Non-cognitive skills and prestige education

An explorative study of how non-cognitive skills affect the association between social class of origin and selection into prestigious university education in Sweden

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Abstract

With the expansion of higher education in recent decades, exclusive academic qualifications have become the prominent way in which the status hierarchy of education is preserved. Much of the previous research explaining social class differences in educational attainment have focused on cognitive ability but largely overlooked the importance of non-cognitive skills for enrolling in more prestigious educational fields. Using unique longitudinal data, the focus of this thesis is on childhood non-cognitive skills to explore their role for understanding the association between social class of origin and selection into prestigious university education in Sweden. The results confirm class differences in attending prestige education, but also show that non-cognitive skills cannot explain much of the variation in educational attainment between or within classes. More research is needed in order to fully understand the large class gap in prestigious academic outcomes in Sweden.

Keywords

Prestige education, educational field, non-cognitive skills, social class of origin
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Introduction

There is a large consensus in the literature that socioeconomic background, measured as parental social class or parental education, is the most important determinant for academic achievements (e.g. Breen and Goldthorpe 1997; Erikson and Jonsson 1996; Lucas 2001). At the same time, research also shows that individuals with the same level of education often experience large differences in labor market outcomes (for a review, see Gerber and Cheung 2008), and little is known about the importance of social class background in the transition to certain educational fields (c.f. Bihagen, Nermo and Stern 2013). The expansion of higher education in recent decades means that having a high academic degree only captures some parts of enjoying a good education, and that selective educational destinations have become the prominent way in which the status hierarchy of education is preserved (Alon 2009). Thus, when studying class differences in academic success, field of study may be better than the level of education as indicator of educational achievement (van de Werfhorst 2002).

Sociological explanations of inequality in educational achievement often proceed from two theoretical perspectives: cultural reproduction theory and rational choice theory. According to the cultural reproduction theory, children’s educational choices are subconscious and largely based on parental transmission of cultural capital, which gives privileged children the resources and dispositions necessary to complete their education successfully (Bourdieu 1984). The rational choice theories instead claim that the choice of education is a result of a child’s rational consideration of the costs and benefits with different academic pathways (Breen and Goldthorpe 1997). Here, the distinction between primary and secondary effects explains the class differences in educational attainment as a consequence of deliberate educational choices made by students, based on both social class background and school performance (Boudon 1974). In a similar tradition, the theory of Effectively Maintained Inequality (EMI) assumes that well-educated parents strive to get their children to attend prestigious universities in order to assert future advantages (Lucas 2001).

Being educated is usually associated with having both general and specific knowledge, but it also implies being endowed with certain skills and traits. In the last couple of years, the significance of non-cognitive skills has received renewed attention, mostly in the fields of psychology and economics (c.f. Garcia 2014; O’Connor and Paunonen 2007). Non-cognitive
Skills include a wide variety of behavioral, social and emotional abilities such as critical thinking, problem solving, perseverance, creativity, and self-discipline (Ackerman, Chamorro-Premuzic and Furnham 2011). Despite their conceivable importance in educational settings, the sociology of education in general and social stratification research in particular have left non-cognitive skills fairly unnoticed (for exceptions, see e.g. Farkas 2003). Especially little is known about the role of non-cognitive skills in the intergenerational reproduction of educational attainment, and more research is needed to determine the part played by individual characteristics that might be structured by class and at the same time influence academic achievements and aspirations towards more prestigious fields. This thesis sets out to bridge traditionally sociological perspectives on educational reproduction with economic and psychological research on the importance of non-cognitive skills, focusing on the Swedish context.

The Swedish educational system is quite special in the sense that there are multiple pathways to higher education and enrolling in university is tuition free, which in turn makes it relatively open and accessible (Breen and Jonsson 2007). Moreover, educational mobility is higher in Sweden than in other countries, and class inequality in educational attainment in terms of level of education is declining (Breen et al. 2009; Erikson and Jonsson 1996). Despite this, equality of opportunity is not increasing, mainly because university degrees become less valued with the number of people obtaining them (Breen et al. 2009). Actually, there are still class differences in the participation in higher education in Sweden (e.g. Hällsten 2010; Nordlander 2015). In line with Boudon’s theory of secondary effects, children from working class backgrounds tend to need higher grades in order to advance to higher levels of education (Erikson and Jonsson 1996; Nordlander 2015). Also, working class students are more inclined to choose shorter or bigger university programs located close to their family home (Hällsten 2010), and they more often choose educational programs similar to their parent’s field of education (Dryler 1998). Thus, the intergenerational reproduction of education in Sweden is essentially a transmission of subject interests (ibid.), which together with the elite tracks in Swedish universities along certain educational fields contribute to a horizontal stratification in higher education (Hällsten 2010).

In this thesis, the aim is to explore whether non-cognitive skills add to our understanding of educational stratification. In the exploration, data is derived from the Swedish Level-of-Living Survey (LNU), where respondents in the so-called Child-LNU 2000 were followed-up as young adults in the regular LNU 2010. This representative sample of Swedish men and women include
first-hand information on a variety of social, cultural and behavioral factors and enables detailed analyses of the associations between social class of origin, non-cognitive skills in adolescence, and educational decisions in early adulthood. Non-cognitive skills are measured with five different items available in the Child-LNU 2000 adopted from the scale of Ouvinen-Birgerstam (1985). The included items cover children’s attitudes and behaviors that translate into skills hypothesized to be important for children’s school progress. The five skills studied in this thesis are work-capacity, temper-control, assertiveness, carefreeness, and restlessness. Thus, this thesis explores the extent to which the association between social class of origin and prestigious educational choice is mediated by non-cognitive skills in adolescence. The contribution is two-fold; data from adolescence on the five non-cognitive skills pre-dates attainment of higher education, contributing a longitudinal research design to a field mostly characterized by correlation studies (O’Connor and Paunonen 2007). Also, the data includes both genders, whereas most Swedish studies on non-cognitive skills use data from the Military Enlistment, and therefore only include men (e.g. Mood, Jonsson and Bihagen 2012).

Based on previous research, the argument presented here is that non-cognitive skills are likely to work as mediators between class origin and educational attainment. Thus, well-educated parents in higher social classes are more likely than other parents to encourage their children to develop the non-cognitive skills necessary for educational success. In the light of these issues, my research question is if the social class variations in prestigious university education can be partly explained by non-cognitive skills.

