

The Perceived Value of Education and Educational Aspirations in the Czech Republic:
Changes in the determination of educational aspirations between 1989 and 2003 ¹

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Abstract

This paper analyzes changes in the determination of educational aspirations from 1989 to 2003 in the Czech Republic, a country where the intergenerational transfer of beliefs about life-success between parents and children has taken place in the context of significant social, political and economic transformation. In doing so, the paper contributes to an explanation of how rapid socio-economic change may influence both aggregate levels of educational aspirations among pupils as well as how those aspirations are determined by social origin and other factors. The Czech case is also particularly important for research on aspirations as previous studies have shown that the Czech educational system generates a significantly stronger determination of educational aspirations by social origin, ability and gender than is the case in most other OECD countries.

The empirical research is based on a comparison of data from the “Family ‘89” (*Rodina '89*) survey conducted in January 1989 (roughly ten months before the collapse of communism) and the 2003 PISA-L survey for the Czech Republic. In comparing the two time periods, the paper hypothesizes that the social origin of the background family had a stronger *direct* impact on the educational aspirations of adolescents in 1989, while in 2003 social origin had a much stronger *indirect* influence. The stronger direct impact in 1989 is due to the very limited access of higher education under socialism and the role higher education played in the reproduction of the cultural elite. But with the gradual expansion of, and the rapidly increasing returns to, higher education during the transition period, social origin began to have a largely indirect effect on aspirations, particularly through the value pupils began to place on higher education as a means of life-success. The empirical results of the analysis confirm our main hypothesis about the change from direct to indirect effects, and highlight the importance of the study of educational aspirations from a historical point of view.

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Introduction

This paper compares the changes in the determination of educational aspirations from the end of the communist period to 2003, focusing on a single post-communist country, the Czech Republic. The Czech case is particularly relevant for international research on educational aspirations in that previous studies have shown that the Czech educational system generates a significantly stronger determination of educational aspirations by social origin, ability and gender than is the case in other OECD countries. On the basis of those findings, this paper examines whether and how these strong determining forces have changed over time. The analysis is made possible by the fact that in 1989, just a few months before the collapse of the Czechoslovak communist regime, a survey was carried out on 8th grade elementary school pupils (around 15 years of age) and their parents, focusing primarily on the process of the formation of beliefs about life-success and educational aspirations. By using that survey alongside similar data from PISA 2003, we can historically compare the role of the intergenerational transfer of values about life success, mental ability and socio-economic status in the formation of educational aspirations in adolescents in 1989 and 2003.

As background, this paper first overviews the literature on educational aspirations as well as on key findings of social stratification research on the late communist period and the period of economic transition, focusing in particular on the idea of 'de-stratification' and the gradual erosion of the value system during that time. We then develop hypotheses about the change in the relationships between socio-economic background, measured ability, beliefs about the role of education in life-success and educational aspirations from 1989 to 2003. The core of the paper is dedicated to presenting the key findings about the role of social background, ability, perceived role of education in life-success among parents and their children in the formation of educational aspirations of 15-year-olds. We then conclude by summarizing what changes in the determination of educational aspirations of adolescents have occurred during the 15 years of transition.

Research on educational aspirations

Since the 1950s, the study of educational aspirations has been one of the liveliest areas of research in social stratification. Already at its outset, social stratification research brought overwhelming evidence that the educational aspirations of adolescents are one of the strongest predictors of educational and occupational careers (Hyman 1953; Reissman 1953; Kahl 1953; Herriott 1963). Those initial findings precipitated a surge in research on the topic, so that by the early 1970s, Williams (1972) identified more than four hundred studies relating to educational aspirations alone. Considering only articles in professional journals, by 2004 there have been as many as 1100 papers on this topic.²

During the 1960s and early 1970s, research on aspirations focused on its role in mediating the effects of socio-economic background on educational and occupational attainment. Many of the pioneering studies on educational aspirations emerged from the work of William H. Sewell and his colleagues, who laid the foundations of the so-called social psychological school in social stratification research (Archibald O. Haller, Vimal P. Shah, Alejandro Portes, Otis D. Duncan, Robert M. Hauser, to name some of the most important). In explaining variance in the educational aspirations of adolescents, early studies by these scholars (Sewell, Haller, and Straus

² According to research database EBSCOhost.

1957; Sewell 1961; Sewell 1963; Sewell and Hauser 1972, Sewell and Shah 1967; Sewell and Shah 1968a,b) pointed to such factors as parental SES, measured ability, academic performance, parents' expectations and encouragement, and peers' aspirations, to list just a few.

At the beginning of the 1970s, other approaches to the study of educational aspirations sprung up challenging some of the core assumptions of the social psychological model. Alan C. Kerckhoff, in his first critical analysis of the "socialization model" (Kerckhoff 1976), emphasized that even though scholars who subscribed to the socialization perspective achieved impressive results in explaining the processes of educational and occupational attainment, they did not pay adequate attention to the structural constraints that individuals take into account (more or less consciously) when making important decisions about their future educational and occupational careers. This is why, Kerckhoff argued, a good deal of the variance in aspirations had not been explained by the social psychological model (Kerckhoff 1976).

Therefore, without questioning the true achievements of the research carried out under the socialization perspective, the adherents of the 'allocation' perspective (Kerckhoff 1976; Kerckhoff and Campbell 1977a,b; Wilson and Portes 1975; Simmons and Rosenberg 1971; Alexander and Eckland 1975; Karabel and Astin 1975; Jencks 1972; Han 1968, 1969) suggested that the research on aspirations and their role in the attainment process underestimated how contextual and institutional conditions influence the way pupils' unconstrained "wishes" transform into "realistic" plans. The allocation model was not intended to replace the socialization model, but was rather meant to bring into consideration additional factors that could help explain the attainment process and, in particular, the formation of educational aspirations. "The socialization model interprets the strong association between ambition and attainment as indicating that the goals direct and motivate the child's efforts during the formative years and thus determine the level of attainment he reaches later. (.) this interpretation implies an open system within which the major determinants of attainment are motivation and ability. (...) It seems reasonable to argue that expectations of the future are affected by observed structural constraints, and thus they reflect more than pure motivation" (Kerckhoff 1976:371).

Kerckhoff's comparative analysis of thirteen-year-old boys in the United States and England (Kerckhoff 1977), which built on the distinction between "contest" and "sponsored" mobility proposed earlier by Turner (1960), confirmed that social origin and ability played a greater role in explaining educational aspirations among English boys than among their American counterparts. In interpreting these results, in line with Turner's argument, Kerckhoff attributed the more structurally constrained aspirations in England, compared to the US, to the greater "realism" of English pupils and the English system's emphasis on ability in determining the type of secondary school pupils will attend. While the English system leads pupils to develop realistic educational and occupational plans earlier in life, the American system does not provide the same structural constraints, and thus pupils maintain lofty aspirations until late in the educational process, that is, as high school graduation nears and realistic assessments of career options need to be made. Thus, according to the adherents of the 'structural' approach, educational aspirations are not only shaped by factors at the individual or social psychological level (e.g. parental SES, measured ability) and at the contextual level (e.g. quality and type of attended schools), but also at the structural level of the educational system.

