says that the likelihood of a correct identification of whether or not a randomly selected individual up to 40 years of age achieved tertiary education solely on the basis on the knowledge of ascriptive factors (i.e. the education and occupation of parents and the respondent's gender), is 81.2 %. In other words, in Hungary this model makes it possible to identify correctly in 81. 2% of cases whether an individual achieved or did not achieve tertiary education, only based on the knowledge of the aforementioned characteristics of his/her family. On the contrary, Austria shows, after 1990, a far weaker influence of ascriptive factors on acquisition of tertiary education, as the same model facilitates a correct identification only in 67.6 % of cases. It means that, based on the knowledge of a gender of a particular person and the education and occupation of his/her parents, the likelihood of correct identification of whether or not a person up to 40 years of age achieved tertiary education is only 67.6 %, which means that influences other than the family background play a far more important role.





3 Index of Inequality: European Countries 1950-2005

Before analysing the actual scope of inequalities it is necessary to pay attention to the development of overall access to tertiary education in the countries and periods defined in the ESS data. A modification of Trow's typology, which concerns intake proportions, distinguishes between three basic levels of quantitative development of tertiary education systems based on the proportion of graduates in the adult population. These are **elite tertiary education systems**, where the proportion of graduates is lower than 15%, **mass tertiary education systems** with the proportion of graduates ranging from 15% to 30%, and **universal tertiary education systems**, where the proportion of graduate exceeds 30% of the population of a given age.

The table below illustrates the rating of all 22 countries in the three periods according to the level of quantitative development of tertiary education in terms of the proportion of tertiary education graduates in the relevant population. The data from the first two stages of ESS are analysed for three age groups of respondents in each country who, roughly, represent students in three twenty-year periods (1950 - 1970, 1970 - 1990 and the period after 1990). The development in Europe as a whole is also analysed in the same periods. Naturally, the data are not identical with the official data on the proportions of students in the relevant periods that are maintained by international organisations (e.g. the OECD or the EC[20]), but they are very similar.

However, it is necessary to draw attention to two different kinds of problems illustrated by two examples. The high levels indicated in all three periods in **Estonia** are caused by a somewhat different structuring of its education system over the last 50 years, where transition to higher education mostly took place after completion of a ten-year school which covered all ISCED 1-3 levels – i.e. 2-3 years earlier compared to other countries. The high levels in **Sweden** may be caused, to a degree, by a very wide age span of higher education students, so that some students were included in a particular period but they in fact studied at a later age in the following period.

In terms of global trends the table confirms that, over the last 50 years, elite systems in all countries have gradually been transformed into universal systems. Most of the 22 countries under review have such systems from the 1990s. It is also clear that some countries traditionally have lower proportions of tertiary education graduates. These include most of Central and Eastern European countries, as well as countries with a robust history of vocational education and training. However, the data on the overall quantitative access to tertiary education do not reveal anything about the actual openness of tertiary education to various social classes and groups.

[20] The time series of the proportion of higher education graduates in the relevant population are beset with some serious problems. Therefore, the data on the proportion of tertiary education in specific cohorts (mostly from national Labour Force Surveys) are analysed most frequently.

Category *(% of tertiary graduates in population)*	Period					
	1950-1970		1970-1990		1990-2005	
	Country	%	Country	%	Country	%
ELITE *(less than 15%)*	PT	*5,7*				
	ES	*8,4*				
	GR	*8,5*				
	PL	*9,1*				
	CZ	*9,2*				
	AT	*9,9*				
	SK	*10,7*				
	LU	*10,9*				
	SI	*12,1*				
	HU	*13,7*	CZ	*12,2*		
	CH	*14,2*	PL	*12,6*		
	UA	*14,3*	PT	*12,9*		
MASS *(15 to 30%)*	**Europe**	***16,0***	SK	*16,2*		
	GB	*18,4*	AT	*16,6*		
	IE	*18,4*	HU	*17,3*		
	BE	*20,6*	LU	*18,4*	CZ	*20,5*
	DE	*20,7*	SI	*19,3*	SK	*20,5*
	FI	*20,7*	CH	*20,2*	DE	*23,2*
	NL	*21,7*	GR	*20,7*	CH	*23,7*
	DK	*24,5*	ES	*21,0*	HU	*24,2*
	NO	*25,5*	DE	*23,9*	PL	*24,3*
	SE	*26,2*	**Europe**	***24,6***	AT	*25,5*
	EE	*28,9*	UA	*24,8*	LU	*26,3*
			NL	*27,0*	PT	*28,7*
			GB	*28,6*	GR	*29,1*
UNIVERSAL *(over 30%)*			BE	*31,3*	SI	*30,1*
			IE	*31,4*	NL	*32,8*
			DK	*32,1*	GB	*32,9*
			NO	*36,4*	**Europe**	***33,0***
			SE	*36,6*	ES	*33,3*
			FI	*37,0*	DK	*38,7*
			EE	*46,9*	BE	*41,7*
					NO	*42,6*
					UA	*44,8*
					FI	*45,0*
					SE	*47,5*
					IE	*49,2*
					EE	*50,9*

The text above shows how the level of inequality in access to tertiary education can be assessed by the extent to which its acquisition can be explained by means of so-called ascriptive factors which an individual cannot influence and which are determined "from outside", as contrasted to the "inborn" qualities and aptitudes. Ascriptive factors undoubtedly include the education and occupation of parents and the individual's gender – i.e. variables which it was possible to use, due to the availability of on the ESS data, in the aforementioned model. The stronger the influence of these factors, the higher level of inequality in access to tertiary education occurs in the given society in the given period. The level of inequality in education is therefore assessed according to the **index of inequality in access to tertiary education** (hereinafter "**inequality index**") which has been explained earlier.

The overall results of the analysis show that, in the last fifty years, inequality in access to tertiary education in Europe has been gradually reduced, as the overall inequality index dropped from the average 0.769 in the 1950-1960 period to 0.722 in 2000-2005 (see the Figure). However, the figure reveals also that the reduction was not stable throughout the period examined, being most pronounced during the 1950-1980 period and again since 2000, and stagnating in the eighties, whereas inequalities were even slightly growing in the nineties, when their index increased from 0,739 to a temporary peak value of 0,747.

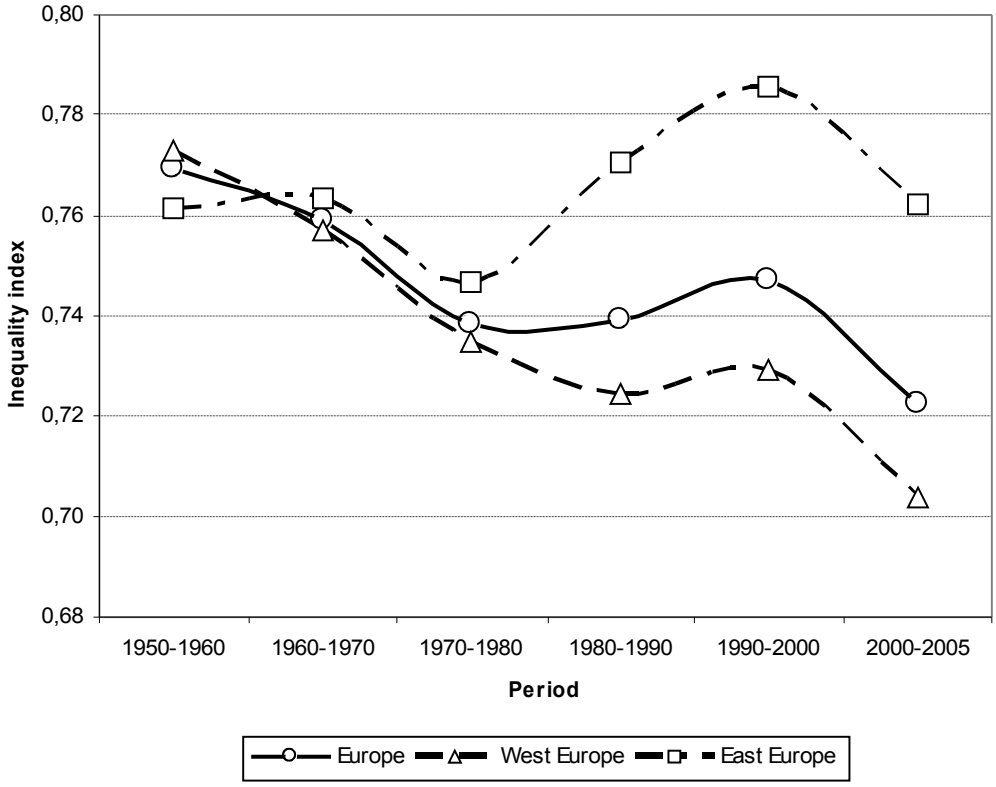
If we break down the countries according to their social development into **West European**[21] and **East European**[22] countries, the outcomes of the analysis differ to a certain extent. The decrease in the inequality index has been clearly brought about by developments in West European countries where the originally high level of inequality index has been systematically lowered (in almost all fifteen countries) to the average of 0.704. Even there, however, inequities were slightly growing throughout the nineties. This can be explained by a comparatively strong influence of neo-liberalism showing itself also in an increase of inequalities in earnings and other analogous developments.

On the contrary, in East European countries where the index was somewhat lower originally (as compared to West European countries), it manifested its gradual increase since the eighties, reaching its peak value of 0,786 in the nineties. Since 2000 the inequality index has been dropping even there, its lowest value so far getting only near the value reached at the beginning of the fifties. Three facts are important in this respect. Firstly, in the nineties – that is in the decade following the collapse of socialism – social status crystallised in East European countries, strengthening again the relationship between education and occupation rather weakened in times of socialism. Secondly, as inequities became far more pronounced generally, it is not surprising that they manifested themselves in tertiary education as well. Thirdly and finally, in the nineties the demand of the entering generation for tertiary education was growing dynamically but higher education systems reacted only with a delay of several years. In supply oriented tertiary education the increased selection favoured those with better family background and higher economic, social and cultural capital (see Shavit, Arum and Gamoran 2007).

Whereas since the beginning of the fifties till the end of the seventies inequities in access to tertiary education did not differ much in West and East European countries and decreased roughly in the same way, a fundamental change occurred in the eighties. While inequities in West European countries continued to drop, they steeply increased in East European countries, even surpassing values reached in the fifties. In the nineties, inequities were growing in both parts of Europe, however much steeper in East European countries. Since 2000 they have been decreasing again in both parts but the differences between West and East European countries originating in the eighties have persisted until today. Only further detailed analyses focused on developments in individual European countries can furnish their explanation and interpretation.

[21] Fifteen countries are grouped as **West European**: Austria, Belgium, Denmark, Finland, Germany, Greece, Ireland, Luxemburg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

[22] Seven countries are grouped as **East European**: The Czech Republic, Estonia, Hungary, Poland, Slovakia, Slovenia, Ukraine.



However, as regards the level of inequality in access to education and the development trends towards its decrease, it is impossible to generalise about all the countries and even about the two groups. It is necessary to focus on individual countries and periods, as they differ considerably (see the following table).

Inequality Index	**Period**		
	1950-1970	**1970-1990**	**1990-2005**
0,812 to 0,766	AT, BE, ES, GR, HU, CH, LU, NL, PL, PT	HU, LU	CZ, HU, PL, UA
0,765 to 0,744	DE, IE, NO, SI, SK, UA, **Europe**	BE, CZ, CH, PT, SI, SK, UA	BE, EE, CH, SK
0,743 to 0,710	CZ, FI	DE, EE, ES, GB, GR, IE, NL, PL, SE, **Europe**	ES, GB, LU, PT, SE, **Europe**
0,709 to 0,674	DK, EE, GB, SE	AT, DK, FI, NO	AT, DE, DK, FI, GR, IE, NL, NO, SI

Hungary, for example, has the highest level of inequality index of all 22 countries in all three historical periods. Moreover, it is one of the few countries where the index level is slightly growing. A major growing trend can also be seen in the Czech Republic, Estonia, Slovakia and Ukraine. In the

case of the Czech Republic, Slovakia and Ukraine it is clear that, while in the 1950-1970 inequality in these countries was only slightly above the European average, in the 1970s and 1980s, and particularly after 1990, the influence of the family background on educational attainment has been growing significantly, and the level of inequality approaches that of Hungary. In Estonia the situation is somewhat different. The level of inequality in the 1950-1970 period was far below the European average. It grew a great deal in the following years, but even the peak levels only reach the level of the Czech Republic and Ukraine in the 1950s and 1960s.

As concerns West European countries, Luxemburg, Spain, Portugal, Belgium and Switzerland did not do well particularly in the 1950-1970 period. However, since then it is only in Sweden and the UK (where the situation was better after all) that a slightly growing level of inequality index can be observed. These two countries show levels of inequality in all three historical periods that hover around the European average. In the first period they are slightly lower, in the following decades they slightly exceed the average.

Conversely, a major and systematic decrease in the influence of ascriptive factors (and the level of the index of inequality in access to tertiary education) occurred particularly in Finland, Ireland, Luxemburg, Germany, the Netherlands and Austria. This means that, in the most recent period after 1990, the level of inequality was the lowest in Austria, Finland, Ireland, Denmark and Germany, which are countries where the inequality index decreased robustly or was low all along.

4 The Development and Distribution of Influencing Factors

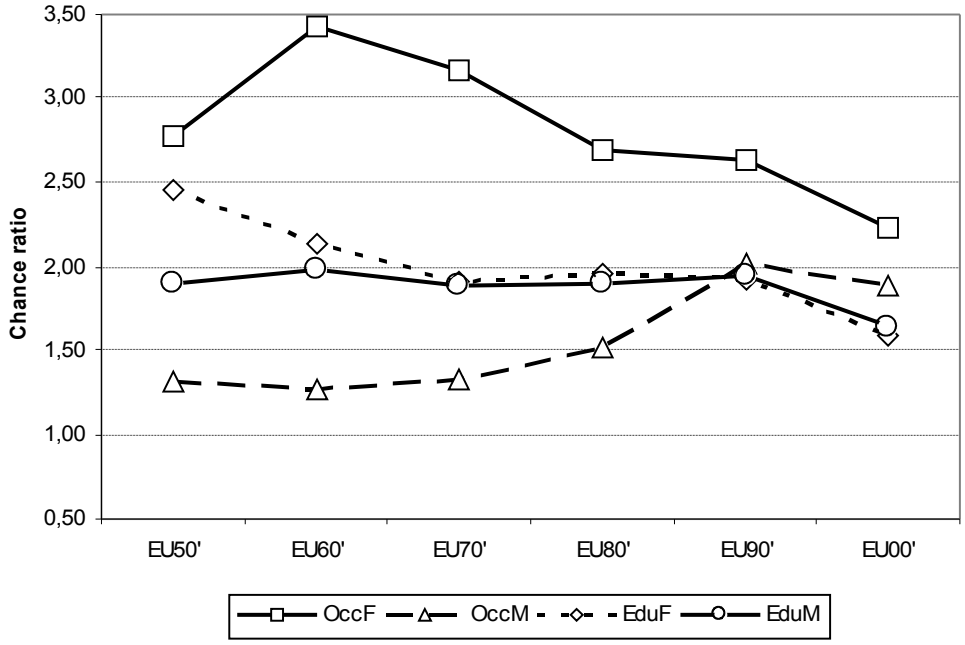
An analysis of the entire population (all age groups of respondents) in all countries based on the characteristics of the family background of the respondents when they were fourteen years old clearly shows that it is the father's occupation and education that constitute the major and, over the long term, the most important influence on acquisition of tertiary education. However, there are distinct differences as to the degree of this influence among the countries.

For example, **the father's occupation** appears to have the strongest influence in Austria where children of fathers with the highest occupational status have a four times higher chance of achieving tertiary education as compared to children whose fathers have the lowest occupational status. A similar situation is in Slovakia, Portugal, Switzerland and Czech Republic where this chance is 3.5 times higher. Conversely, the "most equal" chances of achieving tertiary education exist in Greece, the Netherlands and Ukraine, where the chances of children whose fathers have the highest occupational status are not even twice as high as those of children of fathers with the lowest occupational status.

However, these are the countries (Greece, the Netherlands and Ukraine) with the strongest influence of **the father's education** on acquisition of tertiary education. Children of the best educated fathers in these countries have more than three times higher chances of achieving tertiary qualifications than children of fathers with the lowest level of education. This confirms that the influence of the father's occupation and education is very strong in all countries over the long term. In simple terms we may even say that the countries differ in terms of whether it is the father's education or occupation that influences the educational attainment of his/her son or daughter. In about half of the countries these two influences are nearly equal.