The thesis begins with a review of theories and previous empirical research on the association between social class background and educational attainment. This is followed by an evaluation of the role of non-cognitive skills in this association. The next part presents the data and methods used. The results are shown in the following section. Finally, the most important results are discussed in relation to theory and previous research.

Theories and empirical research

Human capital theory is central in educational research, seeing educational attainment as a rational investment in human capital profitable only if the expected return is greater than the cost of achieving it (Becker 1993). The human capital, including e.g. knowledge and skills,
human because it cannot – like material assets – be separated from the individual. Parental investments in children’s human capital tend to vary with social class, with privileged children often possessing more human capital than less privileged children. Although the human capital theory is very influential, most sociological studies on the intergenerational reproduction of education draw on two other theoretical perspectives: cultural reproduction theory and rational choice theory. Both of these perspectives provide valuable tools in understanding the mechanisms at work between children’s class origins and destinations. According to the cultural reproduction theory, educational choices are subconscious, largely based on an intergenerational transmission of cultural capital, causing children to uneducated parents to experience constraints in the school environment (Bourdieu 1984). In the rational choice tradition, the choice of education is instead seen as a result of a rational consideration based on the costs and benefits with different academic pathways (Breen and Goldthorpe 1997). The following two sections focuses on how these theories can be used to explain class differences in educational attainment.

**Cultural reproduction theories**

Cultural reproduction theory was first developed by Bourdieu and Passeron (1990 [1977]), who argued that children to well-educated parents are better prepared for entering higher education. Here, there are mainly two mechanisms at work: cultural capital and habitus. The cultural capital gives privileged children better knowledge of the academic culture and how to act within it, contributing to higher academic achievement. Meanwhile, habitus gives them the accurate dispositions and perceptions necessary for educational success. The cultural capital only exists and is given its certain value in a specific field – in this case the school – where the rules of that field determine its value (Bourdieu 1984). The field exists outside of the individual, while habitus exists inside people’s minds. Bourdieu explains habitus as an internalized class structure, which determines the educational choices of individuals and in turn reproduce the social class structure in society. Because of this, people brought up in the same environments often share distinct features, more easily socialize with each other and eventually end up in similar class positions (Bourdieu 1984).

Bourdieu (1984) states that social mobility for the lower classes is best acquired through education. However, moving upward socially requires being familiar with the dominant culture in a specific field, especially for school children. Children from more privileged class backgrounds are automatically familiar with the dominant culture in school, and with their
extracurricular knowledge and appropriate taste they are rewarded by teachers and peers and experience an easier journey through the educational system (Bourdieu 1984). Children from less privileged backgrounds who lack this knowledge feel alienated in the school environment and have a harder time succeeding in higher education. In this way, class differences in educational attainment are reproduced: in part through the cultural capital contributing to higher academic achievement, and partly by habitus leading to different class-based approaches to education.

A prominent version of this theory is presented by Swidler (1986), viewing culture as a “tool kit” that individuals can use for acting in a strategic way, on the basis of their habitus. In school, culture can be used as a set of skills and habits. Thus, culture produces strategic academic actions, rather than being a preference for a certain educational pathway. Low-class children are not disregarding higher education because they do not want it, but because they are not simply aware of the actions required for pursuing higher academic goals. Their cultural tool kit rather guides them to follow the same occupational paths as their parents. The lower-class parents’ lack of the knowledge needed for educational success of their children is essentially a lack of appropriate culture (Swidler 1986).

Today, a number of studies argue that distinctions within levels of education might be more important for labor market success than the educational level itself (Breen et al. 2009; Lucas 2001; van de Werfhorst 2002; Thomsen 2015), while only a few studies have focused on the association between socioeconomic background and enrollment in elite education. A common finding is that privileged children are more likely to choose beneficial programs in selective universities (Davies and Guppy 1997; Zarifa 2012), and that sons with well-educated fathers are more likely to attend prestigious universities (Lee and Brinton 1996). In Denmark, students with less educated parents tend to choose applied-oriented programs, while students with well-educated parents are more likely to choose liberal arts programs in prestigious universities (Thomsen 2015), in line with the theory of Effectively Maintained Inequality, EMI (Lucas 2001). To preserve their advantages in the labor market, German children with well-educated parents generally choose to attend the more prestigious traditional universities (Blossfeld et al. 2015).
Rational choice theories

Boudon’s (1974) distinction between primary and secondary effects explains why there are class differences in educational attainment even among children performing equally good in school. Primary effects of class refer to the fact that students from more privileged backgrounds get better grades than students from less privileged backgrounds. However, regardless of previous school performance, privileged students tend to advance to higher education because of the rational educational choices they make, called secondary effects. The different educational choices students make then contributes to the reproduction of education and social class. Thus, secondary effects of social class origins is a key concept in rational choice theory (c.f. Erikson and Jonsson 1996).

In this tradition, Breen and Goldthorpe (1997) developed the Rational Action Theory (RAT), wherein rational educational choices are based on the premise that individuals strive to make decisions that maximize utility. Thus, children assess the advantages and disadvantages of different educational choices, and make decisions based on this assessment. Three different mechanisms are in motion in this class-based decision-making: (i) the perceived probability of succeeding with the education; (ii) the direct costs and the opportunity costs of the education; and (iii) the perceived benefits of the education. According to this model, the benefits of education and the probability of educational success are assessed in relation to the relative cost of studying. Because children from lower classes generally experience higher costs and restraints with higher education, they must experience even higher benefits or probabilities of success in higher education than more privileged children. This is seldom the case, why lower class children disregard higher education and adapt their aspirations to a career where the rational calculation add up.

The perceived benefits of education also vary with parental education. According to the Relative Risk Aversion theory (RRA), the desire to end up at least in the same social class as one’s parents make children use education as a means to ensure their own class position (Goldthorpe 1996). Generally, the cost of downward mobility is higher than the benefits of upward mobility (Erikson and Jonsson 1996). Because children aspire to reach the position of the parents, they struggle more with avoiding downward mobility than trying to reach top positions. This implies that children with well-educated parents tend to experience greater benefits with quality education than children with less educated parents. Correspondingly,
children with low-educated parents refrain from higher education since they reach their educational threshold earlier in the academic process (ibid.).