Further research on the role of educational systems on educational aspirations has been largely based on the typology of systems introduced by Müller and Shavit (1998) and further elaborated by Kerckhoff (2001). The typology is based on three dimensions along which educational

systems can be classified: the degree of *stratification* of the educational system, its orientation to vocational training (*vocational specificity*), and its *standardization*.³

Research on the interplay between the individual, contextual and structural levels in the formation of educational aspirations has already brought valuable results. Buchmann and Dalton (2002) used data from one of the large-scale student assessment projects (TIMSS 1995) to identify differences between selected countries in the effect of parents' and peers' attitudes towards education on the educational aspirations of 13 year-olds. First, the study has confirmed that, after controlling for the effect of ability (math achievement), the effect of parents' education on the educational aspirations of their children is significantly higher in countries with highly stratified educational systems than in countries with relatively undifferentiated systems of secondary education. Conversely, parents' and peers' attitudes towards education more significantly affect the educational aspirations of adolescents in countries with less stratified systems. The authors, though they acknowledge that their evidence is not strong, come to the conclusion that in more differentiated systems aspirations are largely determined by the type of school students attend, so there is little room for interpersonal effects (Buchmann and Dalton 2002:99).

The most recent comparative analysis of educational aspirations (Buchmann and Park 2005) draws on PISA 2003 data, a large-scale student assessment project targeting 15-year-olds enrolled in school (regardless of the grade or type of institution in which they are enrolled). Using the typology of educational systems developed by Müller and Shavit (1998), the authors reconsidered the question of whether the degree of stratification of a country's educational system impacts the formation of students' educational and occupational expectations. Referring to Kerckhoff's comparison of England and the United States (Kerckhoff 1977), they predicted that the 'realism' of students' educational expectations depends on the degree to which the educational system provides feedback to students about their future. "In unstratified educational systems the general nature of the curriculum and lack of differentiation at the secondary level convey the notion that a range of educational and occupational trajectories are open to all students until quite late in the game. (...) But in systems where children are sorted into different types of secondary school at an early age, the likelihood of advancing to higher levels of education depends far more on credentials than on personal choice. The type of school a student attends sends them a clear message about their educational trajectory and they develop realistic views about how far they will go in school and what kind of job they are likely to get." (Buchmann and Park 2005, pp. 8-9).

³ *Stratification*, most often used to classify secondary schools, "refers to the degree to which systems have clearly differentiated kinds of school whose curricula are defined as 'higher' and 'lower'. (...) In stratified systems, the program offerings in the types of secondary schools are associated with different degrees of access to opportunities for additional, more advanced schooling. So, the term *stratification* refers to both the kind of programs offered and their links to future opportunities." (Kerckhoff 2001:4). *Vocational specificity*, another relevant dimension often used in the analyses of educational systems, is the degree to which curricula are designed to prepare students for particular vocations. In terms of statistical indicators, it can be represented by the proportion of students leaving the educational system with specific skills (e.g. Buchmann and Dalton 2002). A high degree of vocational specificity very often indicates also a high degree of system stratification, because schools providing training for specific occupations usually co-exist with schools preparing for further, more academic types of education at a higher level. In other words, high vocational specificity goes hand in hand with high stratification, usually within the so-called dual system of secondary education, such as in Germany. *Standardization* refers to the degree in which governments create conditions (e.g. teachers' education, financing, etc.) and control mechanisms (nationwide tests, school-leaving examinations, etc.) to achieve certain standards of quality in education provided by different schools.

While it has been well established, both theoretically and empirically, that educational aspirations depend on students' social and personal characteristics more in highly-stratified educational systems than in less stratified ones, a question should be raised if pupils in more stratified systems, all else being equal, generally have more 'realistic' aspirations shaped primarily by their ability, or what is regarded as 'realism' of aspirations may rather be a typical outcome of the 'internalization' of structural constraints, which makes children from lower social strata less ambitious and thus less prone to follow more demanding educational pathways than equally gifted children of more favorable social backgrounds. A lot matters, of course, on the operational definition of 'realism'. While 'realism' can explain the strong impact of measured ability on aspirations (net of parental SES), it also may indicate a *constrained* rather than a *realistic* choice, particularly when it is primarily the socio-economic background (net of measured ability) what makes children '*realistically*' choose a particular type of school or vocational track. In other words, following Turner's distinction between contest and sponsored mobility, we should distinguish between one's capacity to *realistically evaluate* chances for success in structural settings allowing an open 'contest,' on the one hand, and *decisions formed in reaction* to a highly stratified (selective) school system resulting in 'sponsored' mobility, on the other ("adopted discrimination").

Most recently, a comparative analysis of the formation of educational aspirations in OECD countries (Matějů, Soukup, Basl and Smith 2006) corroborated the hypothesis that the Czech educational system, due to its high degree of stratification and vocational specificity (Kerckhoff, Buchmann, Park) generates a significantly stronger determination of educational aspirations by social origin, ability and gender than is the case in OECD countries with less stratified (differentiated) systems of secondary education. The analysis was based on the initial categorization of OECD countries in terms of the relationship between the determination of educational aspirations and a composite variable indicating openness and permeability of a country's educational system.⁴

Several findings of the analysis can be highlighted. First, the overall degree to which educational aspirations are determined by ability, gender and parental SES was found to be much higher in the Czech Republic, Germany, Hungary, Poland and other countries with highly stratified systems (where the Nagelkerke R^2 was more than .40) whereas the coefficient of determination was much less in the US, Canada, Australia, France and other countries with less stratified and more open educational systems (where the Nagelkerke R^2 was less than .25). Second, the effect of the school attended on educational aspirations is much stronger in countries representing Type 1 (the Czech Republic, Germany), than in countries belonging to Type 2 (France, Great Britain) and especially to Type 3 (United States, Sweden).

Perhaps most importantly, the study also found that, after taking into account relevant variables, the net effect of students' ability on aspirations is quite homogeneous across countries. This finding challenges previous claims about the 'realism' of aspirations. That is, the study found that pupils with a given level of ability in highly stratified educational systems assess their prospects to the same degree as pupils with the same level of ability in less stratified systems. However, this is not the case for the net effect of social origin on aspirations, which – unlike the net effect

⁴ This led to the categorization of Type 1, Type 2 and Type 3 countries, in which Type 1 countries (e.g. Germany and the Czech Republic) are the most stratified and exhibit the greatest determination of aspirations, Type 1 countries (e.g. Sweden and the USA) have the least stratified systems and exhibit the smallest determination of aspirations, whereas Type 2 countries (France and Great Britain) are situated in the middle with respect to both factors.

of ability – is significantly stronger in more stratified educational systems. In countries like the Czech Republic, this finding testifies to the presence of “adopted discrimination” generated by mechanisms described previously as “sponsored mobility,” rather than about “more rationality.”

While comparative analyses of the determination of aspirations have already borne interesting results, it has been more difficult for scholarship to examine how the determination of aspirations has changed through periods of social transformation. In post-communist countries, the intergenerational transfer of beliefs about life-success between parents and children has taken place in the context of significant social, political and economic change. Arguably, these changes may have had an important impact on the formation and intergenerational transfer of beliefs about life-success. Temporal comparisons within a given transition country is also useful for observing both differences in the total effect of social origin on educational aspirations, as well as the indirect effects of social origin, such as through the role of intervening variables that may be more prominent in one historical context but not another. Therefore, this study seeks to advance our understanding of the historical development of the determination of aspirations by juxtaposing 2003 PISA data with data from a 1989 survey on 8th grade elementary school pupils (around 15 years of age) and their parents, focusing in particular on the role of the intergenerational transfer of values about life success, mental ability and socio-economic status in the formation of educational aspirations in adolescents between those time periods.