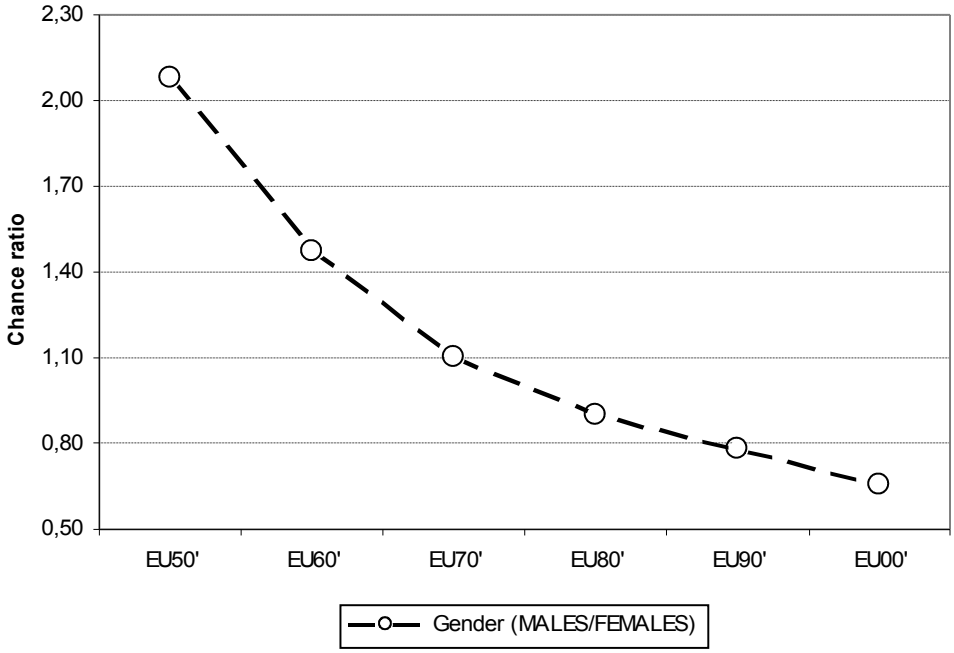
Still, it is not true that the influence of the family background materializes solely through the father. **The mother's education** is not of such weight as the father's education, but in no way can its influence be described as negligible. This is particularly documented by countries such as Sweden, France, Luxemburg, Estonia and Portugal where the influence of the mother's education is even slightly stronger than that of the father's education, and children of the best educated mothers have roughly twice as high a chance of achieving tertiary education.

Overall, **the mother's occupation** appears to be the least influential. In nearly half of the countries it is virtually negligible. It is only in the Czech Republic, Hungary, Portugal and Ukraine that, due to the mother's occupation, children have twice as high and higher chances of achieving tertiary education.



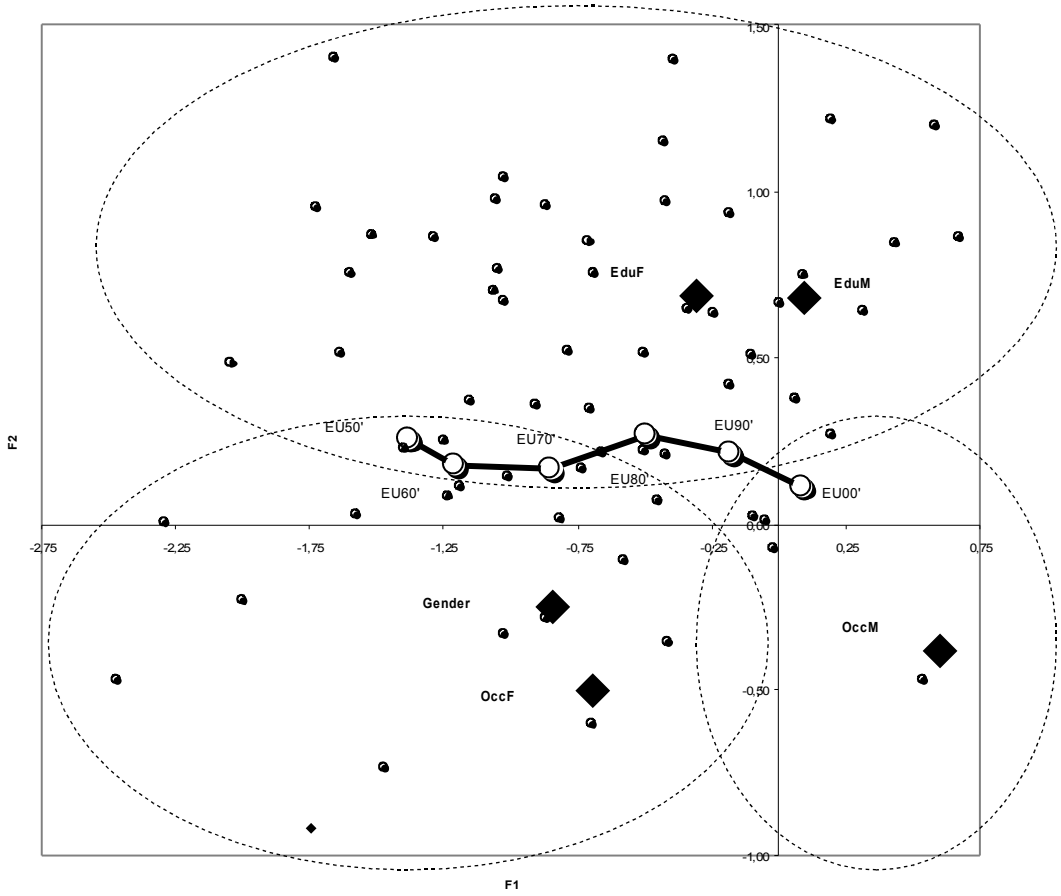
The above graph depicts the development of individual influences in Europe during the period 1950-2005. The influence of the father´s occupation has been the most important one throughout, its effect growing at first and markedly decreasing since the sixties. The influence of the father´s occupation has followed the same pattern, being the strongest but one in the fifties and becoming the weakest in the nineties. On the other hand, the influence of the mother´s occupation has grown most of all, evening up the influence of education of both parents and even surpassing it during the last period examined. If we compare the influence of occupation of both parents, we can observe that they have almost evened up, although they were distinctly different in the fifties and, in particular, in the sixties. As for the influence of their education, the father´s education dominated in the fifties and still in the sixties, but both influences evened up later, with the mother´s education becoming dominant recently. Generally, while all individual influences markedly differed in strenght in the fifties and the sixties, they have gradually evened up being almost on a level.

As regards the influence of **gender** on educational attainment, it is possible to distinguish between three groups of countries. One consists of countries represented by Austria, Belgium, Czech Republic, Slovakia, Ukraine, Portugal and Spain where the influence of gender appears to be insignificant. The other two groups include countries where one gender is "discriminated against" so far as acquisition of more advanced education is concerned. The countries where, over the last fifty years, males had up to twice as high a chance of achieving tertiary education compared to females are Germany, Switzerland, the Netherlands and Greece. On the other hand, in Sweden, Finland, Denmark, Estonia, Hungary, Poland and Slovenia we can observe nearly two times higher chances of achieving this education among women as compared to men. Historically, however, all countries prove that the dominance of men over women as regards acquisition of higher qualifications has been weakening, and the situation has been slowly changing in favour of women. Its development is shown on the graph below.



An analysis of the development and distribution of the influence of various ascriptive factors on acquisition of tertiary education points to three basic models of a possible transmission of educational inequalities: 1. **traditional model** favouring men over women where the father's occupation plays the most important role; **2. "generally educated family model"** based on the influence of the education of both parents; and **3. so-called "modern family model"** where the influences of the education and occupation of both parents are interwoven and where the more favourable position of men as concerns acquisition of higher education is disrupted in a major way.

Typology of family background characteristics:



Each country is characterised, over the given time, by a certain profile of individual influences which, more or less, approximates one of the three models described above. Countries such as Austria, Germany, the United Kingdom and Portugal are the closest to the **traditional model**. Right between the traditional and the **"generally educated family model"** (represented, above all, by the Netherlands, Belgium and France) we can find Spain, Denmark, Ireland and Slovakia. The most striking representatives of the **"modern family model"** are Slovenia, Hungary, Estonia and Norway, and Switzerland, Sweden, Finland and also the Czech Republic, for example, can be found on the borderline between this model and the "generally educated family model".

The profile of individual influences valid for Europe in given time periods was situated at the borderline between the traditional model and the generally educated model at first, nearing more to the former in the fifties and the sixties, and distinctly moving towards the latter in the seventies and eighties. However, the influence of the modern family model was steadily increasing, until it has finally prevailed during the period 1990-2005.

5 Expansion of Tertiary Education and Inequality in Access

Particularly in the initial stages of quantitative expansion of higher education systems it was assumed that widening of access to tertiary education will go hand in hand with decreasing inequality. A high degree of selectiveness in access to higher education was supposed to result in:

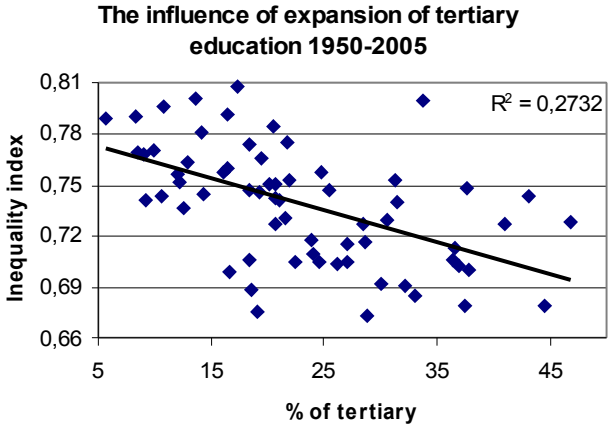
- preventing children from socially disadvantaged backgrounds to be admitted to higher education institutions for a number of economic, social and cultural reasons;
- condemning primarily children from families with a lower social status to failure in a far tougher competition.

It was therefore assumed that an increased proportion of higher education students in the population and elimination, or at least alleviation, of selection in admission will automatically lead to reduced inequality in access for various social groups. Moreover, many countries took major actions in the last decades to ensure the principles of equal educational opportunities, and equal access to education and participation in it. Higher education systems have undergone structural diversification resulting in a gradual formation of tertiary education systems, which together with extensive qualitative and curricular reforms contributed to a significant enlargement of access to this education level.

As early as the 1990s, however, the results of international studies revealed that – despite the improvements mentioned above – the levels of inequality in access had decreased only to a limited degree, and that inequality was acquiring new dimensions. On their way to ensuring equal access to education, higher education policies of developed countries have been more successful in overall robust enlargement of educational opportunities rather than in a real reduction of unequal chances - contingent on economic, social and cultural aspects - in acquiring more advanced education. The reason is that in most countries the overall enlargement of access to tertiary education is more of an across-the-board nature in that it concerns all groups (both advantaged and disadvantaged), and inequalities remain essentially the same. It is only in a situation where participation of the highest social group approaches a saturation level, and further growth slows down considerably as a result, that less privileged social groups get a chance and the overall inequality levels drop.

However, this situation only occurs in later stages of the development of mass or even universal access to tertiary education, when a major transformation of inequality in access takes place. In highly diversified and universal systems access to tertiary education in general – i.e. the quantitative aspect – becomes less important. Instead other aspects – mostly qualitative – gain in importance: the completion of the studies, the type of institution and programme, the outcomes achieved and how favourable is the position one establishes in terms of transition from school to employment. In this situation inequalities move into less obvious contexts and become more subtle and more difficult to identify.

Using the ESS data it is possible to analyse the relationship between the level of quantitative development of higher education and the level of inequality in access to it. For this purpose the data on the proportion of tertiary education graduates in the population were used as well as the inequality index levels for all 22 countries whose respondents were, as part of the second step, divided again according to age into three groups (historical periods): 1950-1970, 1970-1990 and 1990-2005.



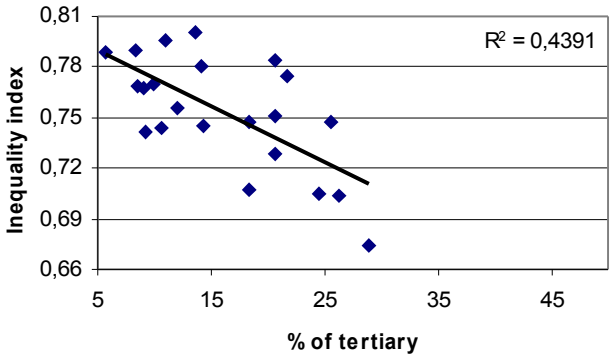
The first graph clearly illustrates that there is a certain, although not very close, link between the proportion of higher education graduates in the population and the index of inequality in access to tertiary education (R^2 = 0,273), as the contribution of quantitative expansion (i.e. increasing the proportion of HE graduates in the population) to

decreased inequality index level is roughly 25%. While in elitist higher education systems the inequality index hovers over 0.75 level, in universal systems it is mostly below 0.72. However, the results of the analyses for the 22 countries must be considered in more detail and separately for each historical period. The following three graphs illustrate the basic results.

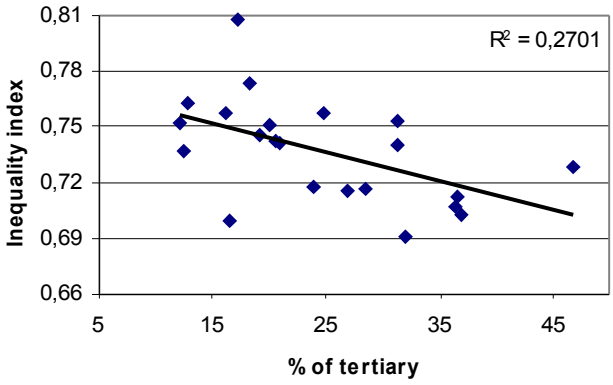
The relationship between quantitative expansion of tertiary education and the inequality index was by far the strongest in the first period – i.e. roughly in 1950-1970, as the degree of quantitative development in individual countries accounted for nearly half of the differences between their inequality index levels (R^2 = 0,439). However, it was already in 1970-1990 that the link weakened considerably to almost one quarter (R^2 = 0,270). The last graph shows that, since 1990, the relationship between the quantitative growth of tertiary education and the level of inequality in access to it has virtually disappeared (R^2 = 0,057).

Using the results of new analyses, the assumptions already made as regards the link between the quantitative expansion of tertiary education and equality in access can be partially confirmed and partially developed further: There was a positive and relatively close link between the two trends particularly in the first decades of the growth of higher education systems after WWII; in the following years, however, the link has been constantly weakening as to become virtually non-existent today.

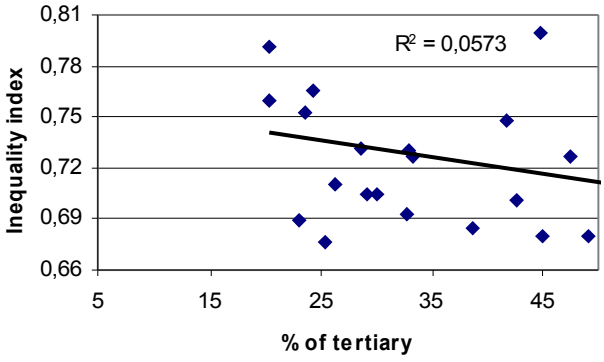
The influence of expansion of tertiary education 1950-1970



The influence of expansion of tertiary education 1970-1990



The influence of expansion of tertiary education 1990-2005



6 Conclusions

Interest in the complex relationship between the growth of tertiary education and the changing level of inequity can be observed since the sixties of the twentieth century. Yet as far as international comparison and evaluation is concerned, only few systematic and more substantial efforts have been made during the last fifty years, as opportunities for analysing comparable data gathered in international databases have been rather limited.

The use of ESS data, however, opens the way to comparative analyses of inequity in access to tertiary education in many European countries. Although ESS data usable for such an analysis have many inherent limitations (as the ESS is not particularly focused on this problem), yet they enable to apply at least some basic characteristics, to elaborate a model for analysing inequity from the point of view of family background, and to define the inequity index. Due to a sufficient size of the sample both in the ESS-1 and the ESS-2, it has been possible to compare not only 22 European countries but also three periods of time (1950-1970, 1970-1990, 1990-2005), and to arrive at three partial conclusions:

The outcomes of the study show, first, that the overall level of inequity in access to tertiary education in Europe has been declining during the last fifty years, parallel to the general development of European societies. However, this statement cannot be generalised, it has been valid neither for all countries nor for all periods of time. The main contribution of the study is that it has clearly revealed how different the development in West European and East European countries has been. In West European countries inequities culminated in the years following the WWII, almost everywhere steadily decreasing since, with the exception of the nineties when they were stagnating or slightly growing. On the contrary, in East European countries inequities were on average lower than in West European countries in the 1950-1970 period, but increased steeply particularly in the eighties and the nineties. Since the eighties they have been markedly surpassing those in West European countries.

Second, the analysis of factors affecting the attainment of tertiary education has indicated three basic models of possible intergeneration transmission of educational inequities: the traditional family model, the educated family model and the modern family model. Although their influence on European countries has varied a lot in the last fifty years, it is possible to identify overall European trends corresponding to general trends in the development of the family and the emancipation of women. The position of Europe regarding the three models has been changing constantly in time. In the fifties and the sixties the traditional family model dominated, still prevailing in the seventies. During that time Europe was already moving towards the educated family model, which became dominant in the eighties. It has kept its position since, gradually loosing it in favour of the modern family model whose rise has become the main trend in the last decade.