A later branch of the rational choice theory is the hypothesis of Maximally Maintained Inequality (MMI) (Raftery and Hout 1993), which assumes that educational inequality persists as long as the privileged groups are not saturated at a given academic transition. Thus, the expansion of the educational system only leads to an equalization of opportunity when all children to well-educated parents reach a certain academic level. The hypothesis of Effectively Maintained Inequality (EMI) presented by Lucas (2001) is a development of MMI, also taking into account the competition between families with different socioeconomic positions in getting their children into the top educational fields. With more and more people attaining higher education, social class origins are important for predicting not only the child’s educational level but also their field of education. Thus, as a secondary effect, socioeconomically privileged students choose more prestigious programs to assert future advantages, leading to a horizontal segregation of education by social class. In this way, despite the educational expansion, advantaged social groups manage to control admission to prestigious university programs (Thomsen 2015).

Empirical research on social stratification confirm that parental education is an important measure of socioeconomic background (for a review, see Blossfeld et al. 2015). Well-educated parents help their children (i) with school work, (ii) to navigate through the school system, and (iii) by promoting their children’s educational aspirations (Erikson and Jonsson 1996; Rudolphi 2014). But social class is also important, as working-class parents tend to persuade their children to respect the status of the teacher and not actively ask for help, while middle-class parents instead encourage their children to do so (Calarco 2014). Thus, middle-class students meet their teachers’ expectations and enjoy the benefits, including higher grades (Jennings and DiPrete 2010). Research also shows that the field of study choice is dependent on social background and affects opportunities later in life (van de Werfhorst 2002). This choice is often based on the notion of at least remaining in the same occupational class as one’s parents: in line with RAT, van de Werfhorst (2002) show that children from service-class origins often choose more prestigious educational fields such as medicine and law, while working-class children tend to choose more technical fields of study.
The role of non-cognitive skills

Researchers in sociology, psychology and economics has for a long time discussed possible factors that influence students’ school performance, and in recent years it has become increasingly common for studies in these fields to focus on students’ non-cognitive skills and the impact they have on educational success (for a review, see Ackerman et al. 2011). Non-cognitive skills are defined as behavioral, social and emotional abilities. Cognitive skills instead relate to the individual’s intelligence and are often measured by traditional IQ tests (Garcia 2014). Cognitive skills are more widely studied in educational research, since they have a more obvious connection to educational performance and are also easier to operationalize and measure (Farkas 2003; Heckman and Rubinstein 2001). The impact of non-cognitive skills on academic achievement has not received as much attention, in part because they are somewhat more difficult to measure due to a lack of a common classification (Garcia 2014). The only common denominator in this line of research is that the non-cognitive skills include abilities not normally captured by cognitive traits. Even so, non-cognitive skills may as well include cognitive content, and acquiring these skills is a dual process, i.e. by developing non-cognitively children in turn develop cognitively (ibid.). Improving non-cognitive skills in young ages may also help children succeed in school, and it is likely that the variability in these abilities enables an effective distinction between hardworking and less motivated students (Ackerman et al. 2011).

In school, non-cognitive skills are important for knowing how to behave in the right way when interacting with teachers and other students (Ermisch et al. 2012). Students with social and behavioral skills gain support from teachers and parents, thereby developing their cognitive skills and subsequently getting rewarded in future earnings and jobs, since employers also value these traits. Thus, there is a cumulative advantage with having the desirable skills already in elementary school, as they often result in large gaps in school performance in later schooling and are important for both employment and earnings (Farkas 2003). Because children of different social origin receive different investments in non-cognitive skills, they have unequal chances of reaching certain educational and occupational goals (Ermisch et al. 2012).

Most studies analyzing the effect of non-cognitive skills on academic achievement have focused on outcomes such as grades or level of educational attainment (Ackerman et al. 2011). When studying the choice of educational field of students, the literature suggests that non-cognitive
skills, such as conscientiousness, are even more influential than traits related to cognitive ability (ibid.).

However, it is still quite unclear what role non-cognitive skills play in the intergenerational reproduction of social class. Some studies find evidence for an intergenerational transmission of non-cognitive skills such as work-capacity and external locus of control (Anger 2012) and coping with stress and emotional stability (Grönqvist, Öckert and Vlachos 2010). Other studies find social class differences in non-cognitive skills such as social maturity (Bihagen et al. 2013) and passivity or anxiety (Kokko, Bergman and Pulkkinen 2003), and that high parental education is associated with both assertiveness and persistence (Lundborg, Nilsson and Rooth 2014). Also, children of different social origin are treated differently in the school on the basis of non-cognitive skills (Bowles and Gintis 1976). Generally, the non-cognitive skills rewarded by teachers are those that require obedience from working-class children and creativity by children of middle-class and upper-class origin (ibid.).

Many Swedish studies on non-cognitive skills are based on data from the Military Enlistment and only include father-son correlations, thereby excluding the other half of the population (see e.g., Bihagen et al. 2013; Lundborg et al. 2014; Mood et al. 2012). The findings are also mixed. Some find that the intergenerational transmission of education is mostly affected by the child’s cognitive abilities and that non-cognitive traits are of little importance in this transmission (Mood et al. 2012). Others show that maternal education is positively associated with non-cognitive ability of the sons (Lundborg et al. 2014). Finally, non-cognitive skills of males are found to be related to elite destinations in the Swedish labor market, and this relation increases over time (Bihagen et al. 2013).

Using other types of data non-cognitive skills such as work-capacity and sociability are good predictors of Swedish girls’ school grades in upper secondary school (Rosander and Bäckström 2012). Another finding suggests that low parental education is correlated with low rates of self-esteem and a low educational level in adulthood for Swedish children (Kokko et al. 2003). To my knowledge, this thesis is the first Swedish study exploring a nationally representative sample to explore the role of non-cognitive skills in the association between socio-economic background and enrollment in prestigious educational fields at university.
Summary and hypotheses

The above reported theories and previous research indicates that there is a social selection process operating in the transition to (prestigious) university education. It is reasonable to assume that both parents and children invest in education in order to assert future well-being, and that this investment varies by social class. Both cultural reproduction theory and rational choice theory (cf. Nordlander 2015), suggest that working class children are more likely to face a harder time succeeding in school, i.e. the absence of rational parental investments in children’s cultural capital and non-cognitive skills might reduce academic success. The thesis, however, aims to explore the secondary class effects, how children from differing class background end up choosing different educational pathways, in terms of prestige. If one mechanism through which class background reproduce itself is through the fostering of non-cognitive abilities; abilities regarding individual’s perceived capacity to work hard, control ones temper, assert ones will, not worry too much, and maintaining focus, abilities that fosters aspirations and self-confidence, it is then plausible that non-cognitive skills matter for the transition to prestigious educational fields.