Brief review of the prior research on stratification before and after the collapse of communism

Many accounts of the intergenerational transmission of social status proceed from a number of important assumptions that broadly apply to both traditional and modern societies, but not necessarily those undergoing rapid change. Above all, the reproduction of the social stratification system requires that the value system of the society have specific characteristics, such as a certain ‘universal’ set of beliefs about the stratification scale, positively sanctioned patterns of behavior, universalistic-performance values, and *eo ipso* potentially effective strategies of life-success (see e.g. Parsons 1937, 1954). These conditions are rooted in historical continuity, and it is thus an open question whether and to what extent social stratification theories apply to contexts of historical discontinuity, such as the tumultuous social transformations witnessed in Eastern Europe in the 20th century.

It is very likely that periods of historical continuity enable the creation of stronger and more consistent beliefs about life-success than was possible in the periods of discontinuity faced by the generations that underwent the Marxist experiment of *de-stratification*.⁵ Research conducted since 1989 has demonstrated that *de-stratification* during the Marxist experiment, the implications of which post-communist societies are still struggling with, did not mean so much an overall decrease in inequalities, but rather entailed the incoherence of inequalities and the

⁵ We have carried out a re-analysis of Šafář’s replica of Duncan’s basic model of social stratification to verify the justification of the “*de-stratification*” thesis and its implications for the basic relationships in the stratification system; contrary to initial assumptions, the analysis has shown that the classical stratification model could not be applied without substantial modifications to the stratification system of socialist Czechoslovakia (Boguszak, Gabal and Matějů, 1990).

erosion of the value system underlying the system of social stratification.⁶ This process has, without any doubt, disrupted beliefs about life-success passed on from generation to generation. This is one of the main reasons why it is so important to examine the formation of educational aspirations of adolescents in the Czech society 15 years after the collapse of the communist regime.

Thus, the perceptions of life success of people who are now reaching the peak of their careers (i.e. parents of today's adolescents) are not merely the outcome of their actual life experience from the time of "renewing capitalism," but also the life experience of their parents who passed to them the experience of living under socialism. It is the social transformation within which this intergenerational transfer of patterns of life success is taking place that makes the topic of historical change in the determination of educational aspirations so interesting and appealing. Our primary aim is to show how parents' perceptions of the role of education in life-success shaped the life plans and educational aspirations of their children under socialism and what changes these relationships have undergone in the 15 years of transition.

As will be demonstrated further this is by no means a comparative historical analysis *stricto sensu*. The problem is that the surveys which served as the basis for this paper did not use quite the same tools and therefore the measurement protocols for the important variables are not identical. That makes a *direct* comparison difficult. We hold, however, that the causal structures of the relations determining the life plans of 15 year-olds in 1989 and 2003 are an interesting subject for analysis even without the possibility of a direct comparison.

Main hypotheses

As for the changes that took place between 1989 and 2003, we build on the assumption that under socialism higher education was in demand, but in view of its relatively low economic return, only families with the highest education and economic status could adopt higher education as a strategy of life-success. In general, we can say that higher education played an important role in the reproduction of the cultural elite. Due to a significant change in the economic value of education during the post-communist transformation (economic returns to education almost doubled between 1989 and 2003), the role of education in life-success significantly strengthened and education has become a more universal "strategy" for life-success than was the case under socialism. We also hypothesize that the change in economic returns to education and in the role of education in life-success after 1989 caused a significant growth in educational aspirations between 1989 and 2003.

Consequently, educational aspirations have been steeply growing during the post-communist transformation. However, as shown in our previous analyses, the system of secondary education in the Czech Republic has remained highly stratified and selective, and the same holds for the system of tertiary education. Therefore, competition for admissions to tertiary education has been extremely strong. In order to increase their chances of being admitted to a college or university, parents strive to place their children in elite secondary schools (*gymnasia*).

Having empirical evidence about these processes, we hypothesize that social origin plays a very

⁶ Here, we mean primarily research of value orientations and beliefs about social justice (Večerník and Matějů 2000, Matějů and Vlachová, 2000), status consistency (Matějů and Kreidl, 2000), political orientation and electoral preferences, etc.

strong determining role. But in comparing the two time periods, we hypothesize that the social origin of the background family had a stronger *direct* impact on the educational aspirations of adolescents in 1989, while in 2003 social origin is expected to have a much stronger *indirect* influence. For building explanatory causal models to be tested on the data from the two surveys, this general hypothesis (represented in Diagram 1) has been decomposed into four simple ones:

- a. The direct effect social origin on aspirations has diminished between 1989 and 2003;
- b. The effect of ability on aspirations has grown during this period;
- c. The effect of parental SES on the perceived value of education among parents and children has weakened;
- d. The total effect of social origin on educational aspirations has not changed, i.e. has remained very strong.

<Diagram 1 about here>

Data and methodology

The 1989 data comes from a survey titled “Family ‘89” (*Rodina ’89*) carried out in January 1989 on a total sample of 3,719 pupils in their 8th year of education. The respondents were sampled from 8th graders of 44 basic schools chosen so as to cover the basic types of regions, size of settlements and types of built-up areas (typological selection).⁷ The questionnaires for the pupils contained questions concerning educational and occupational aspirations and plans, perception of social inequalities, beliefs about life-success, cultural activities and leisure time, standard of living, etc. As a part of the survey, the pupils were exposed to the Czech version of Cattell’s “*High School Personality Questionnaire*” prepared by K. Balcar (Balcar 1986).⁸ This survey was followed by a survey of the pupils’ parents; the filled-in questionnaire was returned, after several reminders, by a total of 2,709 families (73% response rate). Respondents (parents) were asked questions about themselves, their partners and other members of the household. The questionnaire for parents was aimed at assessing basic social and demographic data, the family’s lifestyle, cultural participation, social contacts, beliefs about life-success, expectations regarding they children’s future achievements, etc.

The data from the year 2003 comes from the PISA-L survey carried out by the Department of Education and Stratification of the Institute of Sociology of the Academy of Sciences of the Czech Republic based on the PISA 2003 international survey. The target group of the PISA 2003 survey were pupils born in the calendar year 1987 attending school in 2003. A two-stage sampling procedure was used in accordance with the OECD guidelines. First, schools were selected randomly from the database of all schools attended by pupils born in the calendar year 1987 (with the exception of remedial schools and schools for children with disability); pupils were then selected within those schools. The sample was stratified according to the type of school/study program (primary school, multi-year grammar school, 4-year grammar school, secondary vocational program with a school-leaving exam, secondary vocational program without a school-leaving exam, special school). It was possible for schools providing several

⁷ Details about the survey may be found in the survey report by Matějů, Tuček and Rezler (1991), which is published on the www.stratif.cz website in the Files to Download section.

⁸ This personality questionnaire was selected mainly for the reason that apart from other personality characteristics it measured also *crystalline intelligence* (factor B) related mainly to *verbal* experience and reflecting the ability of *logical reasoning* (for details see Matějů, Tuček and Rezler 1991, pp. 30 - 33, Balcar 1986).

types of study programs to be selected within all the types of study programs (i.e. they entered the sampling procedure repeatedly). A similar procedure was applied to obtain a larger representative sample of pupils in 9th grade primary school and the corresponding grades of multi-year gymnasia. The data file that was entered into the international data file and contained responses from 6320 pupils from 260 schools (representing a school population of 121,183 pupils). The additional sample of 9th graders contained 6340 pupils from 148 schools (representing a school population of 116,968 pupils) of this specific target group.

For the analyses presented in this paper, we have chosen the sample closest in its nature to the 1989 data set, i.e. the 9th grade respondents from the PISA 2003, as well as from the questionnaire “Addendum to the Student Questionnaire” and from the Questionnaire for Parents.⁹ There are 2,479 cases in total in the analytical data file.