Finally, the last part of the study deals with the changing impact of a quantitative expansion of tertiary education on the reduction of inequalities in access to it. The impact can be proved in European countries but it has varied considerably in time. While it has been really quite marked after the WWII, it was steadily decreasing during the transition from the elite to the mass participation in the seventies, remaining still visible though weaker in the eighties. Since the nineties – that is during the period when tertiary education has been moving from the mass to the universal participation – the impact of the quantitative expansion of tertiary education on the inequality index has been steadily declining, in fact even waning. Increasing the overall access of a still larger proportion of the age cohort does not lead to further reduction of inequities between diverse social groups any more.

Also the conclusions of other studies are most significant, stressing that the very meaning of inequities has changed. During the transition towards the universal access – closely linked with the diversification of tertiary education systems - the focus of inequities has shifted from quantitative to qualitative characteristics, far subtler and far more difficult to grasp**,** particularly to different chances of entering a prestigious institution and a preferred field of studies. To analyse this new dimension will be possible only after enlarging the database with results of further surveys (REFLEX and CHEERS) which will supplement the analyses of ESS data (ie ESS 1-3). The outcome of new analyses will be published in the final report which would conclude the activity in 2008.

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Annex: Country Analyses

The previous text analyses, in general, inequality in access to tertiary education in European countries in the last 50 years. It has been reiterated at several points that, despite some general trends and shared features, there are considerable differences between the countries, and that these differences change over time. The quantitative development of tertiary education, the absolute level of the index of inequality in access to tertiary education, and the distribution of the effects of various factors in terms of transmission of inequality from the parents' generation to that of their offspring – all these aspects take a specific form in each country and historical period and must also receive appropriate attention. This annex deals with the characteristics of individual countries and their development.

The countries are listed in an alphabetical order. Europe as a sample of respondents consisting of all 22 countries concerned is at the top of the list. For the sake of coherence and easier understanding the data about Europe and the countries have a uniform structure. Firstly, tertiary education in the given country and the level of its quantitative development are defined[23]. This is followed by data concerning the absolute level and development of the index of inequality in access to tertiary education, and the description of the effects of the various factors related to family background. Finally, the position of the country is identified using the three models of transmission of inequalities in education.

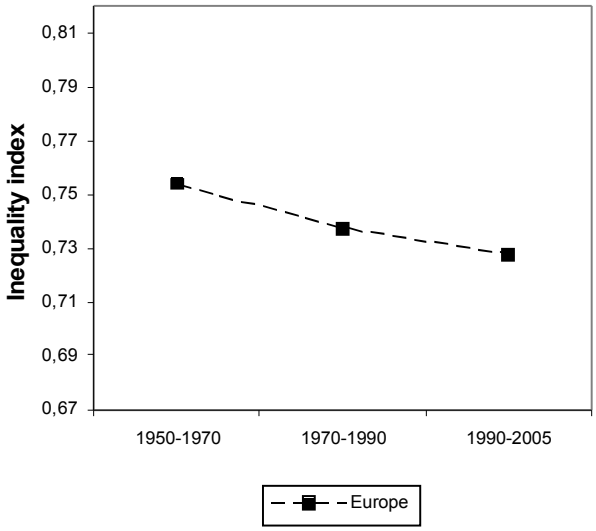
There is a table for each country containing all basic data. For each of the historical periods examined (defined, in approximate terms, by three cohorts of respondents), and for the country as a whole, the first item in the table is the size of the sample of respondents[24] and the proportion of those who achieved tertiary education. The most important indicator in the table is the level of the index of inequality in access to tertiary education for the given sample. Moreover, the table presents the results of logistic regression in the form of odds ratios of achieving tertiary education for various groups of respondents. The first item is the ratio according to gender (men's chances vs. those of women). For other groups of respondents the ratio of the two extreme quartiles is stated (i.e. 25% of respondents with the "best positioned" parent vs. 25% of respondents with the "worst positioned" parent) – the factors being the father's occupation, the mother's occupation, the father's education and the mother's education. Major differences in odds ratios (at a 10% level of importance) are marked in bold, whereas those not significant are marked in italics. Moreover, the family background factor with the strongest effect in each period is coloured.

[23] Tertiary education is defined (according to the international classification ISCED) by categories ISCED 5B and ISCED 5A+6 from EDLVL variable, which express the highest level of school education attained and next by categories "*First stage of tertiary education (not leading directly to an advanced research qualification)*" and "*Second stage of tertiary education (leading directly to an advanced research qualification)*" from STDLVL variable, which express the level of education which the respondent is currently studying (in the ESS-2 data). While the definition of those, who are currently studying is the same for all countries, particular levels of school education attained defining tertiary education are slightly different, particularly because of national classifications.

[24] Since the cohorts defined for the historical periods show a slight overlap, the sum of all three partial samples for each country is larger than the overall sample.

Europe

The definition of tertiary education in the sample of 22 European countries is derived from the ISCED international classification. Tertiary education is defined by the ISCED 5B and ISCED 5A+6 categories. It means that, in addition to universities and colleges, students and graduates of other tertiary institutions are also covered. Understandably, there are various differences in the definition in various countries and periods. Therefore the actual characteristics of the European sample of students in tertiary education in each period are defined simply by putting together all the partial samples for individual countries. The analysed sample includes over 72 thousand respondents, the largest proportion representing the 1970-1990 period. The proportion of those who participated in tertiary education increased from 16% in the first period to 33% in the last period. This corresponds to a gradual transition of European tertiary education from an elitist system to a universal one.



The analysis of the European sample has revealed that Europe has certainly seen a gradual, slight reduction of inequalities in access to tertiary education over the last fifty years. The aggregate level of **inequality index** was the highest (over 0.75) in the 1950-1970 period, and it decreased almost evenly over the following two periods.

Europe	Students			
	1950-1970	1970-1990	1990-2005	1950-2005
	AGE 55-80	AGE 35-60	AGE 20-40	AGE 20-80
Sample size	**26349**	**36379**	**26687**	**72694**
% of tertiary	**16,0**	**24,6**	**33,0**	**24,4**
Inequality index	**0,753**	**0,737**	**0,728**	**0,735**
Logistic regression	Chance ratio	Chance ratio	Chance ratio	Chance ratio
Male/Female	**1,64**	*0,99*	**0,73**	*1,00*
OccF Q1/Q4	**3,39**	**3,08**	**2,55**	**2,93**
OccM Q1/Q4	**1,29**	**1,48**	**1,88**	**1,50**
EduF Q1/Q4	**2,20**	**1,90**	**1,75**	**1,97**
EduM Q1/Q4	**1,96**	**1,90**	**1,79**	**1,90**

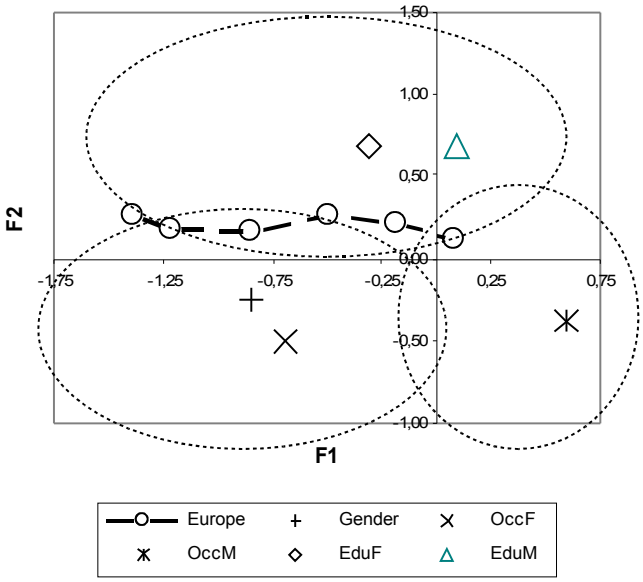
The analysis of the European sample, taking account of various factors related to respondents' family backgrounds when they were 14 years old, shows that it is the **father's occupation** that has had the strongest and, in the long term, the most significant influence on acquisition of tertiary education in Europe. However, the importance of this factor changes over time. In 1950-1970 children whose fathers ranked among the quarter of the fathers with the highest occupational status had more than three times higher chances of achieving tertiary education than the quarter of the children whose fathers had the lowest occupational status. The robust influence of the father's occupation weakened slightly in 1970-1990, but the chances of the "more fortunate" children in this respect were still roughly three times higher. In recent years (i.e. for those studying in 1990-2005) the influence of the father's occupation decreased even further, but it still remains dominant with the odds ratio over 2.5.

Other major family background factors with an impact on acquisition of tertiary education in Europe include the father's education, the mother's education and, also, the mother's occupation. When analysing individual countries, we have found that in most cases their impact is nowhere near that of the father's occupation. Analysing Europe as a whole, however, we have found that they have moved close together and are almost the same.

The influence of the **father's education** in Europe was the strongest in 1950-1970, when children of the best educated fathers had over twice as high a chance of achieving tertiary education compared to children whose fathers had lower education. The impact of this factor decreased slightly in the following two periods, but the odds ratios for achieving tertiary education in Europe are still nearly twice as high in favour of children of fathers with the highest levels of educational attainment.

Similarly, the influence of the mother's education on achieving tertiary education shows a decreasing trend. Again, it was the strongest in the 1950-1970 period, when the chances of children of the best educated mothers were approximately twice as high compared to children disadvantaged in this respect. In the following periods the development of this impact is almost identical to that of the father's education.

Conversely, the only factor whose influence is growing in Europe is the **mother's occupation**. While in 1950-1970 the chances of children whose mothers had the highest occupational status were less than one third higher than those of children disadvantaged in this respect, in 1970-1990 their chances were 50% higher and in 1990-2005 even nearly twice as high. It means that the mother's occupation which, in the past, had the weakest effect, overtook the father's education and the mother's education in the most recent period.



The influence of **gender** on acquisition of tertiary education in Europe was the strongest in 1950-1970, when men had a roughly 60% higher chance of achieving tertiary qualifications. The dominance of men was alleviated in the following periods, the chances evened up and in the last period women took the lead. In the 1990-2005 period the difference in the chances was nearly 27% in favour of women.

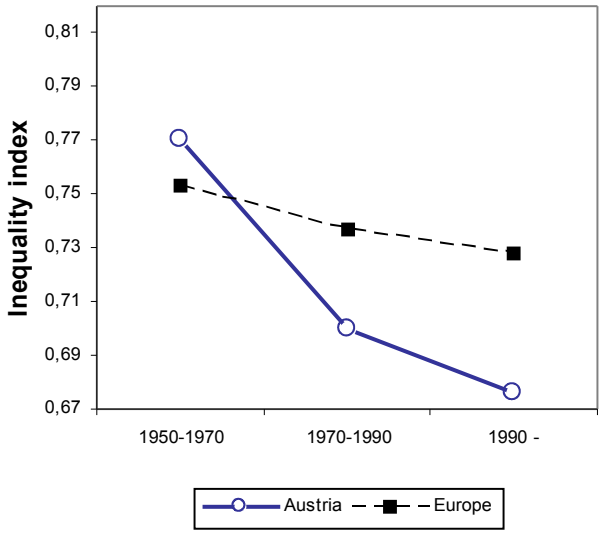
The profile of the factors influencing educational attainment in Europe was firstly between the so-called **traditional model** and **"the educated family model"** whereas particularly in the 1950s and 1960s it was close to the traditional model. In the 1970s and 1980s, there was an apparent shift towards "the educated family model". In the following years there was still more apparent shift towards "a modern family model" and this influence in the 1990-2005 period prevails.

European Countries

Austria

In **Austria** tertiary education can be acquired by majority of students at both state and private universities (currently around 70% of all students in tertiary education). Since the late 1990s ISCED 5A programmes have been also offered by institutions of higher professional education - *Fachhochschulen* (currently less than 20% of students), while *Akademien* and *Kollegs* (currently over 10% of all students in tertiary education) only provide 5B programmes. In the data set for Austria tertiary education is defined by category "*Academic degree (University degree or equivalent)*" in the ESS1 data, and by "*Post secondary, non-tertiary*", „*First stage of tertiary*" and „*Second stage of tertiary*"in the ESS2 data.

The proportion of people with higher qualifications in the Austrian population confirms that Austrian higher education is very elitist. Participation in tertiary education is naturally growing, but the Austrian tertiary sector is among those with the lowest participation levels of all the countries under review.



Analyses show that, since the 1950s, inequalities in access to tertiary education have been gradually decreasing. In the 1950-1970 they were still relatively high, in the period 1970-1990 they were reduced significantly, and from 1990 on Austria ranks among the countries with the lowest level of inequality in access to tertiary education, although the overall participation level is low. The development is documented by the **inequality index** in various periods.

An analysis of the Austrian data for all age groups, where the respondents describe their family background when they were fourteen, shows that it is the **father's occupation** that has had, over the long term, clearly the most important impact in terms of acquisition of tertiary qualifications in Austria.

Austria	Students			
	1950-1970	1970-1990	1990-2005	1950-2005
	AGE 55-80	AGE 35-60	AGE 20-40	AGE 20-80
Sample size	**1272**	**2253**	**1543**	**4092**
% of tertiary	**9,9**	**16,6**	**25,5**	**17,9**
Inequality index	**0,770**	**0,700**	**0,676**	**0,693**
Logstic regression	Chance ratio	Chance ratio	Chance ratio	Chance ratio
Gender Male/Female	**2,05**	*0,94*	*0,86*	*1,07*
OccF Q1/Q4	**7,94**	**4,72**	**2,78**	**4,29**
OccM Q1/Q4	**1,98**	*1,20*	**1,62**	**1,39**
EduF Q1/Q4	*1,59*	**1,57**	**1,51**	**1,46**
EduM Q1/Q4	*1,43*	*1,33*	*1,04*	*1,23*

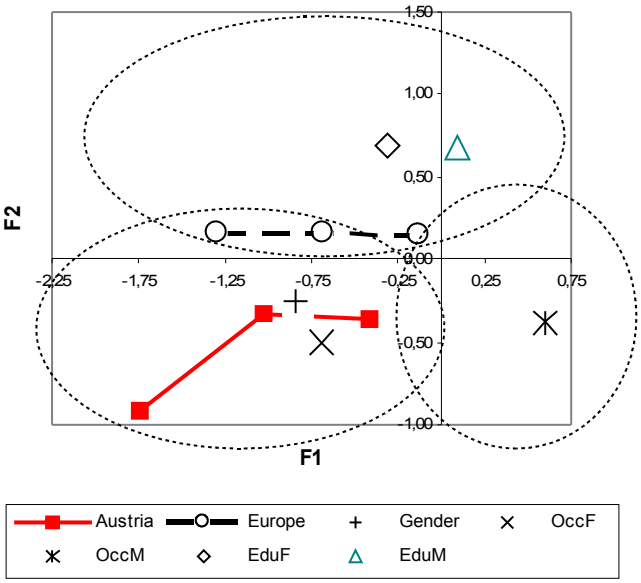
In the 1950-1970 period, children whose fathers held the highest occupational status had **nearly eight times higher** chances of achieving tertiary education as compared to children of fathers with the lowest occupational status. The strong influence of the father's occupation was weakened in 1970-1990, but the chances of the children from better-positioned families in this respect were still **almost five times higher**. At present (for those who have studied since 1990) the father's occupation still has

a dominant influence, as the chances of acquiring tertiary education on the part of children of fathers with the highest occupational status are still nearly **three times** higher.

Other major family background factors influencing the acquisition of tertiary education in Austria include the **father's education** and the **mother's occupation**. However, these are far from being as strong as compared to the father's occupation. On the other hand, the influence of the **mother's education** was not identified as important in any of the three historical periods.

The father's education can only be viewed as insignificant in the 1950-1970 period. It is true of all age groups in the following two historical periods that children of fathers with the highest qualifications have a **50% higher chance** of achieving tertiary education as compared to children of fathers with the lowest qualifications, which further confirms the dominant position of the father's occupation.

The influence of the mother's occupation is approximately the same as that of the father's education. This influence was the strongest in the 1950-1970 period when the chance of achieving tertiary education on the part of children of mothers with the highest occupational status were **about twice as high** compared to the chances of children disadvantaged in this respect. Between 1970 and 1990 the influence of the mother's occupation weakened considerably, and it has, again, been growing in importance since 1990.



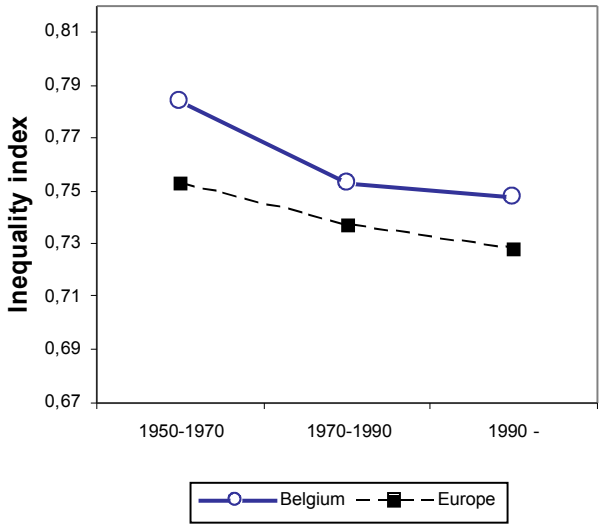
As regards the influence of gender on educational attainment, it was the strongest in the 1950-1970 period. At that time males had **up to twice as high** a chance to achieve tertiary education than females. In the following years the predominance of men have been alleviated, the figures have become balanced and women have gradually been taking the lead as regards acquisition of higher qualifications.