The purpose of this thesis, then, is to explore whether non-cognitive skills in adolescence affect class inequality in the transition to prestigious educational fields. Based on theories of intergenerational reproduction of education and the gaps in previous research on non-cognitive skills and education, the following four hypotheses will be tested:

1. a) Individuals scoring high on work-capacity, temper-control, assertiveness, and carefreeness are more likely to attend prestigious educational fields.
1. b) Individuals scoring high on restlessness are less likely to attend prestigious educational fields.
2. Individuals from upper white collar origins score higher on work-capacity, temper-control, assertiveness, and carefreeness and lower on restlessness than individuals from blue collar origins.
3. Individuals from upper white collar origins are more likely to attend prestigious educational fields than individuals from blue collar origins and the variance between classes widens when accounting for differences in non-cognitive skills.
4. Non-cognitive skills can partly account for the variation within social classes in the transition to prestigious educational fields.
Thus, the difference in transition between individuals with different non-cognitive skills will be studied first. This is followed by an examination of to what extent non-cognitive skills vary by social class of origin. The next test considers if the potential class differences in attending prestigious educational fields can be partly explained by non-cognitive skills. Finally, the effect of non-cognitive skills on prestigious education will be examined within social classes, and whether non-cognitive skills is more important for explaining variation in the transition to prestigious educational fields among individuals from blue collar origin or upper white collar origin, respectively.

Data and research design

Data and sample

Data is derived from the Swedish Level-of-Living Survey (LNU), conducted by the Swedish Institute for Social Research (SOFI) at Stockholm University. LNU contains longitudinal data on a representative sample of the Swedish population, and the analyses are based on the so called Child-LNU which was performed in connection with the regular LNU 2000. Child-LNU include interviews of the regular LNU-respondents’ children aged 10 to 18, i.e. born between 1982 and 1990. The children answered questions regarding their social and psychological circumstances, and the method used in collecting the data can be considered successful in the sense that the internal non-response is very low.\(^1\) One potential problem with Child-LNU is that it includes all children aged 10-18 in the household, which means that the units of analysis are not fully independent. Thus, some of the respondents are siblings and therefore share information on family and social background. To handle this clustering problem, clustered robust standard errors are used in the regression models (Angrist and Pischke 2009: 233-234). Using robust standard errors also adjusts for possible heteroscedasticity.

\(^1\) The questions were played on a tape recorder without the parents present, which secures a high confidentiality. However, the decision to participate in the study was taken by the parents. The data is anonymized in order to protect the identity of the respondents.
The response rate in the regular LNU 2000 was 76 %. Of the 1529 children who were selected to participate in the Child-LNU 2000, a total of 1304 children were interviewed. The children were subsequently followed up ten years later, as respondents in the regular LNU 2010. The full sample of respondents participating in both surveys consists of 808 respondents, which gives a final response rate of 53 %. Further, because of item non-response, 31 more respondents have been excluded. The final sample thus consists of 777 Swedish men and women. An omission analysis in which the sample of respondents of this study has been compared with the total sample detected no systematic differences in terms of education, social class, sex or age.2

The sample size is relatively small which increase the risk of type II error, i.e. accepting a false null hypothesis. This means that there is a risk of concluding that there is no correlation between the explanatory variables and the outcome variable when there actually is a correlation. However, robust standard errors normally require stronger correlations for achieving significant results, which means that with significant results based on a small sample, one can assume that there is a strong correlation between the variables. Even so, the presented findings should be interpreted with some caution.

Variables

Dependent variables

The dependent variable is enrollment in prestigious university education. This information is provided by the respondents themselves as an open question in the follow-up in 2010. What constitutes a prestige education differs in the literature, but a common ground is to focus on the education needed for getting a high prestige jobs (Bihagen et al. 2013; Reimer and Pollak 2010). A well tested categorization of prestigious educational fields is the so called STEM-schema (Science, Technology, Engineering and Mathematics), which is based on the occupations that require specific education, certain certificates or licenses, and pay the best (Gonzalez and Kuenzi 2012). However, STEM is based on the American labor market, and its application on the Swedish labor market may not be equally fruitful due to structural differences between the United States and Sweden.

2 Analysis available from the author upon request.
A closer and more similar labor market is that of Germany, where Reimer and Pollak (2010) in their study make a categorization of five different fields of study necessary for reaching service class positions, including economics, social sciences, medical sciences and law, engineering and natural sciences. Correspondingly, Bihagen et al. (2013) empirically define the fields of economics, law and engineering across 13 different universities as the most important educational tracks for reaching elite positions in the Swedish labor market. These definitions are in line with the categorizations made by the Swedish National Agency for Higher Education, identifying law and engineering as prestige fields (HSV 2008). Because of the small sample used in this thesis, it is not possible to sort out programs at specific universities. Thus, the definition of attending a prestige education used here is that the respondent has started a program at any university in the fields of medicine, law, economics or engineering.

**Independent variables**

*Social class of origin* is encoded using the Socio-economic classification (SEI) of both parent’s professions following the dominance approach, which means that the household class is represented by the parent with the highest social class position (Erikson 1984). SEI is based on the individual’s position in the labor market, and gathers professions in categories where the workers are in similar situations at the job. This information is collected from the parent’s own information given in LNU 2000. Four class categories are separated, and for the sake of simplicity, the social classes of origin will hereinafter be referred to as blue collar (reference category), lower white collar, intermediate white collar and upper white collar. Children of entrepreneurs and farmers are excluded from the analysis due to the fact that they are too few and also constitute a heterogeneous category ranging from self-employed to large business owners.

*Non-cognitive skills* are here measured with five different variables adopted from the scale of Ouvinen-Birgerstam (1985). The full scale strongly relates to self-esteem and is constructed out of different subscales. The items included here are based on the subscale that was originally meant to capture psychological well-being (Ouvinen-Birgerstam 1985). The questions are, however, largely on the children’s behaviors and manners both in and outside of school.