The variables for the analysis of the role of education in life-success among parents were in both cases chosen from quite extensive batteries of items. Only those items were selected that appeared in the questionnaires for parents in both years. In 1989 the question introducing individual items was: “*What do you believe your child should be able to do or have in order to be successful in his/her life?*” In 2003 the question was phrased in a slightly different way: “*What do you believe is important nowadays for a young person to get ahead in life, to be successful?*” A four-point Likert scale was used to answer individual items.¹⁰ In 1989 only one parent answered, in 2004 both parents did. The individual items as well as frequency distributions are shown in table A1 in the Appendix.

Pupils’ beliefs about life-success were ascertained in 1989 by the following question: “*What should a person do to get ahead in life?*” As in the analysis of parents, individual variables were transformed so that a higher value represented higher importance. In 2003, pupils’ beliefs about life-success were assessed in the same way as their parents.’ The question was phrased “*How important do you believe the following items to be for a young person to get ahead in life?*” The individual items are listed in tables A1 and A2 in the Appendix.

Educational aspirations of pupils in 1989 were ascertained by two questions. The first one was: “*You will finish primary school this year and will be deciding what next. Try to imagine for a moment that you will be deciding by yourself with no one influencing you. What would you decide to do when you finish the 8th grade?*” The options were as follows: 1. I would like to start earning money right away and would not go to school anymore; 2. I would apply for an apprentice program without secondary school-leaving exam¹¹; 3. I would apply for an apprentice program with a secondary school-leaving exam; 4. I would like to study at a secondary vocational school with a school-leaving exam; 5. I would like to study at a grammar school. The second question was: “*Would you like to study at a college or university?*” Answers: 1. definitely yes; 2. I am not quite sure yet, but probably yes; 3. I am not quite sure yet, but probably not; 4. definitely not. Principal component analysis was applied to define the analytical variable EDUASP (a single factor was extracted).

⁹ All the named questionnaires may be found on the website of the Social Stratification Research Department in the section Projects, Educational Inequalities PISA-L, Questionnaires. (www.stratif.cz/?operation=display&id=63).

¹⁰ In 1989: 1. definitely yes, 2. rather yes, 3. rather no, 4. definitely no; in 2003: 1. very important, 2. quite important, 3. not very important, 4. totally unimportant. The scales for analyses were transformed so that a higher value represented higher importance.

¹¹ A secondary school-leaving exam (“maturitní zkouška“ in Czech) is required for entry to tertiary education (college or university).

Educational aspirations of pupils in 2003 were ascertained by several questions. The first question was: *“What education would you like to attain?”* (Answers: 1. apprenticeship without secondary school-leaving exam; 2. apprenticeship with a school-leaving exam; 3. secondary vocational school with a school-leaving exam; 4. grammar school; 5. tertiary vocational school; 6. university or college). We also used answers to four questions concerning the child’s life plans: *“The job I will some day have will depend on my education”*; *“In order to achieve what I really want I will have to go to a university/college”*; *“I think I would enjoy going to a university/college”*; *“I think I am able to successfully graduate from a university/college.”* These questions were answered by four-point scale: 1. strongly disagree - 4. strongly agree. Similar to the 1989 data, principal component analysis was applied to identify the analytical variable EDUASP (a single factor was identified by the analysis).

In 1989, abilities were measured by a High School Personality Questionnaire (HSPQ). The variable ABIL was created as a normalized coefficient of “crystallized intelligence” (see Cattell 1960, Balcar 1986). The 2003 ABIL variable was calculated from the averages of plausible values, four dimensions of literacy tested in the PISA 2003 survey (mathematical literacy, reading literacy, scientific literacy and problem-solving). The resulting ABIL variable was obtained through a principle component analysis (one sole factor with even factor weights: 0.957, 0.939, 0.963 and 0.971).

The socio-economic status of the family was represented by the education of the more educated parent (EDU-H), the index of socio-economic status of the occupation of the parent with a higher index (ISEI-H) and the total income of the household (INCOME). For some descriptive analyses, the variable FAMSES was created from these three input variables using the method of principal components.

As for the chosen methodology, a structural model for each year has been designed to assess differences in the internal structure of family socioeconomic status (SES dimension), its direct and indirect impact on educational aspirations, the effects of children’s mental ability (cognitive dimension) and the perceived role of education in life success among parents and children (social psychological dimension). The structural model derived from the theoretical causal model (Diagram 1) was tested on the data from 1989 and 2003 surveys, and is shown in Diagram 2.

<Diagram 2 about here>

Perceived importance of education in life-success and college aspirations: 1989 - 2003

Figure 1 compares parents’ perceived importance of education for life-success in 1989 and 2003. While we should stress that the surveys are not directly comparable, the data does suggest a major increase in the number of parents in 2003 who strongly believe in the importance of attaining as much education as possible. Both fathers and mothers registered similar responses. In addition to the increased value of education for life-success, from 1989 to 2003 there has also been an increase in parents’ perception of the importance of knowing foreign languages, as well as a decline in the importance of hard work and in political engagement (Tables A1 and A2). These findings can be easily interpreted in light of the structural changes in economic conditions between the two periods.

<Figure 1 about here>

The change in pupils' perceived importance of education for life-success from 1989 to 2003 is even more dramatic than that of their parents (Figure 2). While roughly 44% of both boys and girls in 1989 believed in the importance of education for life-success (i.e. those who agreed and strongly agreed), about 95% of boys and girls in 2003 had the same perceptions. Arguably, the generational differences in perceptions between parents and their children could be attributed to the legacies of communism. While parents in 2003, who were socialized by the prior regime in believing that hard work was more important than education for life-success, may have changed their perceptions gradually over time, pupils in 2003 do not have those legacies, and in fact grew up in a world of rapid changes in economic fortunes (in many different senses), where higher education could be seen as the key difference between those moving up and down the economic ladder. In addition to the perceived importance of education for life-success, from 1989 to 2003 there has been an increase in pupils' perception of the importance of hard work and political engagement (i.e. the opposite trend as their parents). The latter finding is particularly interesting, as it may indicate that at least some pupils are internalizing the belief that those who have benefited the most from the economic transition achieved success partly on the basis of corruption or political ties (Tables A1 and A2).

<Figure 2 and Figure 3 about here>

Lastly, Figure 3 compares the college aspirations of pupils in 1989 and 2003. The data indicates that there has been roughly a three-fold increase in aspirations between those years, with girls showing an even larger increase in aspirations than boys. While the data is striking, it does not provide any information about the determinants of aspirations at these different periods of time, which we will now seek to uncover.

Causal Model for Educational Aspirations

On the basis of our main hypotheses, we have developed a structural model of the determinants of educational aspirations (Diagram 2). The measurement part of the structural model defines the latent variable representing socio-economic status of the pupil's family (FAMSES), measured by the education of the higher educated parent (EDU_H), the socio-economic status of the parent whose occupation has a higher score on the ISEI index (ISEI_H), and the total income of the family (FAMINC). The structural part of the model is composed of measured abilities (ABIL), the perceived importance of education for life-success by pupils (D_EDU) and by their parents (R_EDU), and the educational aspirations of pupils (EDUASP). The model was tested on correlation matrices (see Table A3 in the Appendix).

The model represents the input hypothesis according to which pupils' educational aspirations are primarily affected by social origin, either directly (parameter g_{41}) or through their parents' beliefs about the importance of education for life-success (effect $g_{31} * b_{43}$). In addition, family socio-economic status also impacts aspirations through the mediation of pupils' scholastic ability. This effect is both direct (b_{41}) and indirect: ability reinforces the importance pupils attach to education for life-success ($b_{21} * b_{42}$). We also assume that a pupils' higher level of ability strengthens the importance parents attach to education and therefore strengthens also their influence on educational aspirations ($b_{31} * b_{43}$, $b_{31} * b_{23} * b_{42}$).