The profile of the factors influencing educational attainment in Austria in the given historical periods is the closest to the so-called **traditional model**, particularly in the 1950-1970. From 1970 to 1990 there was an apparent shift towards "an educated family model" and, also, towards "a modern family model", but the traditional model clearly prevailed in all the three historical periods.

Belgium

In the data set for Belgium tertiary education is defined by categories „*Higher education, short type (HOKT)*“, „*Higher education, long type (HOLT)*“, „*University education”* and „*Doctoral and postdoctoral education*“ in the ESS-1 data, and by the same categories in the ESS-2 data.

The proportion of people with higher qualifications in the Belgian population confirms that Belgian higher education has entered the mass stage. Participation in tertiary education is growing, and in all the three historical periods it has been higher than the European average.



Analyses show that, since the 1950s, inequalities in access to tertiary education have been decreasing but remaining above the European average value. Particularly in the 1950-1970 period Belgium ranked among those countries with the highest level of inequality in access to tertiary education. The development is documented by the **inequality index**.

An analysis of the Belgian data for all age groups, where the respondents describe their family background when they were fourteen, shows that **three factors** have influenced the acquisition of tertiary qualifications in Belgium - the father’s occupation, the father’s education and the mother’s education. On the other hand, the influence of the **mother’s occupation** was important only in the period 1990-2005. But even then it was far from being as strong as the three above factors.

Belgium	Students			
	1950-1970	1970-1990	1990-2005	1950-2005
	AGE 55-80	AGE 35-60	AGE 20-40	AGE 20-80
Sample size	1033	1670	1255	3227
% of tertiary	20,6	31,3	41,7	31,6
Inequality index	0,784	0,753	0,748	0,766
Logistic regression	Chance ratio	Chance ratio	Chance ratio	Chance ratio
Male/Female	**1,56**	*0,91*	**0,69**	*0,89*
OccF Q1/Q4	**3,53**	**2,82**	**2,32**	**3,01**
OccM Q1/Q4	*1,09*	*1,00*	**1,50**	*1,12*
EduF Q1/Q4	**3,87**	**2,90**	**4,62**	**3,60**
EduM Q1/Q4	**2,85**	**2,91**	**2,38**	**2,89**

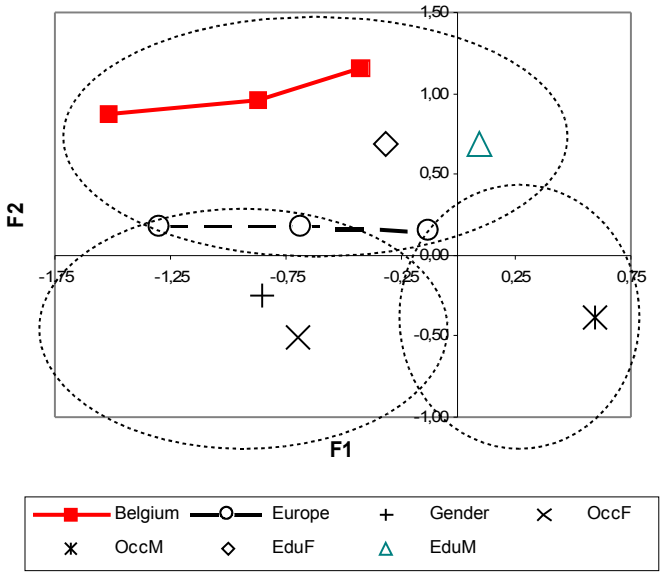
In the 1950-1970 period, the **father’s education** had clearly the most important impact and children of fathers with the highest qualifications had **almost four times higher** chances of achieving tertiary education as compared to children of fathers with the lowest qualifications. The influence of the father’s education was slightly weakened in 1970-1990, but in the period from 1990 to 2005 the chances of the children from better-positioned families in this respect were even **almost five times as high**.

The next long-term family background factor is the **father’s occupation**. Its influence was strongest in the 1950 – 1970 period when the chances of achieving tertiary education on the part of children of fathers with the highest occupational status were **more than three times higher** compared to the

chances of children disadvantaged in this respect. Also in the 1970 – 1990 period and in the period from 1990 to 2005 the influence of the father's occupation remained important and the chances of acquiring tertiary education on the part of children of fathers with the highest occupational status were still **more than twice as high**.

The third major family background factor is the **mother's education**. Its influence was the strongest in the 1950-1970 and in the 1970-1990 as well when children of mothers with the highest qualifications had **almost three times as high** a chance of achieving tertiary education as compared to children of mothers with the lowest qualifications. The influence of mother's education was important also in the 1990 to 2005 period when the chances of the children from better-positioned families in this respect were still **more than twice as high**.

As regards the influence of gender on educational attainment, it was the strongest in the 1950-1970 period. At that time males had **more than 50% higher** a chance to achieve tertiary education than females. In the following years this predominance of men was alleviated and in the 1970-1990 period the influence of gender on educational attainment in Belgium was not identified as important. In the period from 1990 to 2005 women were gradually taking the lead as regards acquisition of higher qualifications, having about **30% higher** a chance to achieve tertiary education than males.

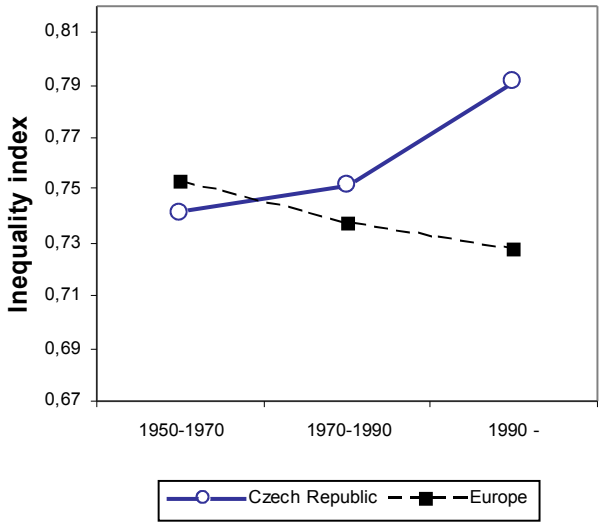


The profile of the factors influencing educational attainment in Belgium is the closest to the so-called **"the educated family model"** whereas in all historical periods strong influence of the father's education was evident. Certain influence of this model was apparent already in the 1950-1970 period and in the following years this influence clearly prevailed.

Czech Republic

In the data set for the Czech Republic tertiary education is defined by categories „*Higher*", „*Tertiary, Bc.", „Tertiary, M.A.*" and „*Post-graduate*" in the ESS1 data, and by the same categories in the ESS2 data.

The proportion of people with higher qualifications in the Czech population confirms that Czech higher education is very elitist. Participation in tertiary education is naturally growing, but the Czech tertiary sector is among those with the lowest participation levels of all the countries under review.



Analyses show that, since the 1950s, inequalities in access to tertiary education have been gradually increasing. In the 1950-1970 they were close to the European average, in the 1970-1990 period they increased slightly and in the 1990-2005 period they were markedly higher than the European average. The development is documented by the **inequality index** in various periods.

An analysis of the Czech data for all age groups, where the respondents describe their family background when they were fourteen, shows that all **four factors** have influenced the acquisition of tertiary qualifications in the Czech Republic - the father's occupation, the mother's occupation, the father's education and the mother's education.

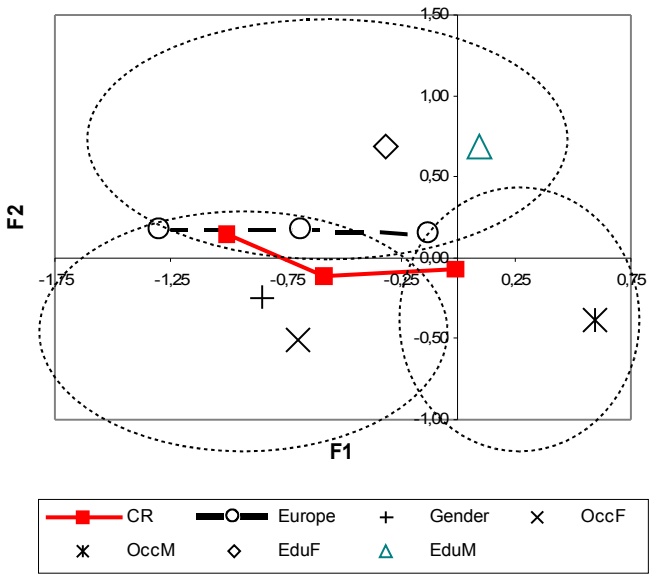
Czech Republic	Students			
	1950-1970	1970-1990	1990-2005	1950-2005
	AGE 55-80	AGE 35-60	AGE 20-40	AGE 20-80
Sample size	**1659**	**1878**	**1239**	**3900**
% of tertiary	**9,2**	**12,2**	**20,5**	**13,8**
Inequality index	**0,741**	**0,752**	**0,791**	**0,765**
Logistic regression	Chance ratio	Chance ratio	Chance ratio	Chance ratio
Male/Female	*1,29*	*1,11*	**0,62**	*0,99*
OccF Q1/Q4	**3,94**	**3,72**	**4,17**	**3,51**
OccM Q1/Q4	**1,77**	**2,92**	**4,07**	**3,11**
EduF Q1/Q4	**2,30**	**2,43**	**2,84**	**2,44**
EduM Q1/Q4	**2,21**	**1,74**	**1,66**	**1,69**

In all the three historical periods, the **father's occupation** had the most important impact and its influence was still approximately the same. Children of fathers with the highest occupational status had even **about four times higher** chances of achieving tertiary education as compared to children of fathers with the lowest occupational status.

The next long-term family background factor is the **mother's occupation**. In the 1950-1970 period, children of mothers with the highest occupational status had **about 80% higher** a chances of achieving tertiary education as compared to children of mothers with the lowest occupational status. In the following years, the influence of the mother's occupation increased strongly. In the 1970-1990, chances of the children from better-positioned families in this respect were **nearly three times higher** and in the 1990-2005 even **more than four times higher**.

The third major family background factor is the **father's education**. Its influence was slightly increasing but similar in all the three historical periods, children of fathers with the highest qualifications having **more than twice as high** a chance of achieving tertiary education as compared to children of fathers with the lowest qualifications.

The fourth major family background factor is the **mother's education**. Its influence was the strongest in the 1950-1970 period when children of mothers with the highest qualifications had **more than twice as high** a chance of achieving tertiary education as compared to children of mothers with the lowest qualifications. In the following years, the influence of mother's education was slightly weakened. In the 1970-1990 and in the 1990-2005 period, chances of the children from better-positioned families in this respect were **about 70% higher**.



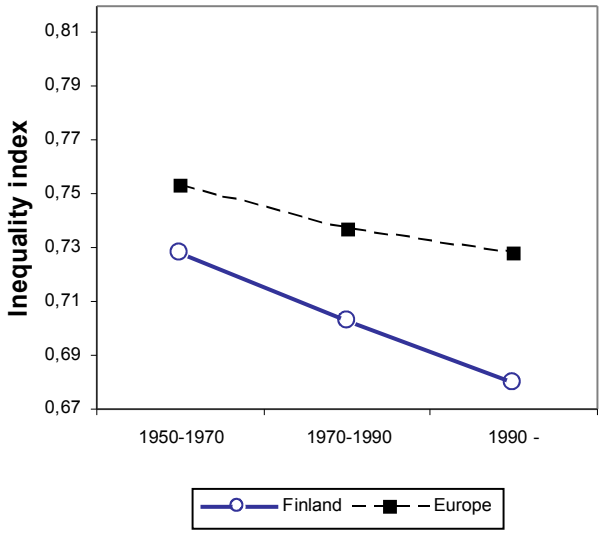
As regards the influence of gender on educational attainment, it was identified as important neither in the 1950-1970 nor in the 1970-1990 period, when males had approximately the same chance to achieve tertiary education as females. In the period from 1990 to 2005 women were gradually taking the lead as regards acquisition of higher qualifications, having **about 30% higher** a chance to achieve tertiary education than males.

The profile of the factors influencing educational attainment in the Czech Republic is between the so-called **traditional model** and **"the educated family model"** (particularly in the 1970 – 1990 period it was close to the traditional model). After 1990 there was an apparent shift towards "a modern family model" which prevailed in the 1990-2005 period.

Finland

In the data set for Finland tertiary education is defined by categories „*First stage of tertiary*“ and „*Second stage of tertiary*” in the ESS1 data, and by the same categories in the ESS2 data.

The proportion of people with higher qualifications in the Finnish population confirms that Finnish higher education has entered the advanced mass stage. Participation in tertiary education is growing, in all the three historical periods it was above the European average. The Finnish tertiary sector is thus among those with the highest participation levels of all the countries under review.



Analyses show that, since the 1950s, inequalities in access to tertiary education have been almost evenly decreasing, while being in all three historical periods below the European average. Particularly in the 1970-1990 and 1990-2005 periods Finland ranked among those countries with the lowest level of inequality in access to tertiary education. The development is documented by the **inequality index**.

An analysis of the Finnish data for all age groups, where the respondents describe their family background when they were fourteen, shows that **three factors** have influenced the acquisition of tertiary qualifications in Finland - the father's occupation, the father's education and the mother's education. On the other hand, the influence of the **mother's occupation** was not identified as important in any of the three historical periods.

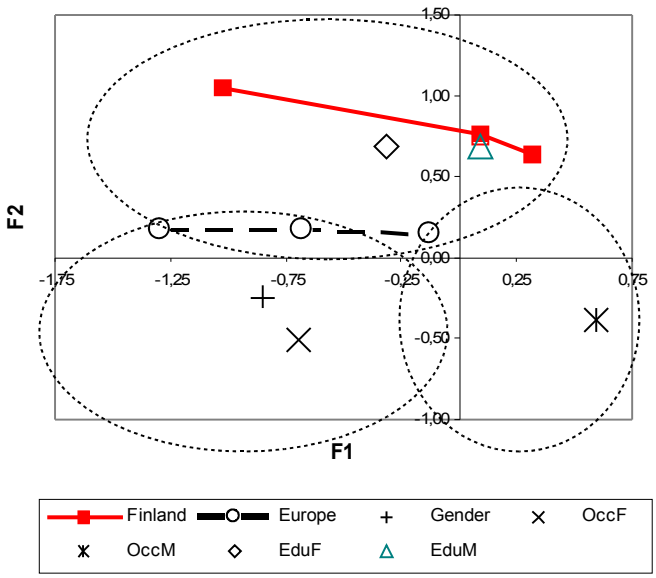
Finland	Students			
	1950-1970	1970-1990	1990-2005	1950-2005
	AGE 55-80	AGE 35-60	AGE 20-40	AGE 20-80
Sample size	**1368**	**1821**	**1282**	**3625**
% of tertiary	**20,7**	**37,0**	**45,0**	**33,6**
Inequality index	**0,728**	**0,703**	**0,680**	**0,698**
Logistic regression	Chance ratio	Chance ratio	Chance ratio	Chance ratio
Male/Female	*0,92*	**0,47**	**0,47**	**0,58**
OccF Q1/Q4	**2,73**	**2,13**	**1,56**	**2,18**
OccM Q1/Q4	*0,97*	*1,23*	*1,14*	*1,12*
EduF Q1/Q4	**4,31**	**2,07**	**1,64**	**2,23**
EduM Q1/Q4	**2,12**	**2,16**	**1,76**	**1,89**

In the 1950-1970 period, the **father's education** had clearly the most important impact, children of fathers with the highest qualifications having **more than four times higher** chances of achieving tertiary education as compared to children of fathers with the lowest qualifications. The influence of the father's education was rather weakened in 1970-1990 (approximately to a half), but even in the period from 1990 to 2005 chances of the children from better-positioned families in this respect were still **more than 60% higher**.

The next long-term family background factor is the **father's occupation**. The influence was strongest in the 1950 – 1970 period when the chance of achieving tertiary education on the part of children of fathers with the highest occupational status were **about three times higher** compared to the chances

of children disadvantaged in this respect. Also in the 1970 – 1990 period the influence of father's occupation remained important and the chances of acquiring tertiary education on the part of children of fathers with the highest occupational status are still **more than twice as high**. The influence of the father's occupation was strongly weakened in 1990-2005 but even in this period chances of the children from better-positioned families in this respect were still **about 50% higher**.

The third major family background factor is the **mother's education**. Its influence was the strongest in the 1950-1970 and in the 1970-1990 as well when children of mothers with the highest qualifications had **more than twice as high** a chance of achieving tertiary education as compared to children of mothers with the lowest qualifications. The influence of the mother's education was important also in the 1990 to 2005 period the chances of the children from better-positioned families in this respect were still **more than 50% higher**.