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3 The four categories are: (i) skilled and unskilled workers (SEI 11-22); (ii) assistant non-manual employees (SEI 33-36); (iii) intermediate non-manual employees (SEI 45-46); and (iv) professionals, higher civil servants and executives (SEI 56-60).
Therefore, the items could be argued to also measure non-cognitive skills important for children’s school progress. The items are based on the self-assessment scale “I think I am”. Thus, the children were asked to indicate, on a four-point Likert scale, how well they think the different descriptions apply to themselves and their own situation. One additional advantage with these questions is that they are designed specifically to be answered by children between 7 and 16 years of age. The following variables are included:

*Work-capacity* is measured with the item “I can cope with a lot”. The idea here is that individuals that see themselves as enduring and energetic enough to cope with many tasks are likely to be better at coping with difficult tasks in school and to keep on working hard to reach their educational goals despite any adversity.

*Temper-control* is measured with the item “I rarely cause trouble”. People that are calm and able to control their own emotions are more likely to be able to focus on their schoolwork and to also be more appreciated by teachers.

*Assertiveness* is measured with the item “I dare say what I think”. Individuals that express their own opinion and have a critical and independent approach will likely learn more in school and feel more at home in the academic field.

*Carefreeness* is measured with the item “I have no worries”. People that are satisfied with their situation and have a more positive outlook on life will likely have better possibilities to put more effort on succeeding in school and experience an easier journey through the educational system.

*Restlessness* is measured with the question “I find it hard to sit still and concentrate”. Individuals that are unable to focus on a given task are less likely to thrive in academia and to continue studying at higher educational levels.

Individuals answering that the description is “Exactly right” or “About right” are coded as scoring high on each of the above non-cognitive skills. Of course, and as mentioned previously there are many important aspects of non-cognitive skills and it is not possible to capture all of these aspects in only five variables. Because of this, I present my results as exploratory, and model the five different factors as estimates of non-cognitive skills that might be important for children’s academic prospects. Ideal would be to use a wider array of measures, but these are the most appropriate items that are available in the Child-LNU 2000.

The fact that the non-cognitive skills are self-reported in Child-LNU 2000 might cause validity problems, since it is possible that the children either exaggerate or downplay certain
circumstances in order to modify the picture of themselves. Also, children’s reporting of these issues is often based on a shorter time perspective compared to parental reporting (Östberg 2001). This in turn means that I might underestimate the effect of non-cognitive skills on class differences in attending a prestigious educational field. However, since children are the main informants of their own life, information reported by the children themselves is the most valid (c.f. Nordlander 2015).

High parental education is a dummy variable that distinguishes between having at least one parent with a university degree and not having any parent with a university degree, with the latter being the reference category.

Age is divided into three age categories: 20-22, 23-25 and 26-28, and the youngest age group is used as the reference category. There is reason to suspect that there are class differences in university starting age, with individuals having well-educated parents being more likely to start studying at an early age in comparison with individuals with less-educated parents. To control for this, interactions between social class*age and parental education*age was included in the analysis. However, since they were insignificant, these controls were excluded in the final analysis.

Also, controls for gender are added with a dummy separating between men and women, with women as the reference category.

The thesis has some delimitations in the sense that it focuses only on individuals’ class origins, although other structural conditions might also be of importance for educational outcomes, such as whether the parents or the children have immigrated (Jonsson and Rudolphi 2011), or live in an urban or rural area (Böhlmark and Holmlund 2011) or whether the parents live together (Gähler and Palmtag 2014). However, also controlling for these factors is beyond the scope of this study and thus not of interest here.

**Descriptive statistics**

In Table 1 below, descriptive statistics are presented for all variables included in the analysis. Almost 12 percent of all respondents in the sample have attended a prestigious university education. Individuals coming from a blue collar background constitute the largest group. Most individuals score high on work-capacity and assertiveness, while few are restless. About one fourth of all individuals have at least one parent with a university degree.
Table 1. Descriptive statistics of the variables included in the analyses (n=777)

<table>
<thead>
<tr>
<th>Variables</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Education</strong></td>
<td></td>
</tr>
<tr>
<td>Prestige education</td>
<td>11.7</td>
</tr>
<tr>
<td><strong>Social class</strong></td>
<td></td>
</tr>
<tr>
<td>Upper white collar</td>
<td>24.1</td>
</tr>
<tr>
<td>Intermediate</td>
<td>30.2</td>
</tr>
<tr>
<td>Lower white collar</td>
<td>11.8</td>
</tr>
<tr>
<td>Blue collar</td>
<td>33.9</td>
</tr>
<tr>
<td><strong>Non-cognitive skills</strong></td>
<td></td>
</tr>
<tr>
<td>Work-capacity</td>
<td>91.5</td>
</tr>
<tr>
<td>Temper-control</td>
<td>78.1</td>
</tr>
<tr>
<td>Assertiveness</td>
<td>88.6</td>
</tr>
<tr>
<td>Carefreeness</td>
<td>64.5</td>
</tr>
<tr>
<td>Restlessness</td>
<td>37.5</td>
</tr>
<tr>
<td><strong>Parental education</strong></td>
<td></td>
</tr>
<tr>
<td>Well-educated parents</td>
<td>26.0</td>
</tr>
<tr>
<td>Less-educated parents</td>
<td>74.0</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
</tr>
<tr>
<td>20-22</td>
<td>42.1</td>
</tr>
<tr>
<td>23-25</td>
<td>32.6</td>
</tr>
<tr>
<td>26-28</td>
<td>25.3</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>47.9</td>
</tr>
<tr>
<td>Female</td>
<td>52.1</td>
</tr>
</tbody>
</table>

Research design and method

The outcomes of interest here are, as noted above, whether the respondent has enrolled in a prestigious university education or not. The analyses are based on logistic regressions, which is a suitable method since the dependent variable is both binary and highly skewed (Edling and Hedström 2003). Also, when the dependent variable only can adopt two values, there is no requirement of a normal distribution, making logistic regressions handling potentially skewed data sets in a sufficient way (Bjerling and Ohlsson 2010).