This complex causal hypothesis proved to be formally acceptable and suitable for the data from both surveys.¹² Before we discuss the model parameters directly linked to the causal hypothesis, we should first mention an important difference in the measurement model for the socio-economic status of the background family (FAMSES), namely the role of family income (FAMINC). In 1989, income had a negligible impact on aspirations in comparison with education and socio-economic status ($l_{31}=0.128$ vs. $l_{21}=0.849$, $l_{11}=0.873$), whereas in 2003 this component of the latent variable FAMSES plays much stronger role ($l_{31}=0.623$ vs. $l_{11}=0.843$, $l_{21}=0.797$). In other words, the measurement model for the latent variable FAMSES indirectly confirms that there has been a fundamental change in the consistency of socio-economic status brought about by the economic transition, a conclusion we have reached in another paper (Matějů and Kreidl, 2001).

In terms of the structural part of the model, consisting of the variables FAMSES, ABIL, R_EDU, D_EDU and EDUASP, we have to bear in mind while interpreting its parameters that two of the variables were not measured in the same way. Measured ability (ABIL) was measured as “crystalline intelligence” in 1989, whereas in 2003 it was measured as an index composed of pupils’ literacy skills (reading literacy, mathematical and scientific literacy, problem-solving skills). The variable EDUASP is represented by a factor score in both years; nevertheless the variables entering the factor analysis were not based on questions with the same wording. Therefore, it must be emphasized once again that it is necessary to proceed with caution when comparing the model parameters, which might be directly influenced by the above mentioned variables. For this reason, we concentrate on some clusters of causal relationships which are of particular consequence.

<Tables 1 and 2 about here>

It can be generally stated that the ability of the model to explain differences in educational aspirations is very good: the explained variance of educational aspirations exceeded 40% in both years (r^2 0.449 and 0.376). From the results displayed in Tables 1, 2 and 3 it is further clear that the direct effect of social origin on educational aspirations (g_{41}) is much stronger in the model for 1989 (0.421) than 2003 (0.185). Although there are smaller differences in the total effects of social status on aspirations between the years (0.582 and 0.413), this effect remains stronger in 1989. The same applies to the effect of socio-economic background on parents’ perceived importance of education for life-success (g_{31}). In 1989, this impact was several times higher than in 2003 (0.227 and 0.069).

<Table 3 about here>

Everything indicates that in 2003 the impact of social origin on educational aspirations was affected to a much greater extent through the abilities of the children (ABIL) and through the perceived “value” of education both by children and their parents (D_EDU, R_EDU), rather than directly. If we compare direct and total effects of social origin on educational aspirations (see Table 3), we find that in 1989 the direct effect represented 72% of the total effect, while in 2003 it was only 45%. The effect of social origin on pupils’ aspirations, as mediated through abilities ($g_{11}*b_{41}$), amounted to 0.105 in 1989, representing 18% of the total effect, whereas in 2003 it reached 0.203, representing 49% of the total effect. To give an overall evaluation of the causal determination of pupils’ educational aspirations, we divided the whole model into three

¹² All the relevant statistics of model applicability are listed under Tables 9 and 10 (chi/df, p, GFI), which indicate a very good fit.

theoretically relevant parts, with one (M1) representing the direct influence of parents on aspirations (g_{41}), the second one (M2) representing the indirect influence of parents through the importance they prescribe to education $[(g_{31}*b_{43})+(g_{31}*b_{23}*b_{42})]$ and the third (M3) representing the influence of the background family on educational aspirations solely through the children's abilities and the perceived importance of education among children $[(g_{11}*b_{41}) +(g_{11}*b_{21}*b_{42}) +(g_{11}*b_{31}*b_{43}) + (g_{11}*b_{31}*b_{23}*b_{43})]$. The drop in the effect of parents is visible is partly due to the decline in the effect of the perceived value of education by parents (model M2 in Table 3). In 1989, this part of the model explained 5.8% of the total impact of socio-economic background on aspirations, whereas in 2003 it represented only 2.3%. On the other hand, the role of perceived value of education among children (model M3 in Table 3) almost doubled (from 0.115 to 0.213) explaining 19.7% of the total effect of socio-economic background on aspirations in 1989, while in 2003 it explained 51.8% of the total effects.

Conclusions

The main objective of the paper was to assess historical change in the determination of educational aspirations during the process of political, social and economic transformation in the Czech Republic, namely in the period defined by the years 1989 and 2003, when similar surveys were carried out on pupils in the last grade of elementary school. Our prior research on educational aspirations has shown that the Czech Republic is among the OECD countries in which educational aspirations are very strongly determined by socio-economic background and measured ability. This is particularly due to the high degree of stratification of the educational system at the primary and secondary level, as well as the still quite elitist nature of the tertiary system (demand highly exceeding the supply of educational opportunities; it is still a quite unitary system that is only slowly adopting binary principles, etc.).

The principal objective of this paper was to test hypotheses on historical change in the key relationships between socio-economic background, measured ability, and the perceived importance of education for life-success among parents and their children. Our analyses were directed by four major hypotheses. First of all, we hypothesized that the direct effect social origin on aspirations has diminished during the period under the study, while the effect of ability on aspirations has grown. As for the role of the perceived value of education, we assumed that due to a significant increase in economic returns on education (reported by all available studies of wage and income differentiation), there has been a general increase in the perceived importance of education for life-success and, therefore, an enormous growth in educational aspirations. As a consequence, we hypothesized that the effect of parental SES on the perceived value of education among parents and children has weakened during the transformation. Since the educational system has not changed its quite elitist structure (high degree of differentiation and vocational specificity, early tracking, the existence of dead end tracks, a high refusal rate in admissions to tertiary education, etc.), we hypothesized that despite all of these changes, the total effect of social origin on educational aspirations has not changed and has remained very strong.

These hypotheses have been transformed into a causal model subjected to testing. Statistics of model fit have proven that the structural model was an adequate formal representation of our general hypothesis on the causal relationships between variables for both years (1989, 2003). The analysis of the relevant coefficients of the structural model has shown that our hypotheses found strong support in the data.

First of all, the data proved that the perceived importance of higher education for life-success has dramatically increased between 1989 and 2003, particularly among pupils. Consequently, pupils' educational aspirations have significantly increased as well. While only 17% of ninth-graders stated they would definitely wish to attain a university/college education in 1989, it was nearly 50% in 2003.

The results from the structural model support, first of all, the assumption that during socialism, the low level of educational aspirations combined with the very limited supply of high education opportunities made education a quite an "exclusive" asset, which therefore became a part of the intergenerational transmission of advantages, both *directly* and *indirectly* through the perceived "value of education" among parents transferred to their children. In other words, under socialism higher education was in demand but, in view of its relatively low economic return, was a strategy for life-success only for families with the highest cultural status defined to a decisive degree by their education. In general, we can speak of the key role of higher education in the reproduction of the "cultural elite." This was manifested in the model by a very strong direct influence of family socio-economic status (in which income played a very small part) on the educational aspirations of children (sub-model M1), on the one hand, but also through the fact that most of the indirect effect was transferred through the importance attached to education by parents as an instrument of life-success, on the other (M2). These two segments of the model (M1 and M2) accounted for more than three-fourths of the total effect of the source family on educational aspirations of children in 1989.