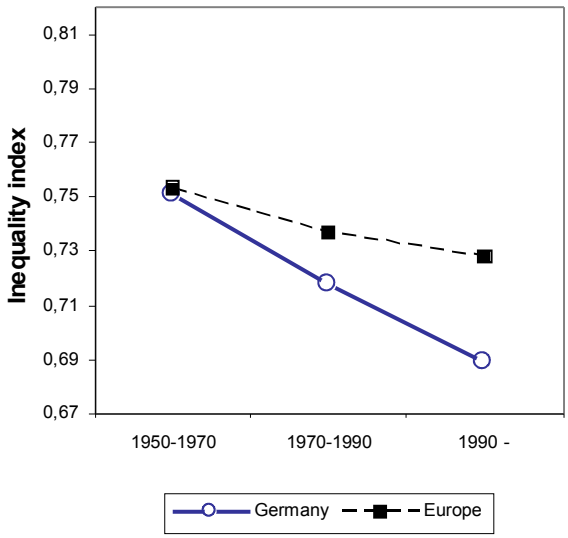
As regards the influence of gender on educational attainment, it was not identified as important in the 1950-1970, males having approximately the same chance to achieve tertiary education as females. But in the following years there was a strong predominance of women who had **more than twice as high** a chance of achieving tertiary education.

The profile of the factors influencing educational attainment in Finland is the closest to the so-called **"the educated family model"** whereas particularly in the 1970–1990 period a strong influence of mother's education was apparent. In the 1990-2005 the influence of mother's education increased by a shift towards "the modern family model".

Germany

In the data set for Germany tertiary education is defined by categories „*First stage of tertiary*“ and „*Second stage of tertiary*” in the ESS1 data, and by “*Technical college /Fachhochschule*” and “*University degree; PhD/Uniabschl.; Doktortitel*” in the ESS2 data.

The proportion of people with higher qualifications in the German population confirms that German higher education has already entered the mass stage. Participation in tertiary education is slightly growing and the German tertiary sector is approximately among those with average participation levels.



Analyses show that, since the 1950s, inequalities in access to tertiary education have been almost evenly decreasing. In the 1950-1970 they were close to the European average, in the 1970-1990 period they were reduced , and from 1990 to 2005 Germany ranked among the countries with the lowest level of inequality in access to tertiary education. The development is documented by the **inequality index**.

An analysis of the German data for all age groups, where the respondents describe their family background when they were fourteen, shows that **three factors** have influenced the acquisition of tertiary qualifications in Germany - the father's occupation, the father's education and the mother's education. On the other hand, the influence of the **mother's occupation** was important only in the period 1990-2005. But even then it was far from being as strong as the three above factors.

Germany	Students			
	1950-1970	1970-1990	1990-2005	1950-2005
	AGE 55-80	AGE 35-60 let	AGE 20-40 let	AGE 20-80 let
Sample size	**1931**	**2744**	**1702**	**5199**
% of tertiary	**20,7**	**23,9**	**23,2**	**22,7**
Inequality index	**0,751**	**0,718**	**0,689**	**0,711**
Logstic regression	Chance ratio	Chance ratio	Chance ratio	Chance ratio
Gender Male/Female	**2,95**	**1,70**	**1,26**	**1,81**
OccF Q1/Q4	**2,39**	**3,03**	**2,34**	**2,61**
OccM Q1/Q4	*1,28*	*1,22*	**1,44**	**1,21**
EduF Q1/Q4	**2,97**	**2,88**	**2,00**	**2,55**
EduM Q1/Q4	**2,30**	**1,48**	**1,59**	**1,47**

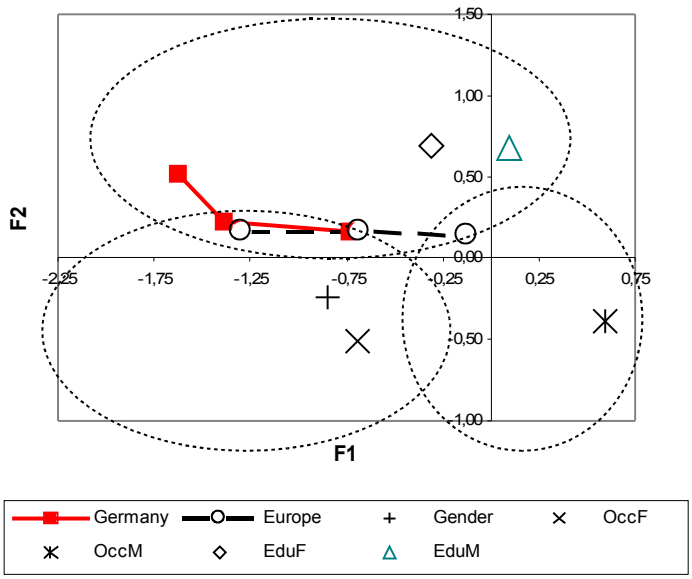
In the 1950-1970 period, the **father's education** has had clearly the most important impact, children of fathers with the highest qualifications having **nearly three times higher** chances of achieving tertiary education as compared to children of fathers with the lowest qualifications. The influence of the father's education was slightly weakened in 1970-1990, but even in the period from 1990 to 2005 odds (chances) of the children from better-positioned families in this respect were still **about twice as high**.

The next long-term family background factor is the **father's occupation**. The influence was strongest in the 1970 – 1990 period when the chance of achieving tertiary education on the part of children of fathers with the highest occupational status were **about three times higher** compared to the chances

of children disadvantaged in this respect. The influence of father's occupation remained important also in the 1950–1970 period and in the period from 1990 to 2005 when the chances of acquiring tertiary education on the part of children of fathers with the highest occupational status were still **more than twice as high**.

The third major family background factor is the **mother's education**. Its influence was the strongest in the 1950 -1970 period when children of mothers with the highest qualifications had **more than twice as high** a chance of achieving tertiary education as compared to children of mothers with the lowest qualifications. The influence of the mother's education was important also in the 1970-1990 period; in the period from 1990 to 2005 the chances of the children from better-positioned families in this respect were still **more than 50% higher**.

As regards the influence of gender on educational attainment, Germany belongs among those countries where it was strong at all times. In the 1950-1970 period males had even **up to three times higher** a chance to achieve tertiary education than females. Also in the 1970–1990 period the predominance (advantage) of males was clear. The figures became almost balanced in the period from 1990 to 2005, males having still **more than 20% higher** chance than females.

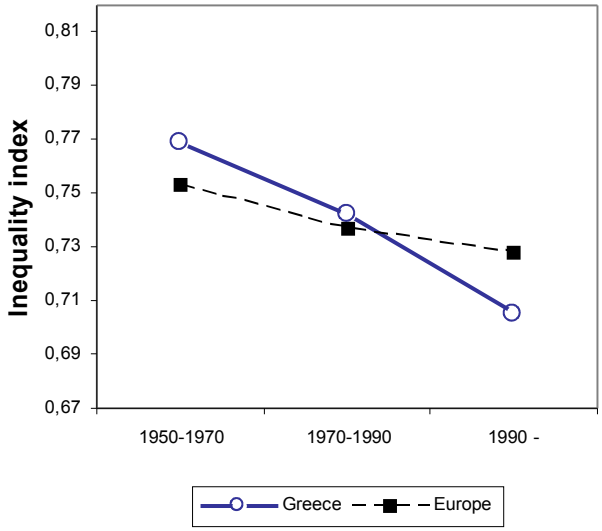


The profile of the factors influencing educational attainment in Germany is between the so-called **traditional model** and **"the educated family model"** whereas particularly in the 1970–1990 period it wa close to the traditional model. After 1990 there was an apparent shift towards "a modern family model" but the traditional model was still prevailing.

Greece

In the data set for Greece tertiary education is defined by categories „*Post secondary*“, „*University degree*“ and „*Post graduate degree*“in the ESS1 data, and by the same categories in the ESS2 data.

The proportion of people with higher qualifications in the Greek population confirms that Greek higher education was very elitist in the 1950-1970, becoming rather mass in the following years. Participation in tertiary education is naturally growing, but the Greek tertiary sector has remained below the European average in any of the three historical periods.



Analyses show that, since the 1950s, inequalities in access to tertiary education have been almost evenly decreasing. In the 1950-1970 they were still relatively high in the period 1970-1990 they were reduced still close to the European average, but in the 1990-2005 they sank well below it. The development is documented by the **inequality index**.

An analysis of the Greek data for all age groups, where the respondents describe their family background when they were fourteen, shows that it is the **father's education** that had, over the long term, clearly the most important impact in terms of acquisition of tertiary qualifications in Greece.

Greece	Students			
	1950-1970	1970-1990	1990-2005	1950-2005
	AGE 55-80	AGE 35-60	AGE 20-40	AGE 20-80
Sample size	**1910**	**1991**	**1640**	**4568**
% of tertiary	**8,5**	**20,7**	**29,1**	**18,2**
Inequality index	**0,769**	**0,742**	**0,705**	**0,747**
Logistic regression	Chance ratio	Chance ratio	Chance ratio	Chance ratio
Male/Female	**3,57**	**1,84**	*0,86*	**1,48**
OccF Q1/Q4	**2,94**	**1,36**	**1,57**	**1,35**
OccM Q1/Q4	*1,13*	*1,09*	**1,48**	*1,24*
EduF Q1/Q4	**3,30**	**3,92**	**2,88**	**3,62**
EduM Q1/Q4	**2,30**	**1,74**	**1,43**	**1,88**

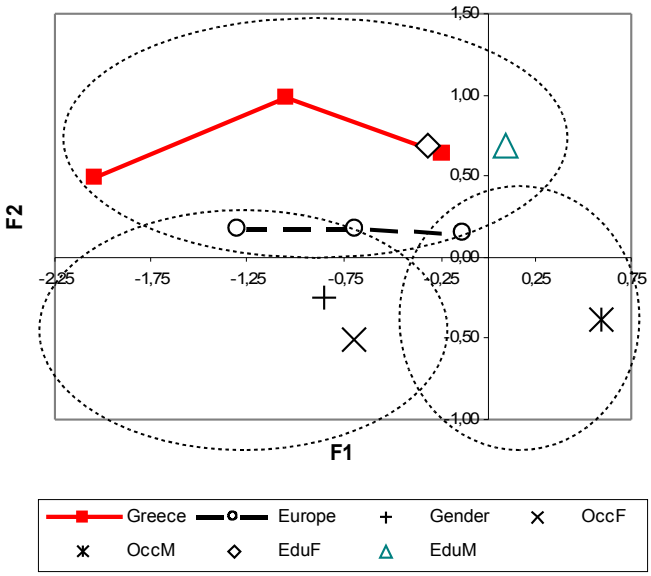
In the 1950-1970 period, children of fathers with the highest qualifications had **more that three times higher** chances of achieving tertiary education as compared to children of fathers with the lowest qualifications. In the 1970-1990 period, chances were even **nearly four times** higher. In the following years (1990-2005) the father's education still has retained a dominant influence, the chances of acquiring tertiary education on the part of children of fathers with the highest qualifications being still nearly **three times higher**.

Other major family background factors influencing the acquisition of tertiary education in Greece include the **mother's education** and the **father's occupation**. However, these were (except the influence of the father's occupation in the 1950-1970) far from being as strong as compared to the father's education. On the other hand, the influence of the **mother's occupation** was important only in the 1990-2005 period.

The influence of the mother's education was the strongest in the 1950 -1970 period when children of mothers with the highest qualifications had **more than twice as high** a chance of achieving tertiary education as compared to children of mothers with the lowest qualifications. This influence was important also in the 1970 – 1990 period, in the period from 1990 to 2005 the chances of the children from better-positioned families in this respect were still **more than 40% higher**.

The influence of the father's occupation is approximately the same as that of the mother's education. This influence was the strongest in the 1950-1970 period when the odds of achieving tertiary education on the part of children of fathers with the highest occupational status were **about three times as high** compared to children disadvantaged in this respect. Between 1970 and 1990 the influence of the father's occupation weakened considerably, and in the period from 1990 do 2005 the chances of the children from better-positioned families in this respect were still **more than 50% higher**.

As regards the influence of gender on educational attainment, it was the strongest in the 1950-1970 period. At that time males had even **up to three times as high** a chance to achieve tertiary education than females (this being the maximum gender difference, achieved at that time together with Switzerland). In the following years this predominance of men was alleviated approximately to a half, but the chances of males in the 1970-1990 period were still **more than 80% higher**. The figures became balanced in the period from 1990 to 2005 when the influence of gender on educational attainment in Greece was not identified as important.

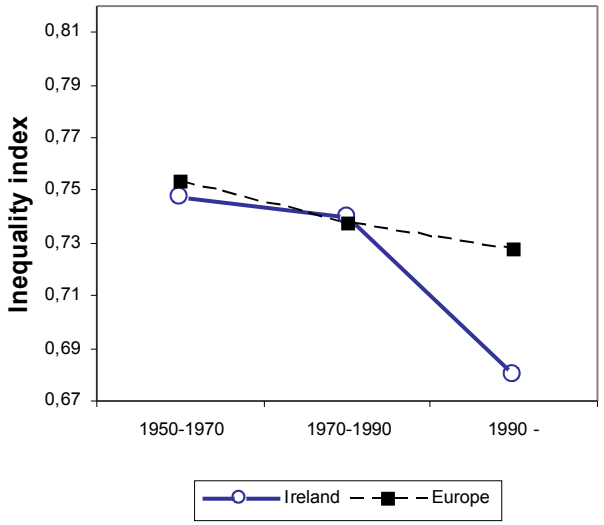


The profile of the factors influencing educational attainment in Greece is the closest to the so-called **the educated family model** whereas in all historical periods strong influence father's education was clear. In the 1950-1970 period, a certain influence of the traditional model was apparent but in the following years Greece was moving towards the educated family model.

Ireland

In the data set for Ireland tertiary education is defined by categories „*Diploma/Certificate*“, „*Primary degree*” a „*Postgraduate/higher degree*“ in the ESS-1 data, and by the same categories in the ESS-2 data.

The proportion of people with higher qualifications in the Irish population confirms that Irish higher education has already reached the advanced mass stage. Participation in tertiary education is growing, in all the three historical periods it was above the European average, and particularly in 1990-2005 it was among those with the highest participation levels of all the countries under review.



Analyses show that, since the 1950s, inequalities in access to tertiary education have been decreasing whereas inequalities in the 1950-1970 period and also in the 1970-1990 period were close to European average value. In the 1990-2005 period, they were reduced significantly and Ireland ranked among those countries with the lowest level of inequality in access to tertiary education. The development is documented by the **inequality index**.

An analysis of the Irish data for all age groups, where the respondents describe their family background when they were fourteen, shows that **three factors** have influenced the acquisition of tertiary qualifications in Ireland - the father's occupation, the father's education and the mother's education. On the other hand, the influence of the **mother's occupation** was not identified as important in any of the three historical periods.

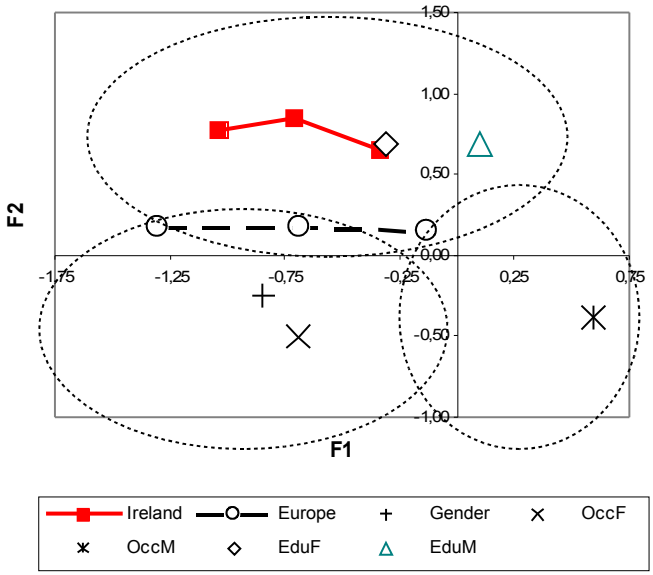
Ireland	Students			
	1950-1970	1970-1990	1990-2005	1950-2005
	AGE 55-80	AGE 35-60	AGE 20-40	AGE 20-80
Sample size	**1487**	**2029**	**1479**	**4019**
% of tertiary	**18,4**	**31,4**	**49,2**	**33,4**
Inequality index	**0,747**	**0,740**	**0,680**	**0,727**
Logistic regression	Chance ratio	Chance ratio	Chance ratio	Chance ratio
Male/Female	**1,38**	*0,93*	**0,69**	**0,89**
OccF Q1/Q4	**2,82**	**2,51**	**2,07**	**2,25**
OccM Q1/Q4	*1,01*	*1,18*	*1,20*	*1,12*
EduF Q1/Q4	**1,83**	**2,83**	**2,65**	**2,60**
EduM Q1/Q4	**4,07**	**2,57**	**1,60**	**2,48**

In the 1950-1970 period, the **mother's education** has had clearly the most important impact and children of mothers with the highest qualifications had even **more than four times higher** chances of achieving tertiary education as compared to children of mothers with the lowest qualifications. The influence of the mother's education was strongly weakened in 1970-1990 (and was approximately half), but even in the period from 1990 to 2005 chances of the children from better-positioned families in this respect were still about **60% higher**.

The next long-term family background factor is the **father's occupation**. The influence was strongest in the 1950 – 1970 period when the chances of achieving tertiary education on the part of children of fathers with the highest occupational status were **almost three times higher** compared to the chances of children disadvantaged in this respect. Also in the 1970 – 1990 period and in the period from 1990 to 2005 the influence of the father's occupation remained important and the chances of acquiring tertiary education on the part of children of fathers with the highest occupational status were still **more than twice as high**.