However, it is not possible to compare log-odds estimates between logistic regression models, since these are affected by omitted variables that are related to the dependent variable, called
unobserved heterogeneity (Mood 2010). Because of this, average marginal effects (AME) have been calculated, which are comparable across models. The average marginal effect is the average change in probability of a certain outcome when an independent variable changes one unit (Angrist and Pischke 2009: 76). Interpreting the average marginal effect of dummy variables can seem arbitrary, since the average effect of a variable only taking two different values becomes spurious. However, one can still interpret it as the average change in probability when the dummy goes from 0 to 1, at specific values of the independent variables.

The significance levels used in the regressions are set at 0.1 %, 1 % and 5 %. One of the main advantages of the data material is its longitudinal design, which, at least to some extent, erases potential causality problems as the temporal order of cause and effect is certified. However, there are of course always the problems with confounding and omitted variables bias, and the risk that the results are spurious because of another plausible independent variable that may account for the observed association. 4

Results

The result section is divided into four parts, each connecting to one specific hypothesis. In the first section the incidence of a prestigious education is presented for people with different characteristics. This gives insights about what is important for the transition to prestige education. What follows in the next section is an examination of the share of individuals in each social class scoring high on each of the studied non-cognitive skills. After that, class differences in prestigious university education are investigated and whether non-cognitive skills influence this association. Finally, the role of non-cognitive skills in the transition to prestigious education is examined within classes, for individuals from blue collar origin and upper white collar origin respectively.

4 Since no bivariate correlation for any of the independent variables have a Pearson's r greater than 0.75, the models does not suffer from multicollinearity (Edling and Hedström 2003).
The share of individuals attending a prestigious university education

In Figure 1 and 2 below, the share of individuals with a prestige education are presented separately for each variable. This gives a picture on what seems to be important for enrolling in a prestigious university education, also testing Hypothesis 1.

Figure 1 below indicates that there is a clear class gradient in the selection into prestige education, with the highest share among individuals from upper white collar origins. More individuals from upper white collar backgrounds have enrolled in a prestigious university program compared to lower white and blue collar children. The share of people with prestigious university education also appears to increase with parental education. There is also a gender difference in enrollment, with relatively more men than women eventually selecting a prestigious education.\textsuperscript{5}

Figure 1. The share of individuals enrolled in a prestigious university education by social class of origin, parental education, age and gender

Figure 2 presents the share of people enrolled in prestigious education depending on whether the respondent scored high on each non-cognitive skill or not. Most of the non-cognitive skills

\textsuperscript{5} Statistically significant differences (chi-squared test, p<0.05).
seem to be unrelated to prestigious education as there are not any major differences between those that scored high and low. However, individuals scoring high on restlessness enroll to a lesser extent compared to individuals scoring low.⁶

*Figure 2. The share of individuals enrolled in a prestigious university education by each non-cognitive skill*

In sum, it appears like individuals from more privileged social class backgrounds and with well-educated parents are more likely to attend a prestigious university education than other individuals. However, the role of non-cognitive skills for the transition to prestige education is more unclear, and Hypothesis 1 does not receive any support. This I will return to below.

**Social class differences in non-cognitive skills**

In Figure 3 below, I investigate whether there are any social class differences in non-cognitive skills, testing Hypothesis 2. The differences in non-cognitive skills between individuals of different social class backgrounds are small. Individuals from upper white collar origins score lower on restlessness than individuals blue collar origins.⁷ No other class difference is statistically significant. Hypothesis 2 was that individuals from upper white collar origins

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⁶ Statistically significant difference (chi-squared test, p<0.05).

⁷ Statistically significant difference (chi-squared test, p<0.05).
should have higher non-cognitive skills than individuals from blue collar origins. However, this hypothesis only receives some support for the item measuring restlessness.

*Figure 3. The share of individuals with each non-cognitive skill, divided by class*

![Bar chart showing the share of individuals with each non-cognitive skill, divided by class.]

**Logistic regression on attending a prestigious university education**

Below, Hypothesis 1 is further tested with a logistic regression analysis on the likelihood of attending a prestigious educational field. This analysis also enables a test of Hypothesis 3, i.e. whether the observed social class gaps in prestigious education widen when accounting for non-cognitive skills. This can tell us something about the importance of non-cognitive skills for participation in prestige education, and whether these factors may partly explain the differences in educational choice between individuals from different social class origins.

In Model 1 in Table 3, the gender differences in prestigious educational attainment are evident. Men are significantly more likely than women to be enrolled in prestigious university education, even after accounting for age differences and social class of origin. The likelihood of having a prestigious education seems to decrease with age, but the age of the respondents does not have any significant impact. The class differences indicated in Figure 1 are here confirmed. Individuals from upper and intermediate white collar homes are more likely to attend prestige
education than individuals from blue collar homes. When controlling for parental education in Model 2, the social class differences are marginally reduced. Parental education does not have any significant impact.

In Model 3, I add controls for non-cognitive skills. As seen, the coefficient for males increases and becomes significant with higher confidence, suggesting that men’s enrollment into a prestigious educational field is positively affected by scoring high on non-cognitive skills. The class differences as well as the difference in parental education are unchanged. Individuals scoring high on restlessness are less likely to attend a prestigious education. There are no other statistically significant differences between respondents scoring high or low on other non-cognitive skills in attending prestige education.

Table 2. Logistic regression of the likelihood of attending a prestigious university education (AMES)

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>0.058*</td>
<td>0.059*</td>
<td>0.065**</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23-25</td>
<td>-0.001</td>
<td>-0.003</td>
<td>-0.003</td>
</tr>
<tr>
<td>26-28</td>
<td>-0.018</td>
<td>-0.014</td>
<td>-0.015</td>
</tr>
<tr>
<td>Social class</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper white collar</td>
<td>0.157***</td>
<td>0.124**</td>
<td>0.120**</td>
</tr>
<tr>
<td>Intermediate</td>
<td>0.127***</td>
<td>0.117**</td>
<td>0.117**</td>
</tr>
<tr>
<td>Lower white collar</td>
<td>0.050</td>
<td>0.049</td>
<td>0.053</td>
</tr>
<tr>
<td>Well-educated parents</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work-capacity</td>
<td></td>
<td></td>
<td>-0.019</td>
</tr>
<tr>
<td>Temper-control</td>
<td></td>
<td></td>
<td>-0.024</td>
</tr>
<tr>
<td>Assertiveness</td>
<td></td>
<td></td>
<td>-0.017</td>
</tr>
<tr>
<td>Carefreeness</td>
<td></td>
<td></td>
<td>0.029</td>
</tr>
<tr>
<td>Restlessness</td>
<td></td>
<td></td>
<td>-0.084**</td>
</tr>
<tr>
<td>Pseudo R²</td>
<td>0.067</td>
<td>0.073</td>
<td>0.094</td>
</tr>
<tr>
<td>n</td>
<td>777</td>
<td>777</td>
<td>777</td>
</tr>
</tbody>
</table>

*** p<0.001, ** p<0.01, * p<0.05. ¹ ref. category=female. ² ref. category=20-22. ³ ref. category=blue collar. ⁴ ref. category=low-educated parents (cf. page 15).