As for the situation in 2003, the results support the assumption that the entire causal structure has changed significantly. The most important difference between coefficients of the model for 1989 and 2003 consists in the fact that the *direct* effect of socio-economic background has dramatically decreased (by 56%), while its total effect weakened to much lesser degree (only by 30%). An even greater change has been found in the role of the perceived importance of education for life success among children compared to the role of the "value of education" among parents. While the role of the former has dramatically increased, the latter has weakened. Also, it has to be emphasized that even though the change in coefficients pertaining to the role of ability in shaping aspirations must be interpreted with some caution (ability was not measured by identical instruments), the increase of its direct and indirect effects on aspirations is evident.

Despite all these significant changes in the structure of the causal determination of educational aspirations between 1989 and 2003, which evidences a certain "meritocratization" of the overall pattern of determination, the overall degree of determination has not really changed, i.e. it has remained very strong. What used to be, during socialism, the direct intergenerational transfer of education as a predominantly cultural asset, has become primarily the outcome of tough competition for a highly valued "economic" asset, in which children from disadvantaged social strata tend to lose largely because, under given circumstances, they do not develop adequate educational aspirations. This conclusion corresponds also to the results of our prior comparative research of the formation of educational aspirations in OECD countries.

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Tables and Figures

Diagram 1: Theoretical causal model

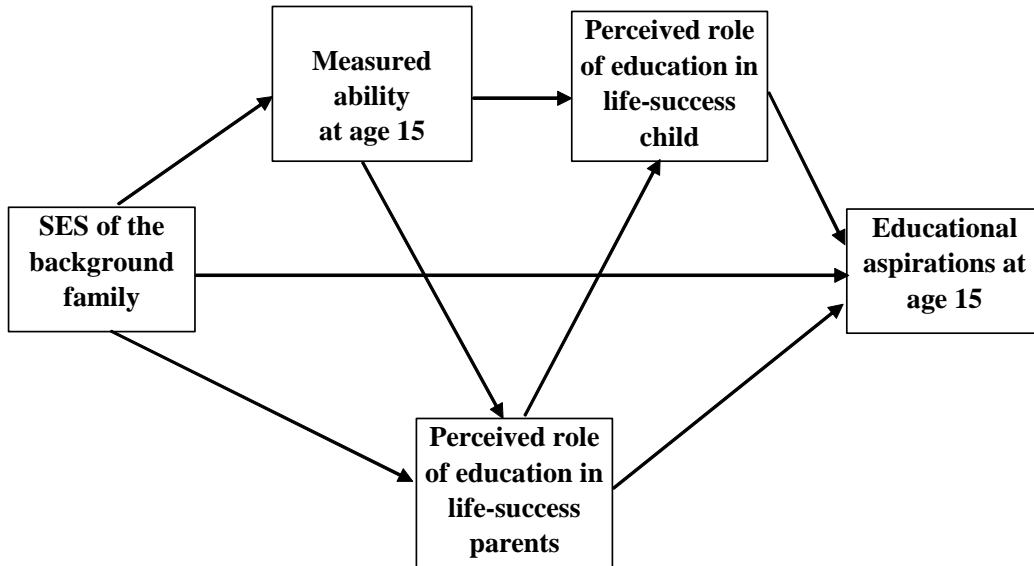


Figure 1. The perceived importance of education for life-success in the generations of parents in 1989 and 2003

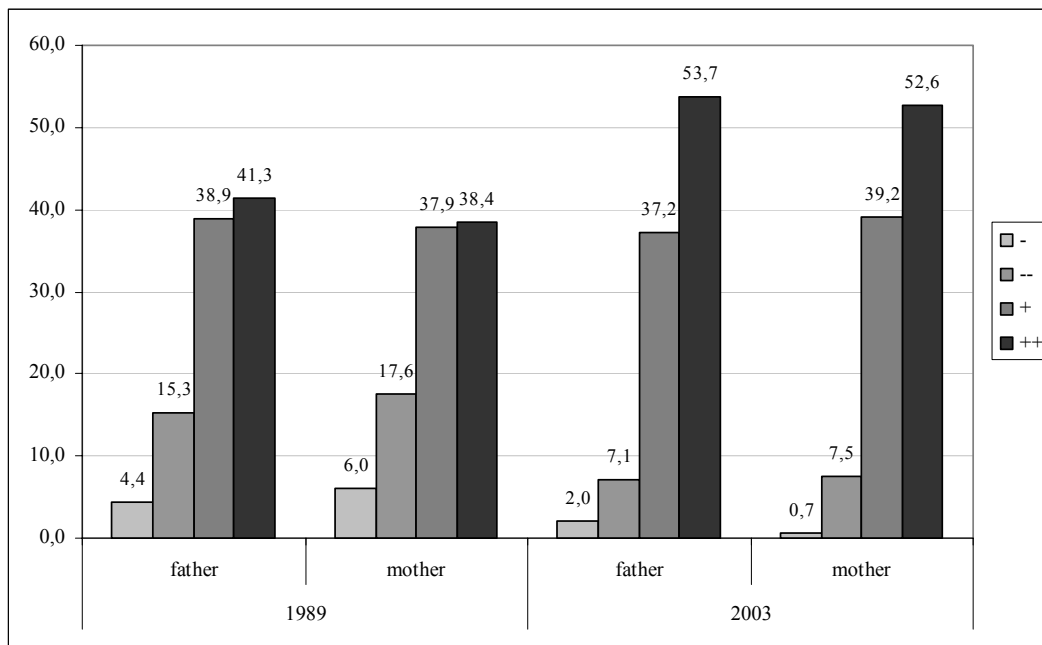


Figure 2. The perceived importance of education for life-success in the generations of children in 1989 and 2003

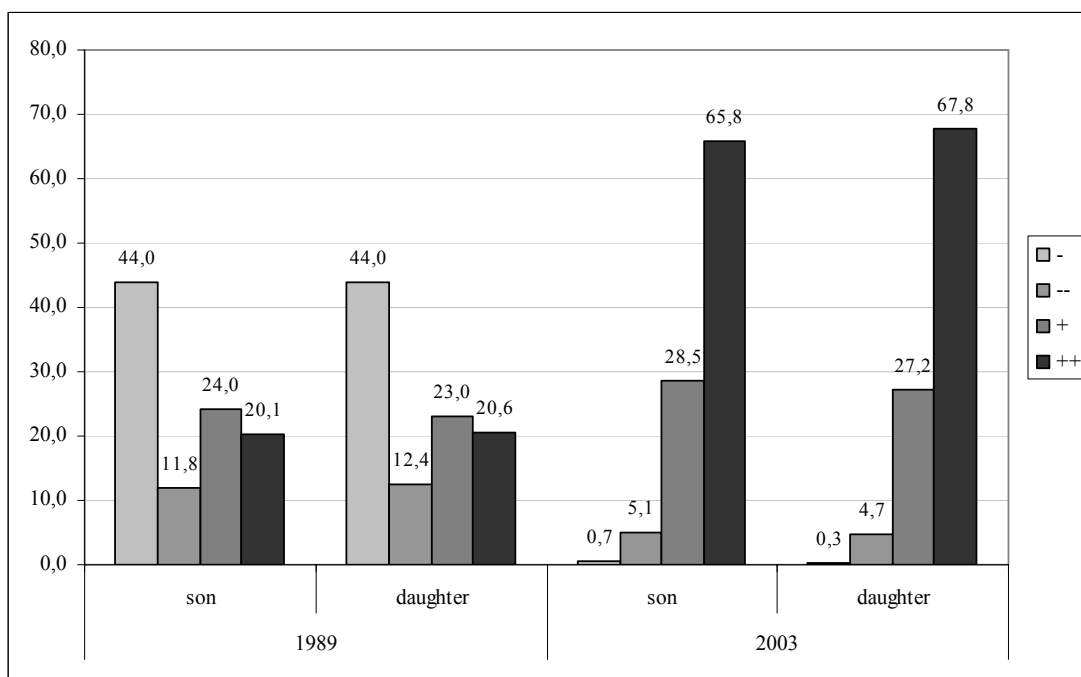


Figure 3. College aspirations in 1989 and 2003 among pupils in the last grade of elementary school.