The influence of the **father's education** is approximately the same as that of the father's occupation. In the 1950-1970 period the chance of achieving tertiary education on the part of children of fathers with the highest qualifications were **about 80% higher** compared to the chances of children disadvantaged in this respect. In the following years the influence of the father's education increased considerably and in the 1970-1990 and also in the 1990-2005 period the chances of the children from better-positioned families in this respect were still **almost three times higher**.

As regards the influence of gender on educational attainment, Ireland belongs among those countries where it was weak at all times. In the 1950-1970 period males had **about 40% higher** a chance to achieve tertiary education than females. In the following years this predominance of men was alleviated and in the 1970-1990 period the influence of gender on educational attainment in Ireland was not identified as important. In the period from 1990 to 2005 women were gradually taking the lead as regards acquisition of higher qualifications and they had about **30% higher** a chance to achieve tertiary education than males.

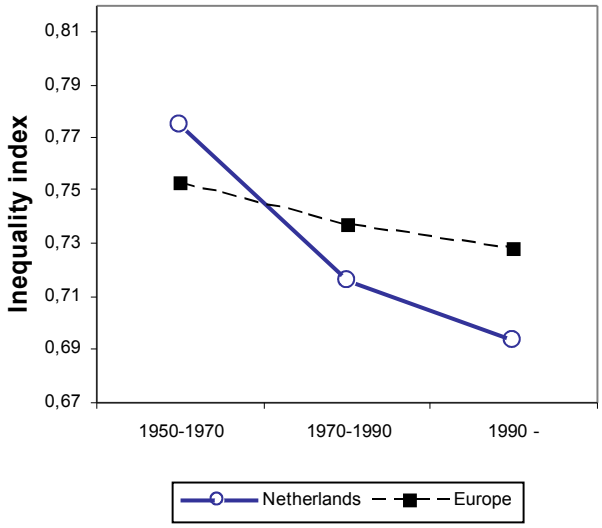


The profile of the factors influencing educational attainment in Ireland is the closest to the so-called **"the educated family model"** whereas in all historical periods strong influence of the father's education was clear. Certain influence of this model was apparent already in the 1950-1970 period and in the following years this influence clearly prevailed.

Netherlands

In the data set for the Netherlands tertiary education is defined by categories „*Tertiary professional education (hbo)*", „*Tertiary scientific education, university*", „*Tertiary post-scientific education (teachers, doctors)*" and „*Second stage of tertiary education, Ph.D. education*"in the ESS1 data, and by the same categories in the ESS2 data.

The proportion of people with higher qualifications in the population confirms that Dutch higher education entered the advanced mass stage as early as in the 1950-1970 period (compared to other countries), and the participation in tertiary education was above the European average. Participation in tertiary education was naturally growing in the following years, but not so fast as the European average, and in the 1900-2005 it was below the European average.



Analyses show that, since the 1950s, inequalities in access to tertiary education have been gradually decreasing. In the 1950-1970 they were still relatively high, in the period 1970-1990 they were reduced significantly, and in the 1990-2005 period, the Netherlands ranked among the countries with the lowest level of inequality in access to tertiary education (although the overall participation level is low).The development is documented by the **inequality index** in various periods.

An analysis of the Netherlandish data for all age groups, where the respondents describe their family background when they were fourteen, shows that it is the **father's education** that has had, over the long term, clearly the most important impact in terms of acquisition of tertiary qualifications in the Netherlands.

Netherlands	Students			
	1950-1970	1970-1990	1990-2005	1950-2005
	AGE 55-80	AGE 35-60	AGE 20-40	AGE 20-80
Sample size	**1509**	**2159**	**1288**	**3942**
% of tertiary	**21,7**	**27,0**	**32,8**	**26,9**
Inequality index	**0,775**	**0,716**	**0,693**	**0,725**
Logistic regression	Chance ratio	Chance ratio	Chance ratio	Chance ratio
Male/Female	**2,81**	**1,46**	*0,98*	**1,51**
OccF Q1/Q4	**1,92**	**2,34**	*1,26*	**1,77**
OccM Q1/Q4	*0,85*	*1,23*	*1,08*	*1,13*
EduF Q1/Q4	**3,46**	**2,76**	**3,48**	**3,00**
EduM Q1/Q4	**2,48**	**2,31**	**2,73**	**2,68**

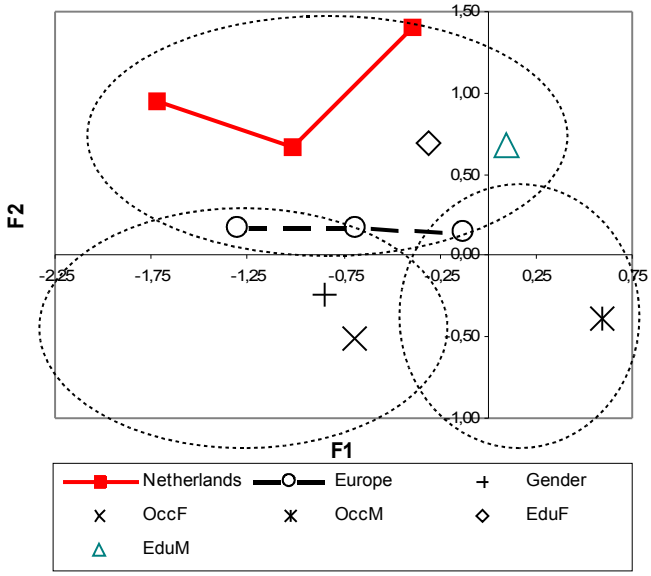
In the 1950-1970 period, children of fathers with the highest qualifications had **more than three times higher** chances of achieving tertiary education as compared to children of fathers with the lowest qualifications and in the 1970-1990 period, chances were still **nearly three times higher**. In the following years (1990-2005) the father's education still has a dominant influence, as the chances of acquiring tertiary education on the part of children of fathers with the highest qualifications were approximately at the same level.

Other major family background factors influencing the acquisition of tertiary education in Netherlands include the **mother's education** and the **father's occupation**. However, these are (except the influence of the mother's education in the 1990-2005) far from being as strong as compared to the father's education. On the other hand, the influence of the **mother's occupation** was not identified as important in any of the three historical periods.

The influence of the mother's education was significant in the 1950 -1970 period when children of mothers with the highest qualifications had **more than twice as high** a chance of achieving tertiary education as compared to children of mothers with the lowest qualifications. This influence was approximately at the same level in the 1970 – 1990 period and in the period from 1990 to 2005 the chances of the children from better-positioned families in this respect were still **nearly three times higher**.

In the 1950-1970 period and also in the 1970-1990 period the influence of the father's occupation is approximately the same as that of the mother's education. This influence was the strongest in the 1970-1990 period when the chance of achieving tertiary education on the part of children of fathers with the highest occupational status were **more than twice as high** compared to the chances of children disadvantaged in this respect. In the 1990-2005 period the influence of father's occupation on educational attainment in Netherlands was not identified as important.

As regards the influence of gender on educational attainment, the Netherlands belongs among those countries where it was very strong in the 1950-1970 period. At that time males had **nearly three times as high** a chance to achieve tertiary education than females. In the following years this predominance of men was alleviated, but the chances of males in the 1970-1990 period were still **almost 50% higher**. The figures became balanced in the period from 1990 to 2005 when the influence of gender on educational attainment in the Netherlands was not identified as important and in this period males had approximately the same chance to achieve tertiary education as females.

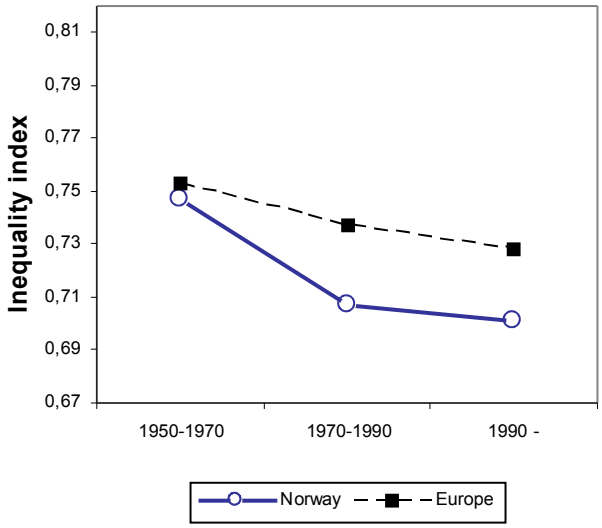


The profile of the factors influencing educational attainment in the Netherlands is the closest to the so-called **"the educated family model"** whereas in all historical periods strong influence of the father's education was evident. Certain influence of this model was apparent already in the 1950-1970 period and in the following years this influence clearly prevailed.

Norway

In the data set for Norway tertiary education is defined by categories „*First stage tertiary, undergraduate level (14th-17th level)*“, „*First stage tertiary, undergraduate (18th-19th level)*“ and „*Second stage tertiary (postgraduate)(20th level+)*“ in the ESS1 data, and by „*Tertiary education, short (higher education 4 years or short)*“, „*Tertiary education, long (higher education more than 4 years)*“ and „*Doctoral Degree*” in the ESS2 data.

The proportion of people with higher qualifications in the Norwegian population confirms that Norwegian higher education has already reached the advanced mass stage. Participation in tertiary education is growing, in all the three historical periods it was well above the European average, and the Norwegian tertiary sector belongs thus among those with the highest participation levels of all the countries under review.



Analyses show that, since the 1950s, inequalities in access to tertiary education have been gradually decreasing. In the 1950-1970 they were close to European average, in the 1970-1990 period they were reduced considerably and particularly in the 1970-1990 Norway ranked among the countries with the lowest level of inequality in access to tertiary education. The development is documented by the **inequality index**.

An analysis of the Norwegian data for all age groups, where the respondents describe their family background when they were fourteen, shows that all **four factors** have influenced the acquisition of tertiary qualifications in Norway - the father’s occupation, the mother’s occupation, the father’s education and the mother’s education.

Norway	Students			
	1950-1970	1970-1990	1990-2005	1950-2005
	AGE 55-80	AGE 35-60	AGE 20-40	AGE 20-80
Sample size	1114	1961	1393	3538
% of tertiary	25,5	36,4	42,6	35,6
Inequality index	0,747	0,707	0,701	0,701
Logistic regression	Chance ratio	Chance ratio	Chance ratio	Chance ratio
Male/Female	1,69	0,93	0,57	0,86
OccF Q1/Q4	3,41	2,50	1,92	2,57
OccM Q1/Q4	1,29	1,65	1,40	1,52
EduF Q1/Q4	1,55	2,38	2,42	2,20
EduM Q1/Q4	2,61	1,46	1,73	1,39

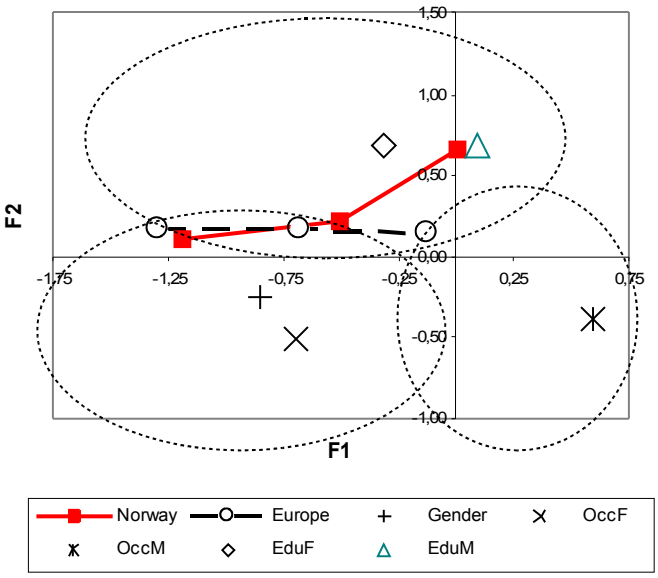
In the 1950-1970 period, the **father’s occupation** has had clearly the most important impact and children of fathers with the highest occupational status had even **more than three times higher** chances of achieving tertiary education as compared to children of fathers with the lowest occupational status. The influence of the father’s occupation was slightly weakened in 1970-1990 but still had the most important impact of all other factors. Also in the period from 1990 to 2005, this

influence remained important and chances of the children from better-positioned families in this respect were still **about twice as high**.

In the 1990-2005 period, it was the **father's education** who has had the strongest impact and children of fathers with the highest qualifications had **more than twice as high** a chances of achieving tertiary education as compared to children of fathers with the lowest qualifications. The influence of the father's education was approximately half in 1950-1970 and in the period from 1970 to 1990, chances of the children from better-positioned families in this respect were **about twice as high** as well.

The next long-term family background factor is the **mother's education**. Its influence was the strongest in the 1950-1970 period when children of mothers with the highest qualifications had **more than twice as high** a chance of achieving tertiary education as compared to children of mothers with the lowest qualifications. This influence was weakened in the following years but the chance of children of mothers with the highest qualifications were still **between 50 and 70% higher**.

The fourth major family background factor is the **mother's occupation**. Its influence was not identified as important in the 1950-1970, but in the 1970-1990 period and also in the 1990-2005 period, children of mothers with the highest occupational status had **about 50% higher** a chance of achieving tertiary education as compared to children of mothers with the lowest occupational status.



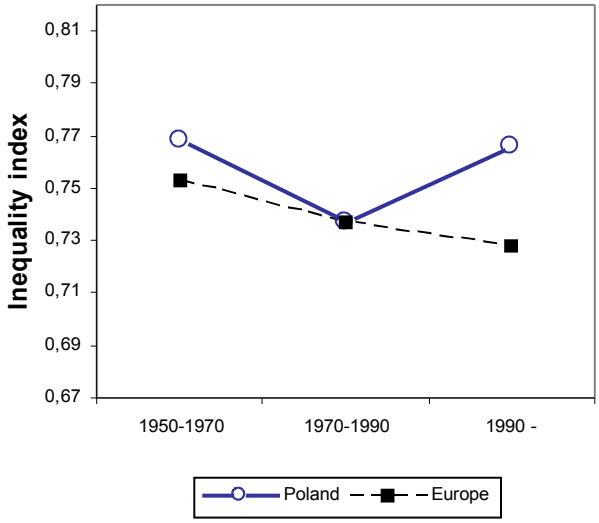
As regards the influence of gender on educational attainment, it was the strongest in the 1950-1970 period. At that time males had **about 70% higher** a chance to achieve tertiary education than females. In the following years this predominance of men was alleviated and in the 1970-1990 period the influence of gender on educational attainment in Norway was not identified as important. In the period from 1990 to 2005 women were gradually taking the lead as regards acquisition of higher qualifications and they had about **40% higher** a chance to achieve tertiary education than males.

The profile of the factors influencing educational attainment in Norway was in the 1950-1970 and also in the 1970-1990 between the so-called **traditional model** and **"the educated family model"**. In the following years, there was an apparent shift towards "the educated family model". In the following years there was ever-growing shift towards "the educated family model" and this influence in the 1990-2005 period clearly prevailed.

Poland

In the data set for Poland tertiary education is defined by categories „*First stage of tertiary*" and „*Tertiary completed*" in the ESS1 data, and by the same categories in the ESS2 data.

The proportion of people with higher qualifications in the Polish population confirms that Polish higher education is very elitist. Participation in tertiary education is naturally growing, but the Polish tertiary sector is still among those with the lowest participation level of all the countries under review.



Analyses show that, since the 1950s, inequalities in access to tertiary education have been firstly slightly decreasing and then they have increased again. In the 1950-1970 and also in the 1970-1990, inequalities were close to the European average value and in the 1990-2005 period they were higher. The development is documented by the **inequality index** in various periods.

An analysis of the Polish data for all age groups, where the respondents describe their family background when they were fourteen, shows that all **four factors** have influenced the acquisition of tertiary qualifications in Poland - the father's occupation, the mother's occupation, the father's education and the mother's education.