The explained variance, pseudo R², increases only marginally as more variables are added, and is only about 9 percent in the full model. This obviously indicates that there are many other
more important factors not included in this model that affect the selection into prestigious educational fields. However, including these is beyond the scope of this thesis, focusing on the role of non-cognitive skills in attending a prestigious university education. This will be further discussed below.

In sum, the analyses indicate that individuals scoring high on restlessness are less likely to attend a prestigious education, while scoring high on work-capacity, temper-control, assertiveness or carefreeness does not have any impact. This does not give any support to Hypothesis 1. The social class gaps in prestigious educational attainment are unaffected when adding controls for non-cognitive skills, i.e. indicating that Hypothesis 3 does not receive any support.  

Separate class analyses of non-cognitive skills and prestige education

The above reported findings indicate that non-cognitive skills do not explain much of the variation in prestigious educational attainment between classes. In the following section I therefore test whether non-cognitive skills might explain some of the variation within classes. Thus, the role played by non-cognitive skills in attending prestigious university education is here examined separately for individuals of upper white collar and blue collar origin.

The results of the logistic regression analysis for children of upper white collar parents, presented in Table 4 below, indicate that men are more likely than women to enroll in prestige education. Age does not seem to matter for individuals of upper white collar origin either. In Model 2, controls for parental education are added, showing no statistical significance. The non-cognitive skills are added in Model 3. For upper white collar individuals, the only non-cognitive skill having a significant effect on prestigious university attainment is restlessness, showing a negative association. As more variables are added, the explained variance increases,

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8 The same predictors have been tested with the outcome of participating in post-secondary education in general, regardless of field of study. Similar results were found.

9 One alternative to dividing the data is to analyze possible interaction effects between class and the other independent variables. However, I have chosen to perform separate analyses because (i) the risk of multicollinearity when using a lot of interactions, (ii) it is unclear which variables would have interacted with which, and (iii) the results are more evident when presenting two different models.
reaching only about 10 percent in the last model. Thus, there are also many other factors not included here that affect the educational choices of these individuals.

Table 3. Logistic regression of the likelihood of attending a prestigious university education (AMEs). Results for individuals of upper white collar origin.

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>0.120*</td>
<td>0.135*</td>
<td>0.138*</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23-25</td>
<td>-0.029</td>
<td>-0.037</td>
<td>-0.031</td>
</tr>
<tr>
<td>26-28</td>
<td>-0.102</td>
<td>-0.087</td>
<td>-0.093</td>
</tr>
<tr>
<td>Well-educated parents</td>
<td>0.135</td>
<td>0.115</td>
<td></td>
</tr>
<tr>
<td>Non-cognitive skills</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work-capacity</td>
<td></td>
<td>-0.112</td>
<td></td>
</tr>
<tr>
<td>Temper-control</td>
<td></td>
<td>-0.038</td>
<td></td>
</tr>
<tr>
<td>Assertiveness</td>
<td></td>
<td>-0.076</td>
<td></td>
</tr>
<tr>
<td>Carefreeness</td>
<td></td>
<td>0.083</td>
<td></td>
</tr>
<tr>
<td>Restlessness</td>
<td></td>
<td>-0.160*</td>
<td></td>
</tr>
<tr>
<td>Pseudo $R^2$</td>
<td>0.029</td>
<td>0.051</td>
<td>0.099</td>
</tr>
<tr>
<td>N</td>
<td>187</td>
<td>187</td>
<td>187</td>
</tr>
</tbody>
</table>

*** p<0.001, ** p<0.01, * p<0.05. ¹ ref. category=female. ² ref. category=20-22. ³ ref. category=low-educated parents.

As shown in Table 5 below, the logistic regression analysis on individuals of blue collar origin indicate no gender differences in attending prestige education. Older people seem more likely to attend, although the age difference is not significant. Controls for parental education are added in Model 2, and having well-educated parents does not increase the likelihood of enrolling in prestige education. In Model 3, the variables measuring non-cognitive skills are added. Scoring high on any of the non-cognitive skills does not have any significant effect on the transition to prestige education for people of blue collar origin. The explained variance amounts to 12 percent.
Table 4. Logistic regression of the likelihood of attending a prestigious university education (AMES). Results for individuals of blue collar origin.

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male¹</td>
<td>0.055</td>
<td>0.055</td>
<td>0.056</td>
</tr>
<tr>
<td>Age²</td>
<td>-0.047</td>
<td>-0.047</td>
<td>-0.045</td>
</tr>
<tr>
<td>23-25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26-28</td>
<td>0.036</td>
<td>0.036</td>
<td>0.039</td>
</tr>
<tr>
<td>Well-educated parents³</td>
<td>0.004</td>
<td>0.010</td>
<td></td>
</tr>
<tr>
<td><strong>Non-cognitive skills</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work-capacity</td>
<td></td>
<td>0.015</td>
<td></td>
</tr>
<tr>
<td>Temper-control</td>
<td></td>
<td>-0.014</td>
<td></td>
</tr>
<tr>
<td>Assertiveness</td>
<td></td>
<td>-0.038</td>
<td></td>
</tr>
<tr>
<td>Carefreeness</td>
<td></td>
<td>0.017</td>
<td></td>
</tr>
<tr>
<td>Restlessness</td>
<td></td>
<td>-0.031</td>
<td></td>
</tr>
<tr>
<td><strong>Pseudo R²</strong></td>
<td>0.102</td>
<td>0.102</td>
<td>0.127</td>
</tr>
<tr>
<td><strong>N</strong></td>
<td>263</td>
<td>263</td>
<td>263</td>
</tr>
</tbody>
</table>

*** p<0.01, ** p<0.05, * p<0.1. ¹ref. category=female. ²ref. category=20-22. ³ref. category=low-educated parents.

In sum, there does not seem to be any great difference in the processes involved in the selection into prestigious university education between individuals of different social classes. While restlessness has a negative effect on the enrollment into prestigious education among children of upper white collar parents, none of the non-cognitive skills have any effect on the enrollment among children of blue collar parents. Thus, non-cognitive skills can only marginally explain the variation within the upper white collar class in the transition to prestigious university education, meaning that Hypothesis 4 only receives minor support.