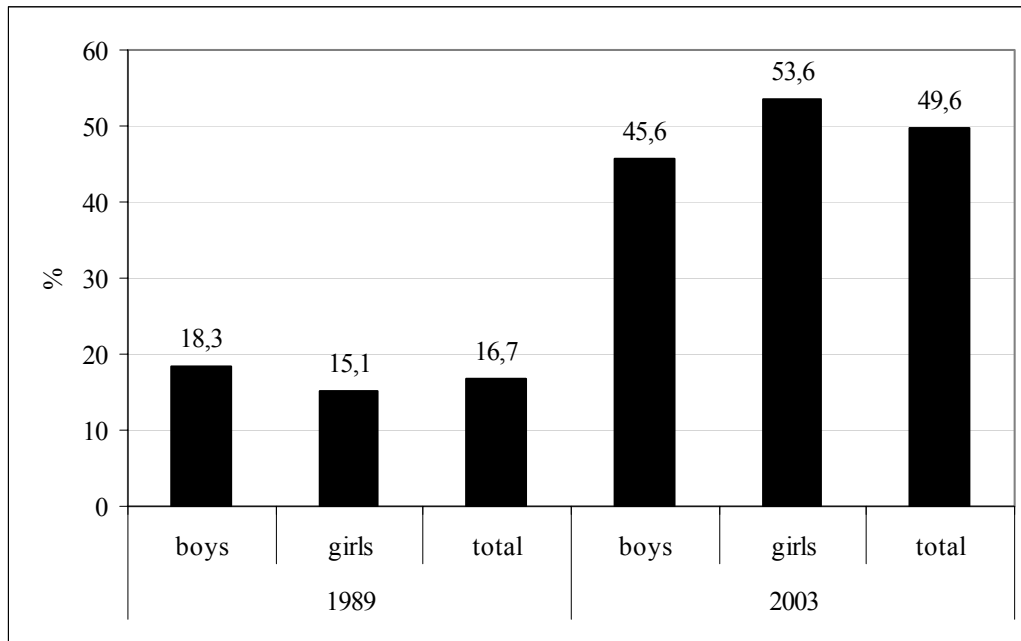


Diagram 2: Structural model

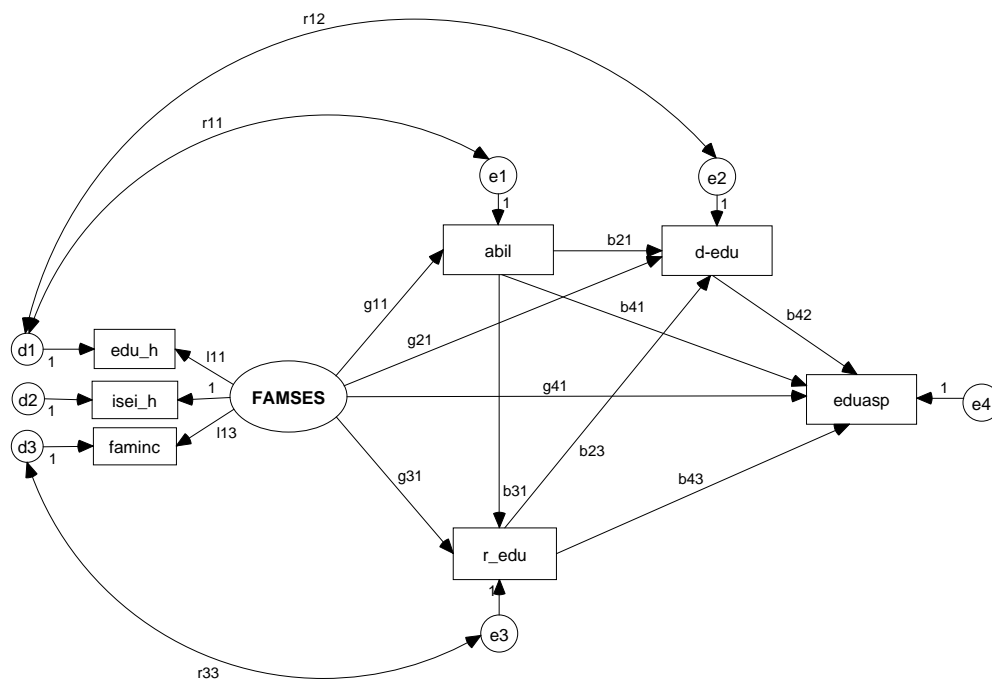


Table 1. Model parameters, effects, and standardized coefficients - 1989

Parameter	Effect	coefficient	s.e.	c.r.	p
g11	famses → abil	0.377	0.029	13.063	0.000
g31	famses → r_educ	0.227	0.027	8.417	0.000
b31	abil → r_educ	0.120	0.025	4.823	0.000
b23	r_educ → d_educ	0.076	0.024	3.123	0.006
g21	famses → d_educ	0.119	0.031	3.799	0.002
b21	abil → d_educ	0.069	0.026	2.675	0.000
l31	famses → faminc	0.128	0.025	5.090	0.000
l21	famses → iseih	0.849	n		n
l11	famses → educ_h	0.873	0.032	27.065	0.000
b42	d_educ → eduasp	0.107	0.019	5.662	0.000
b43	r_educ → eduasp	0.140	0.019	7.402	0.000
b41	abil → eduasp	0.279	0.021	13.574	0.000
g41	famses → eduasp	0.421	0.024	17.633	0.000
r11	d1 ↔ e1	-0.010	0.043	-0.234	0.859
r33	d3 ↔ e3	0.015	0.024	0.621	0.233
r12	d1 ↔ e2	-0.063	0.036	-1.743	0.081

N=1820, Chisq=5.834, df=5, p=0.371, GFI=0.999 AGFI=0.995 BIC=222.8

Table 2. Model parameters, effects, and standardized coefficients - 2003

Parameter	Effect	coefficient	s.e.	c.r.	p
g11	famses → abil	0.473	0.025	18.988	0.000
g31	famses → r_educ	0.069	0.026	2.653	0.008
b31	abil → r_educ	0.113	0.023	4.866	0.000
b23	r_educ → d_educ	0.101	0.020	5.025	0.000
g21	famses → d_educ	0.021	0.027	0.764	0.445
b21	abil → d_educ	0.029	0.024	1.196	0.232
l31	famses → faminc	0.623	0.021	29.025	0.000
l21	famses → iseih	0.797	n	n	n
l11	famses → educ_h	0.843	0.026	32.501	0.000
b42	d_educ → eduasp	0.172	0.016	10.660	0.000
b43	r_educ → eduasp	0.120	0.016	7.385	0.000
b41	abil → eduasp	0.431	0.019	22.827	0.000
g41	famses → eduasp	0.185	0.021	8.850	0.000
r11	d1 ↔ e1	0.089	0.034	2.588	0.010
r33	d3 ↔ e3	0.060	0.021	2.794	0.005
r12	d1 ↔ e2	0.073	0.028	2.592	0.010