Poland	Students			
	1950-1970	1970-1990	1990-2005	1950-2005
	AGE 55-80	AGE 35-60	AGE 20-40	AGE 20-80
Sample size	**978**	**1648**	**1443**	**3396**
% of tertiary	**9,1**	**12,6**	**24,3**	**15,7**
Inequality index	**0,768**	**0,737**	**0,766**	**0,754**
Logistic regression	Chance ratio	Chance ratio	Chance ratio	Chance ratio
Male/Female	**1,70**	*0,84*	**0,62**	**0,82**
OccF Q1/Q4	**2,97**	**1,94**	**2,67**	**2,52**
OccM Q1/Q4	*0,77*	**2,03**	**2,78**	**1,86**
EduF Q1/Q4	**4,02**	**2,42**	**1,97**	**2,92**
EduM Q1/Q4	**4,47**	**1,97**	**2,30**	**1,78**

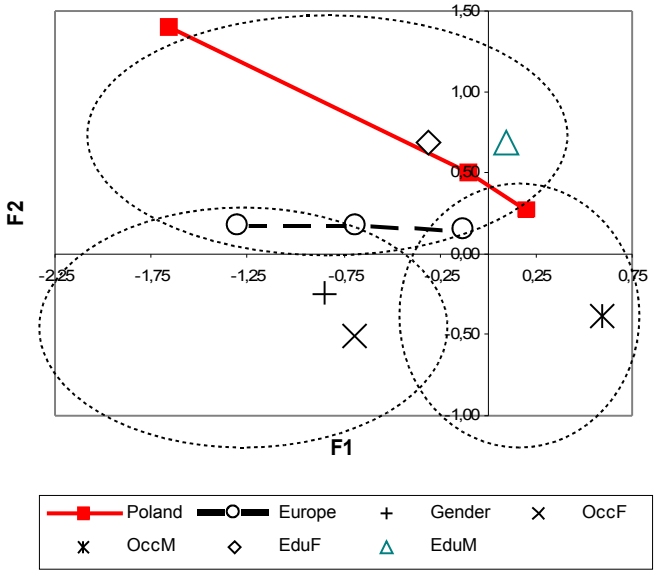
In the 1950-1970 period, the **mother's education** has had clearly the most important impact and children of mothers with the highest qualifications had even **more than four times higher** chances of achieving tertiary education as compared to children of mothers with the lowest qualifications. The influence of the mother's education was strongly weakened in 1970-1990 (and was approximately half). Also in the period from 1990 to 2005 this influence remained important and chances of the children from better-positioned families in this respect were still **more than twice as high**.

In the 1970-1990 period, it was the **father's education** who has had the strongest impact and children of fathers with the highest qualifications had **more than twice as high** a chances of achieving tertiary education as compared to children of fathers with the lowest qualifications. The influence of the father's education was approximately twice as high in 1950-1970 and in the period from 1990 to 2005, chances of the children from better-positioned families in this respect were still **almost twice as high**.

The next long-term family background factor is the **father's occupation**. The influence was strongest in the 1950–1970 period and also in the 1990-2005 period when the chance of achieving tertiary education on the part of children of fathers with the highest occupational status were **about three times higher** compared to the chances of children disadvantaged in this respect. The influence of the father's occupation was important also in the 1970-1990 and the chances of acquiring tertiary education on the part of children of fathers with the highest occupational status were still **about twice as high**.

The fourth major family background factor is the **mother's occupation**. Its influence was not identified as important in the 1950-1970, but in the 1970-1990, children of mothers with the highest occupational status had **about twice as high** a chance of achieving tertiary education as compared to children of mothers with the lowest occupational status and in the 1990-2005 period, the chances was even **nearly three times as high**.

As regards the influence of gender on educational attainment, it was the strongest in the 1950-1970 period. At that time males had **about 70% higher** a chance to achieve tertiary education than females. In the following years this predominance of men was alleviated and in the 1970-1990 period the influence of gender on educational attainment in Poland was not identified as important. In the period from 1990 to 2005 women were gradually taking the lead as regards acquisition of higher qualifications and they had about **30% higher** a chance to achieve tertiary education than males

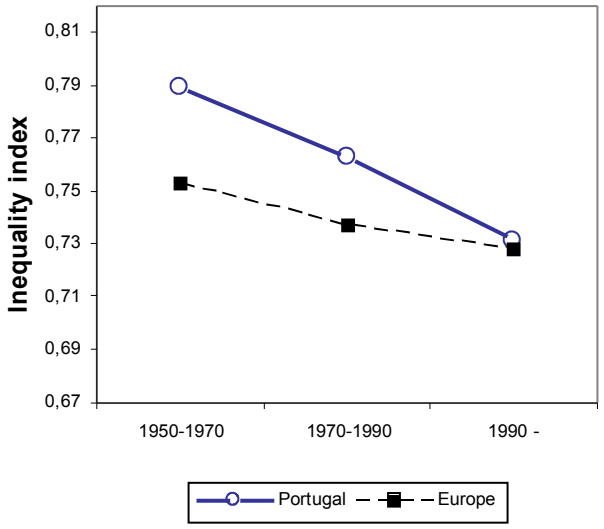


The profile of the factors influencing educational attainment in Poland is the closest to the so-called **"the educated family model"** whereas particularly in the 1950–1970 period strong influence of the father's education was evident. In the following years, there was an apparent shift towards "the modern family model" and this influence in the 1990-2005 prevailed.

Portugal

In the data set for Portugal tertiary education is defined by categories „*Superior Politecnico*", „*Superior Universitario" a „Mestrado/Doutoramento*" in the ESS1 data, and by the same categories in the ESS2 data.

The proportion of people with higher qualifications in the Portuguese population confirms that Portuguese higher education was very elitist particularly in the 1950-1970 and also in the 1970-1990 period. Participation in tertiary education is naturally growing, but the Portuguese tertiary sector remained below the European average in any of the three historical periods.



Analyses show that, since the 1950s, inequalities in access to tertiary education have been almost evenly decreasing. In the 1950-1970 they were still relatively high and in spite of their decreasing, they were still above-average. Only in the 1990-2005 period they were close to the European average. The development is documented by the **inequality index**.

An analysis of the Portuguese data for all age groups, where the respondents describe their family background when they were fourteen, shows that all **four factors** have influenced the acquisition of tertiary qualifications in Portugal - the father's occupation, the mother's occupation, the father's education and the mother's education.

Portugal	Students			
	1950-1970	1970-1990	1990-2005	1950-2005
	AGE 55-80	AGE 35-60	AGE 20-40	AGE 20-80
Sample size	1324	1407	1190	3247
% of tertiary	5,7	12,9	28,7	15,6
Inequality index	0,789	0,763	0,731	0,759
Logistic regression	Chance ratio	Chance ratio	Chance ratio	Chance ratio
Male/Female	1,66	0,64	*0,78*	*0,95*
OccF Q1/Q4	3,97	3,79	3,14	3,87
OccM Q1/Q4	3,78	2,43	1,68	1,97
EduF Q1/Q4	*1,66*	1,48	1,99	2,08
EduM Q1/Q4	1,73	2,55	1,93	2,28

In all the three historical periods, the **father's occupation** has had the most important impact and its influence was still approximately the same. Children of fathers with the highest occupational status had even **about four times higher** a chance of achieving tertiary education as compared to children of fathers with the lowest occupational status. This influence was weakened gradually but the difference of chances was still more than three times higher.

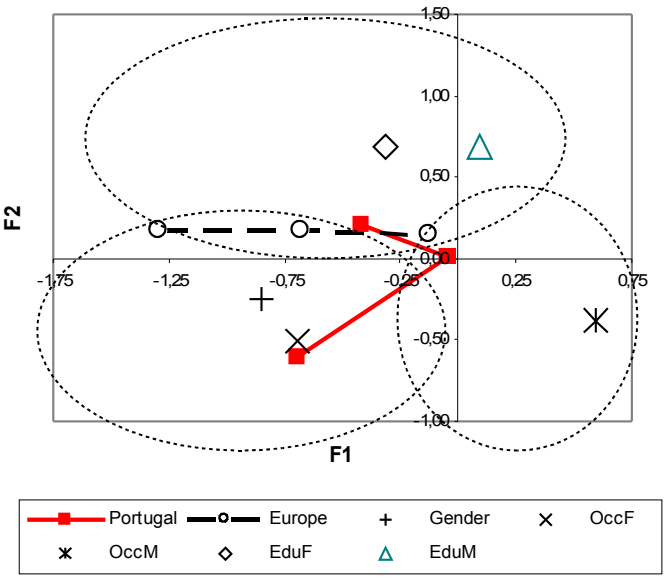
The next long-term family background factor is the **mother's occupation**. In the 1950-1970 period, children of mothers with the highest occupational status had **nearly four times higher** a chance of achieving tertiary education as compared to children of mothers with the lowest occupational status. In the following years, the influence of the mother's occupation was weakened. In the 1970-1990,

chances of the children from better-positioned families in this respect were still **more than twice as high** but in the 1990-2005 the difference between chances was even only **about 70%**.

The third major family background factor is the **father's education**. Its influence was not identified as significant in the 1950-1970 period but in the 1970-1990 children of fathers with the highest qualifications had **about 50% higher** a chance of achieving tertiary education as compared to children of fathers with the lowest qualifications and in the 1990-2005 the chance was even **twice as high**.

The fourth major family background factor is the **mother's education**. Its influence was the strongest in the 1970-1990 period when children of mothers with the highest qualifications had **more than twice as high** a chance of achieving tertiary education as compared to children of mothers with the lowest qualifications. The influence of the mother's education was significant also in the 1950-1970 and in the 1990-2005 period and chances of the children from better-positioned families in this respect were still **nearly twice as high**.

As regards the influence of gender on educational attainment, it was the strongest in the 1950-1970 period. At that time males had **nearly 70% higher** a chance to achieve tertiary education than females. In the 1970-1990 period women were gradually taking the lead as regards acquisition of higher qualifications and they had about **30% higher** a chance to achieve tertiary education than males. In the 1990-2005 the influence of gender on educational attainment in Portugal was not identified as important.

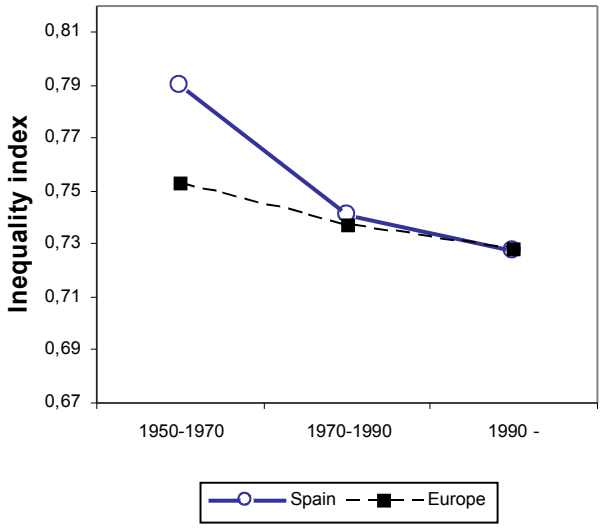


The profile of the factors influencing educational attainment in Portugal in the given historical periods was the closest to the so-called **traditional model**, particularly in the 1950-1970 period. In the following years (1970-1990) there was an apparent shift towards "a modern family model" and in the 1990-2005 period Portugal was right between the traditional model and "the educated family model."

Spain

In the data set for Spain tertiary education is defined by categories "*2 or 3 years higher education (not leading to a university degree)*", " *Polytechnical studies, short cycle*", " *Other short cycle university degree (3 years)*", " *Polytechnical studies, long cycle*", " *Other long cycle university degree (5 years or more)*", „*Postgraduate degree*" a „*Doctoral degrese*" in the ESS1 data, and by "*Post-secondary, non tertiary*", "*University degree, 3 years technical*", "*University degree, 3 years*", "*University degree, 5 years technical*", "*University degree, 5 years*", "*Postgraduate studies*" a "*Ph.D.*" in the ESS2 data.

The proportion of people with higher qualifications in the Spanish population confirms that Spanish higher education was very elitist in the 1950-1970, moving to the mass stage in the following years. Participation in tertiary education is naturally growing and whereas in the 1950-1970 period Spain it was among those countries with the closest tertiary sector, in the following years it was close to the European average value.



Analyses show that, since the 1950s, inequalities in access to tertiary education have been gradually decreasing. In the 1950-1970 they were relatively high, in the 1970-1990 period they were reduced significantly and from this time Spain ranked among the countries with the average level of inequality in access to tertiary education. The development is documented by the **inequality index**.

An analysis of the Spanish data for all age groups, where the respondents describe their family background when they were fourteen, shows that **three factors** have influenced the acquisition of tertiary qualifications in Germany - the father's occupation, the father's education and the mother's occupation. On the other hand, the influence of the **mother's education** was important only in the 1990-2005 period. But even then it was far from being as strong as the three above factors.

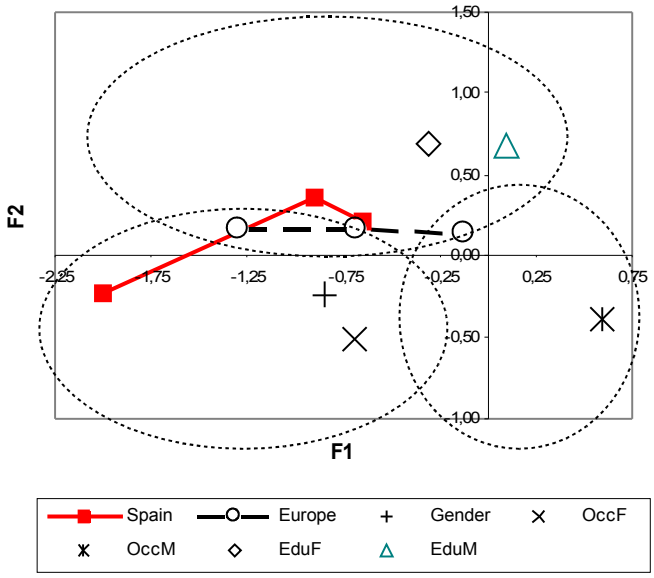
Spain	Students			
	1950-1970	1970-1990	1990-2005	1950-2005
	AGE 55-80	AGE 35-60	AGE 20-40	AGE 20-80
Sample size	**1068**	**1412**	**1220**	**3029**
% of tertiary	**8,4**	**21,0**	**33,3**	**21,2**
Inequality index	**0,790**	**0,741**	**0,727**	**0,757**
Logistic regression	Chance ratio	Chance ratio	Chance ratio	Chance ratio
Male/Female	**1,80**	1,08	**0,60**	0,94
OccF Q1/Q4	**7,86**	**2,84**	**4,08**	**3,55**
OccM Q1/Q4	**1,84**	**1,53**	1,14	**1,46**
EduF Q1/Q4	**4,41**	**3,59**	**2,17**	**3,67**
EduM Q1/Q4	1,28	1,32	**1,58**	**1,47**

In the 1950-1970 period, the **father's occupation** has had clearly the most important impact and children of fathers with the highest occupational status had even **nearly eight times higher** chances of achieving tertiary education as compared to children of fathers with the lowest occupational status. The influence of the father's occupation was strongly weakened in 1970-1990, but even in the period

from 1990 to 2005 chances of the children from better-positioned families in this respect were still **about four times higher**.

In the 1970-1990 period, it was the **father's education** who has had the strongest impact and children of fathers with the highest qualifications had **more than three times higher** a chances of achieving tertiary education as compared to children of fathers with the lowest qualifications. The influence of the father's education was even more stronger in 1950-1970 and in the period from 1990 to 2005, chances of the children from better-positioned families in this respect were still **more than twice as high**.

The third major family background factor is the **mother's occupation**. Its influence was the strongest in the 1950 -1970 period when children of mothers with the highest occupational status had **nearly twice as high** a chance of achieving tertiary education as compared to children of mothers with the lowest occupational status. The influence of the mother's occupation was important also in the 1970-1990 period when the chances of the children from better-positioned families in this respect were still **more than 50% higher**. On the contrary, this influence was not identified as significant in the 1990-2005 period.



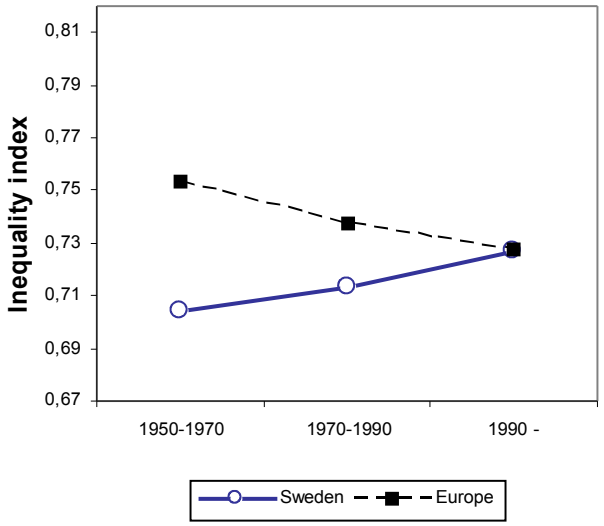
As regards the influence of gender on educational attainment, it was the strongest in the 1950-1970 period. At that time males had **about 80% higher** a chance to achieve tertiary education than females. In the following years this predominance of men was alleviated and in the 1970-1990 period the influence of gender on educational attainment in Spain was not identified as important. In the period from 1990 to 2005 women were gradually taking the lead as regards acquisition of higher qualifications and they had about **40% higher** a chance to achieve tertiary education than males.

The profile of the factors influencing educational attainment in Spain in the given historical periods is the closest to the so-called **traditional model**, particularly in the 1950-1970 period. In the following years there was an apparent shift towards "an educated family model" and in the 1970-1990 period and also in the 1990-2005 period Spain was right between the traditional model and "the educated family model."

Sweden

In the data set for Sweden tertiary education is defined by categories „*University, no exam*", „*University, exam less than 3 years*" and „*University, exam more than 3 years* "in the ESS1 data, and by the same categories in the ESS2 data.

The proportion of people with higher qualifications in the Swedish population confirms that Swedish higher education has already reached the advanced mass stage. Participation in tertiary education is growing, in all the three historical periods it was higher than the European average and the Swedish tertiary sector is thus among those with the highest participation levels of all the countries under review.



Analyses show that since the 1950s, inequalities in access to tertiary education have been gradually increasing but never exceeding the European average. In the 1950-1970 they were strongly below the European average value, in the 1970-1990 period they increased slightly and in the 1990-2005 period they were already close to the European average. The development is documented by the **inequality index** in various periods.

An analysis of the Swedish data for all age groups, where the respondents describe their family background when they were fourteen, shows that all **four factors** have influenced the acquisition of tertiary qualifications in Sweden - the father's occupation, the mother's occupation, the father's education and the mother's education.

Sweden	Students			
	1950-1970	1970-1990	1990-2005	1950-2005
	AGE 55-80	AGE 35-60	AGE 20-40	AGE 20-80
Sample size	1279	1818	1333	3522
% of tertiary	26,2	36,6	47,5	36,4
Inequality index	0,704	0,713	0,727	0,716
Logistic regression	Chance ratio	Chance ratio	Chance ratio	Chance ratio
Male/Female	0,76	0,58	0,51	0,58
OccF Q1/Q4	3,12	2,62	1,66	2,48
OccM Q1/Q4	1,53	1,82	1,98	1,91
EduF Q1/Q4	2,48	1,70	2,45	1,95
EduM Q1/Q4	2,26	2,38	2,33	2,08

In the 1950-1970 period and also in the 1970-1990 period, the **father's occupation** has had clearly the most important impact and children of fathers with the highest occupational status had **about three times higher** chances of achieving tertiary education as compared to children of fathers with the lowest occupational status. The influence of the father's occupation was strongly weakened in 1990-2005 (and was approximately half), but even in this period chances of the children from better-positioned families in this respect were still about **60% higher**.

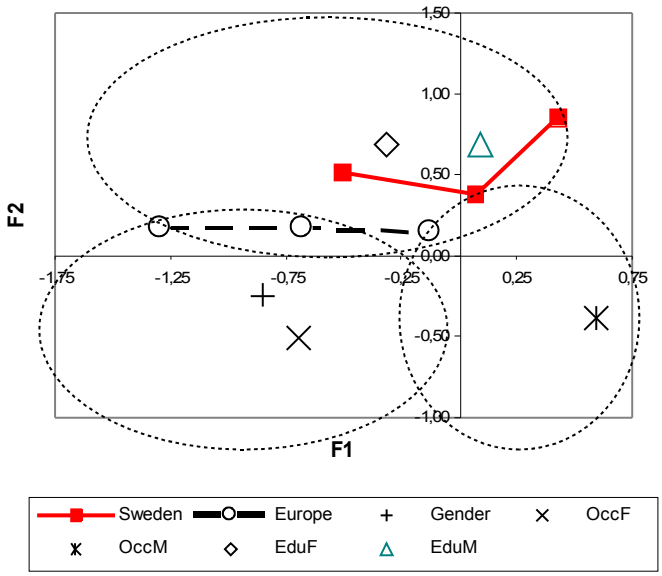
In the 1990-2005 period, it was the **father's education** who has had the strongest impact and children of fathers with the highest qualifications had **more than twice as high** a chances of achieving tertiary education as compared to children of fathers with the lowest qualifications. The influence of the

father's education was approximately at the same level in 1950-1970 but in the period from 1970 to 1990 chances of the children from better-positioned families in this respect were only **about 70% higher**.

The next long-term family background factor is the **mother's education**. Its influence was similar in all the three historical periods and children of mothers with the highest qualifications had **more than twice as high** a chance of achieving tertiary education as compared to children of mothers with the lowest qualifications.

The fourth major family background factor is the **mother's occupation**. Its influence was slightly increasing and it was the strongest in the 1990-2005 period when children of mothers with the highest occupational status had **about twice as high** a chance of achieving tertiary education as compared to children of mothers with the lowest occupational status. The influence of the mother's education was important also in the 1950-1970 and in the 1970-1990 period when chances of the children from better-positioned families in this respect were **between 50% and 80% higher**.

As regards the influence of gender on educational attainment, it was identified as important in all the three historical periods. In the 1950-1970, females had **about 30% higher** a chance of achieving tertiary education than males. The predominance of females was clear also in the 1970-1990 period when the chances was approximately 70% in favour of females. In the 1990-2005 period women had even up to **twice as high** a chance to achieve tertiary education than males.

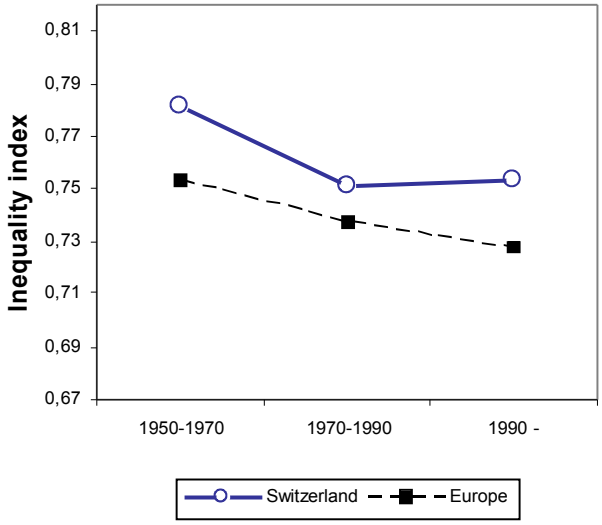


The profile of the factors influencing educational attainment in Sweden is the closest to the so-called **"the educated family model"** whereas particularly in the 1970–1990 period strong influence of the mother's education was clear. In the 1970-1990 the influence of the mother's education was promoted by a shift towards "the modern family model" but in the following years (1990-2005) the influence of "the educated family model" clearly prevailed.

Switzerland

In the data set for Switzerland tertiary education is defined by categories „*Technical or vocational high school (specialized)*", „*University (3years, short bachelor's degree)"*, „*University (4years and more, bachelor's degrese)"and* „*University (masters, post-grade)*" in the ESS1 data, and by the same categories in the ESS2 data.

The proportion of people with higher qualifications in the Swiss population confirms that Swiss higher education has already moved from the elite to the mass stage. Participation in tertiary education is naturally growing, but not so fast as European average. Swiss tertiary sector was below the European average in any of the three historical periods, and in the 1990-2005 the Swiss tertiary sector was among those with the lowest participation levels of all the countries under review.



Analyses show that, since the 1950s, inequalities in access to tertiary education have been firstly decreasing and then slightly increasing. In the 1950-1970 they were relatively high and in the 1970-1990 and also in the 1990-2005 they were still above the average. The development is documented by the **inequality index**.

An analysis of the Swiss data for all age groups, where the respondents describe their family background when they were fourteen, shows that all **four factors** have influenced the acquisition of tertiary qualifications in Switzerland - the father's occupation, the mother's occupation, the father's education and the mother's education.

Switzerland	Students			
	1950-1970	1970-1990	1990-2005	1950-2005
	AGE 55-80	AGE 35-60	AGE 20-40	AGE 20-80
Sample size	**1381**	**2061**	**1387**	**3823**
% of tertiary	**14,2**	**20,2**	**23,7**	**19,1**
Inequality index	**0,781**	**0,751**	**0,753**	**0,750**
Logistic regression	Chance ratio	Chance ratio	Chance ratio	Chance ratio
Male/Female	**3,76**	**2,02**	**1,38**	**2,03**
OccF Q1/Q4	**7,60**	**4,26**	**3,94**	**3,86**
OccM Q1/Q4	**1,58**	1,24	**2,43**	**1,53**
EduF Q1/Q4	**2,43**	**1,81**	**2,05**	**2,13**
EduM Q1/Q4	**1,90**	**2,42**	**1,63**	**1,99**

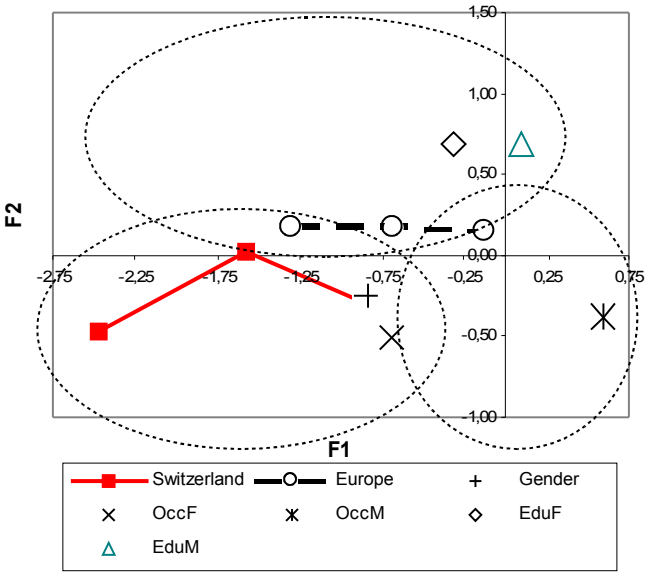
In all the three historical periods, the **father's occupation** has had the most important impact and its influence was quite strong. In the 1950-1970 period, children of fathers with the highest occupational status had even **more than seven times higher** a chance of achieving tertiary education as compared to children of fathers with the lowest occupational status. This influence was weakened in the following years but the difference of chances in the 1970-1990 and also in the 1990-2005 period was still **about four times higher**.

The next long-term family background factor is the **mother's occupation**. In the 1950-1970 period, children of mothers with the highest occupational status had **about 60% higher** a chance of achieving

tertiary education as compared to children of mothers with the lowest occupational status. In the following years, the influence of the mother's occupation was weakened and it was not identified as significant in the 1970-1990 period but in the 1990-2005, chances of the children from better-positioned families in this respect were **more than twice as high** again.

The third major family background factor is the **father's education**. Its influence was the strongest in the 1950-1970 period when children of fathers with the highest qualifications had **more than twice as high** a chance to achieve higher education. The influence of father's education was slightly weakened in the following two periods but chances of the children from better-positioned families in this respect were still **about twice as high**.

The fourth major family background factor is the **mother's education**. Its influence was the strongest in the 1970-1990 period when children of mothers with the highest qualifications had **more than twice as high** a chance of achieving tertiary education as compared to children of mothers with the lowest qualifications. The influence of the mother's education was significant also in the 1950-1970 and in the 1990-2005 period and chances of the children from better-positioned families in this respect were still **about 60 to 90% higher**.



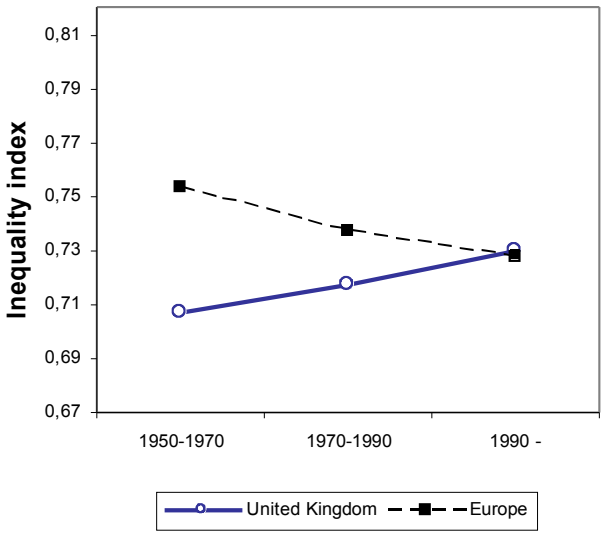
As regards the influence of gender on educational attainment, it was the strongest in the 1950-1970 period. At that time males had even **more than three times higher** a chance to achieve tertiary education than females and together with Greece, at the same time, there was the biggest inequalities caused by this influence. In the following years this predominance of men was alleviated approximately to a half, but the chances of males in the 1970-1990 period were still **about twice as high**. The figures became balanced in the period from 1990 to 2005 and in this period males had **about 40% higher** chances than females.

The profile of the factors influencing educational attainment in Switzerland in the given historical periods is the closest to the so-called **traditional model** in all the three historical periods. In the 1970-1990 there was an apparent shift towards "an educated family model" and in the 1990-2005 rather towards "a modern family model", but the traditional model still prevailed.

United Kingdom

In the data set for the United Kingdom tertiary education is defined by categories "*Degree/HNC/teacher training/nursing or equivalent*" and „*PhD/DPhil or equivalent*" in the ESS1 data, and by "*Degree \ Postgraduate Qualification Or Equivalent*" in the ESS2 data.

The proportion of people with higher qualifications in the British population confirms that British higher education has already moved from the elite to the mass stage. Participation in tertiary education is naturally growing and the British tertiary sector is close to the European average value in all the three historical periods.



Analyses show that since the 1950s, inequalities in access to tertiary education have been almost evenly increasing but never exceeding the European average. In the 1950-1970 they were strongly below the European average value, in the 1970-1990 period they increased slightly and in the 1990-2005 period they were already close to European average. The development is documented by the **inequality index** in various periods.

An analysis of the British data for all age groups, where the respondents describe their family background when they were fourteen, shows that all **four factors** have influenced the acquisition of tertiary qualifications in the United Kingdom - the father's occupation, the mother's occupation, the father's education and the mother's education.

United Kingdom	Students			
	1950-1970	1970-1990	1990-2005	1950-2005
	AGE 55-80	AGE 35-60	AGE 20-40	AGE 20-80
Sample size	**1364**	**1732**	**1303**	**3565**
% of tertiary	**18,4**	**28,6**	**32,9**	**26,7**
Inequality index	**0,707**	**0,717**	**0,730**	**0,716**
Logistic regression	Chance ratio	Chance ratio	Chance ratio	Chance ratio
Male/Female	**1,30**	**1,39**	*1,14*	**1,26**
OccF Q1/Q4	**6,28**	**2,88**	**2,29**	**3,27**
OccM Q1/Q4	*1,36*	**1,87**	**1,61**	**1,57**
EduF Q1/Q4	**1,66**	**2,06**	**3,22**	**2,24**
EduM Q1/Q4	*1,03*	**1,73**	**2,35**	**1,67**

In the 1950-1970 period, the **father's occupation** has had clearly the most important impact and children of fathers with the highest occupational status had even **more than six times higher** chances of achieving tertiary education as compared to children of fathers with the lowest occupational status. The influence of the father's occupation was strongly weakened in 1970-1990 (and was approximately half), but still has had the most important impact of all other factors. Also in the period from 1990 to 2005, this influence remained important and chances of the children from better-positioned families in this respect were still **more than twice as high**.

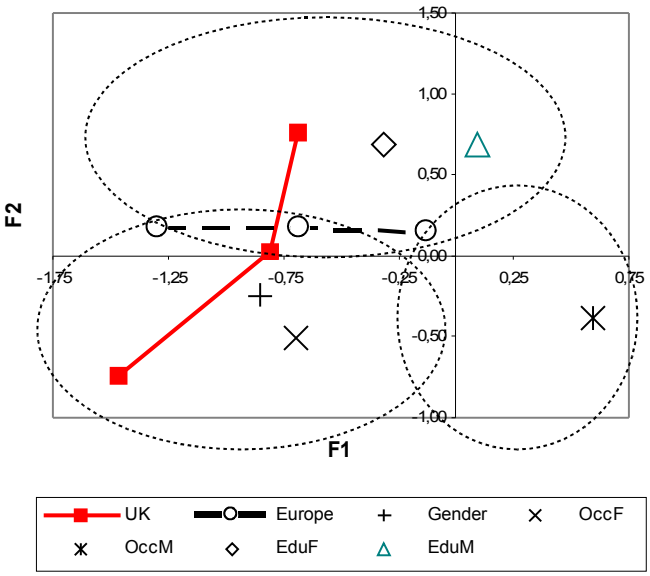
In the 1990-2005 period, it was the **father's education** who has had the strongest impact and children of fathers with the highest qualifications had **more than three times higher** a chances of achieving

tertiary education as compared to children of fathers with the lowest qualifications. The influence of the father's education was approximately half in 1950-1970 and in the period from 1970 to 1990, chances of the children from better-positioned families in this respect were **about twice as high**.

The next long-term family background factor is the **mother's education**. Its influence was not identified as important in the 1950-1970 period, but already in 1970-1990, children of mothers with the highest qualifications had **more than 70% higher** a chance of achieving tertiary education as compared to children of mothers with the lowest qualifications. In the 1990-2005 period, the chance was even **more than twice as high**.

The fourth major family background factor is the **mother's occupation**. Its influence was not identified as important in the 1950-1970, but in the 1970-1990 period and also in the 1990-2005 period, children of mothers with the highest occupational status had **about 70% higher** a chance of achieving tertiary education as compared to children of mothers with the lowest occupational status.

As regards the influence of gender on educational attainment, the United Kingdom belongs among those countries where it was weak. In the 1950-1970 and also in the 1970-1990, males had **about 30% higher** a chance of achieving tertiary education than females. The figures became balanced in the period from 1990 to 2005 when the influence of gender on educational attainment in the United Kingdom was not identified as important and in this period males had approximately the same chance to achieve tertiary education as females.



The profile of the factors influencing educational attainment in the United Kingdom in the given historical periods was the closest to the so-called **traditional model**, particularly in the 1950-1970 and also in the 1970-1990. In the following years, there was an apparent shift towards "an educated family model" and this influence in the 1990-2005 clearly prevailed.