N=2478, Chisq=14.464, df=5, p=0.013, GFI=0.998 AGFI=0.991, BIC=238.9

Table 3. Decomposition of the total effect of social background on aspirations

Part of the model and composition of the respective effect	Standardized coefficient		Proportion from the total effect of FAMSES on EDUASP	
	1989	2003	1989	2003
M1 (g_{41}) direct effect of FAMSES	0.421	0.185	72.3%	44.9%
M2 ($g_{31} * b_{43}$) + ($g_{31} * b_{23} * b_{42}$) effect of FAMSES through the perceived importance of education among parents	0.034	0.009	5.8 %	2.3%
M3 ($g_{11} * b_{41}$) + ($g_{11} * b_{21} * b_{42}$) + ($g_{11} * b_{31} * b_{43}$) + ($g_{11} * b_{31} * b_{23} * b_{43}$) effect of FAMSES through ABILITY and the perceived importance of education among children	0.115	0.213	19.7%	51.8%
Total effect	0.582	0.413	100.0 %	100.0%

Table 4. Selected parameters of the models for 1989 and 2003 estimated separately for men and women

Parameter and effect				All 1989	All 2003	Men 1989	Women 1898	Men 1989	Women 2003
b31	ISEI H	→	P-EDU	0.194	0.026	0.191	0.196	0.130	-0.084
b32	ABIL	→	P-EDU	0.143	0.138	0.166	0.123	0.103	0.184
b41	ISEI H	→	EDUASP	0.342	0.128	0.352	0.338	0.169	0.106
b42	ABIL	→	EDUASP	0.335	0.477	0.372	0.333	0.508	0.462
b43	P-EDU	→	EDUASP	0.174	0.145	0.143	0.206	0.128	0.156
r12	ISEI H	↔	ABIL	0.318	0.368	0.348	0.294	0.350	0.376
RSQ	EDUASP			0.385	0.334	0.424	0.390	0.389	0.307
Total effect	ISEI H	→	EDUASP	0.376	0.132	0.380	0.378	0.185	0.093
Total effect	ABIL	→	EDUASP	0.360	0.497	0.396	0.358	0.521	0.491

Appendix – Wording of items in the questionnaire and distributions

Table A1: Items on life-success strategies - 1989

a) Parents „ *What do you believe your child should be able to do or have in order to be successful in his/her life?*“ (-- definitely not, - rather not + rather yes, ++ definitely yes)

Variable	Wording	--	-	+	++
EDUC	The highest possible education	5,5	16,3	38,5	39,6
LANG	Knowledge of languages	5,8	15,2	42,9	36,0
ASSERT	To know how to assert oneself	1,5	3,7	44,8	36,0
TIES	Influential acquaintances	25,3	34,6	31,1	9,0
WORK	To be capable of working a lot	1,4	4,9	44,1	49,6
POLIT	Political engagement	10,5	30,9	46,4	12,3
MONEY	To know how to make money	4,0	12,9	54,3	28,8
CONFORM	To know how to be inconspicuous	27,5	40,2	23,7	8,7
SELSUF	To be able to do and fix everything onself	3,7	12,3	41,5	42,5
OPINION	To have one's own convictions	1,0	2,0	15,3	81,7

b) Children „*What should a person do to be successful in life?*“

(--totally unimportant, - not very important, + quite important, ++ very important)

Variable	Wording	--	-	+	++
EDUC	To achieve the highest possible education	44,0	12,1	23,5	20,4
COMPET	To know something better than others	62,0	11,8	12,5	13,7
CONFORM	To get along with everyone	34,5	20,9	17,1	27,5
MONEY	To know where and how to make enough money	95,5	2,7	1,2	0,6
TIES	To have the right ties and acquaintances	60,5	18,1	16,0	5,4
WORK	To work a lot and well	18,5	24,1	26,6	30,7
POLIT	To be politically engaged	85,5	10,2	2,8	1,5

Table A2: Items on life-success strategies - 2003 (distributions after re-weighting to the file composition of the 1989 survey)

a) Parents „*What do you believe is important nowadays for a young person to get ahead in life, to be successful?*” (--totally unimportant., - not very important, + quite important, ++ very important)

Variable	Wording of the item	--	-	+	++
EDUC	To achieve the highest possible education	1,2	7,4	38,3	53,1
LANG	To know as many languages as possible	0,5	6,2	37,4	55,9
ASSERT	To know how to assert oneself in every situation	1,2	15,1	55,0	28,7
TIES	To have as many influential acquaintances as possible	10,9	42,4	37,1	9,5
WORKE	To be willing to dedicate more time to work than others	1,5	17,2	59,5	21,8
POLIT	To be active in politics	41,8	47,5	8,4	2,3
MONEY	To know how to make a lot of money	2,8	24,6	53,3	19,2
CONFROM	To be inconspicuous and to not be very provocative	30,8	43,6	20,5	5,0
SELSUF	To be able to do as many things as possible oneself	4,4	38,3	42,1	25,3
OPINION	To have one's own opinion and convictions	0,3	2,1	25,8	71,7

b) Children „*How important do you believe the following items to be for a young person to get ahead in life, to be successful?*“

(--totally unimportant, - not very important, + quite important, ++ very important)

Variable	Wording of the item	--	-	+	++
EDUC	To achieve the highest possible education	0,5	4,9	28,3	66,3
LANG	To know as many languages as possible	1,1	8,0	36,1	54,7
ASSERT	To know how to assert oneself in every situation	0,4	7,1	47,3	45,1
TIES	To have as many influential acquaintances as possible	8,6	36,3	37,0	18,1
WORKE	To be willing to dedicate more time to work than others	1,2	17,1	54,9	26,8
POLIT	To be active in politics	23,2	54,6	17,8	4,4
MONEY	To know how to make a lot of money	1,1	16,1	51,2	31,6
CONFROM	To be inconspicuous and to not be very provocative	10,5	43,3	35,9	10,2
SELSUF	To be able to do as many things as possible oneself	0,8	12,5	45,6	41,1
OPINION	To have one's own opinion and convictions	0,3	2,9	32,2	64,7

Table A3: Correlation matrices 1989 and 2003**1989**

N=2478	EDU_H	ISEI_H	FAMINC	ABIL	R_EDU	D_EDU	EDUASP
EDU_H	1,000	0,741	0,103	0,325	0,229	0,114	0,506
ISEI_H	0,741	1,000	0,117	0,320	0,240	0,140	0,491
FAMINC	0,103	0,117	1,000	0,063	0,050	0,057	0,076
ABIL	0,325	0,320	0,063	1,000	0,206	0,130	0,480
R_EDU	0,229	0,240	0,050	0,206	1,000	0,124	0,325
D-EDU	0,114	0,140	0,057	0,130	0,124	1,000	0,230
EDUASP	0,506	0,491	0,076	0,480	0,325	0,230	1,000

2003

N=1820	EDU_H	ISEI_H	FAMINC	ABIL	R_EDU	D_EDU	EDUASP
EDU_H	1,000	0,675	0,519	0,440	0,123	0,082	0,373
ISEI_H	0,675	1,000	0,497	0,366	0,076	0,043	0,314
FAMINC	0,519	0,497	1,000	0,318	0,125	0,019	0,291
ABIL	0,440	0,366	0,318	1,000	0,147	0,054	0,546
R_EDU	0,123	0,076	0,125	0,147	1,000	0,110	0,225
D-EDU	0,082	0,043	0,019	0,054	0,110	1,000	0,218
EDUASP	0,373	0,314	0,291	0,546	0,225	0,218	1,000