**Discussion**

The purpose of this thesis was to investigate social class differences in the transition to prestigious university education in Sweden, and what role non-cognitive skills in adolescence play in this transition. Using longitudinal data with unique measures of socioeconomic background, field of study and non-cognitive skills, the contribution of this thesis was to explore if the association between social class of origin and prestigious educational choice could be mediated by non-cognitive skills in adolescence.
The presented findings indicate – in line with previous research – a social class variation in attending prestigious educational fields (cf. Blossfeld et al. 2015; Thomsen 2015). Individuals from upper and intermediate white collar origins are significantly more likely than individuals from blue collar origins to attend prestigious education. Following Bourdieu’s theory of cultural reproduction, class differences in education can be explained with the fact that privileged children are better prepared for entering higher education. Because children of blue collar origin lack the appropriate cultural capital and habitus, they feel alienated in the school, preventing them from succeeding in higher education.

In line with rational choice theory, the above class difference in prestigious outcomes can also be viewed as a secondary effect (Boudon 1974). Thus, individuals from more privileged backgrounds make educational choices that are more beneficial in a longer perspective. According to the relative risk aversion theory (RRA), children typically strive to end up in at least the same class as their parents (Goldthorpe 1996). If individuals of upper white collar parents want to avoid downward social class mobility, they need to choose the appropriate field of study. At the same time, individuals of blue collar origin, whose parents are working in unskilled jobs without educational qualifications, disregard higher education because of the risk of failure.

Upper white collar individuals’ greater access to quality education is also in line with Lucas’ (2001) hypothesis of Effectively Maintained Inequality. With individuals from all classes attaining higher education, individuals of upper white collar origin search for ways to preserve their advantage. Choosing more prestigious educational programs with higher admission limits and tougher requirements becomes a way to maintain their head start when entering the labor market.

Overall, the findings indicate that there are only small non-cognitive skills differences between those who attend prestigious education and those who do not attend. Restlessness was the only trait that had statistically significant effects on the likelihood of attending prestige education. The negative effect of being restless and distracted is quite comprehensible: individuals who find it hard to sit still and concentrate are probably generally not that focused on their school performance and have a harder time continuing to higher educational levels and more prestigious educational fields.

The lack of association for the other non-cognitive skills is probably due to the small variation in the sample. The small sample size reduce power and increase the risk of type II error, meaning that there is a risk of finding no correlation between the variables when there actually
is a correlation. Also, it is conceivable that a different definition of some of the non-cognitive skills would have altered the results and might be more effective in sorting out the children with the most significant skills. Furthermore, non-cognitive skills are more difficult to measure than e.g. cognitive ability, which could mean that the influence of non-cognitive skills is larger than the presented results suggest (cf. Bihagen et al. 2013).

The small class differences in non-cognitive skills are in line with earlier empirical results (cf. Bihagen et al. 2013; Kokko et al. 2003; Lundborg et al. 2014). Individuals from upper white collar origins score significantly lower than individuals from blue collar origin on restlessness. The explanations to class differences in non-cognitive skills offered in previous research mainly concerns the investments parents are able to do in their children (see e.g. Garcia 2014). Thus, upper white collar parents are more concerned with their children’s success in the school and the labor market, and put more effort on developing these abilities already in early childhood.

However, it is important to note that the non-cognitive skills included here do not vary much by social class and are only of minor importance for the class differences in higher education. The social class gaps in prestigious education are neither widened nor narrowed when accounting for non-cognitive skills.

When analyzing the enrollment into prestigious education within classes, non-cognitive skills were not of any large significance either. The only significant result was that scoring high on restlessness was negative for the likelihood of enrollment for children from upper white collar origins. Differences in non-cognitive skills had no effect on attending prestige education for children of blue collar parents. This could suggest that in the transition to prestigious educational fields, upper white collar children are more penalized for having negative non-cognitive traits than blue collar children. At the same time, none of these groups’ educational success is positively affected by having more positive non-cognitive skills.

Throughout the regression analyses, significant gender differences in enrollment were found. One possible explanation to this could be that the definition of a prestigious education used here actually favor men. It is conceivable that men generally are more prone to choose fields of study like engineering and economics, while these fields might not be seen as equally attractive for women. However, this is another hypothesis that require further research to clarify if this could be the case.

On the basis of the analyses presented in this thesis, it is not possible to determine why there is such a large social class difference in enrollment into prestigious university education. One
conclusion I can draw from the results of this thesis is that non-cognitive skills as measured here only play a minor mediating role in the association between social class of origin and educational choice. There are apparently many other important factors involved in the transition to certain university educations that have not been addressed here. Thus, the major limitation of this study is the lack of appropriate variables. For example, a variable measuring the respondent’s school performance would have been useful as a control variable in the regressions, in order to fully understand the processes involving primary and secondary effects of social class. A good variable measuring the cultural capital of the children would also have been useful, as it is a vital part of the cultural reproduction theory. Unfortunately, appropriate variables measuring school performance or cultural capital was not available to use in this thesis. Furthermore, it was not possible to control for the household income of the children in 2000.\(^{10}\) This means that one dimension in the analysis of social background and education is missed. For example, RAT implies that income, given social class, would have a significant positive impact on participation in higher education, as the relative costs of studying is one of the explanatory factors of the theory (Breen and Goldthorpe 1997).

Except what is noted above, a proposal for future research is to study children’s non-cognitive skills in even younger ages and with more frequent intervals follow up how they evolve over time. By following the development of non-cognitive skills in one cohort through school, it would be possible to study whether certain skills have different effects on school choices throughout social classes. It would be especially interesting to see if non-cognitive skills have an impact on the field of study choices already in upper secondary school. Since the class differences in educational attainment apparently still exist in Sweden, such data would be able to provide knowledge about when to devote specific effort to reduce the social bias in the recruitment to prestigious educational fields.

\(^{10}\) This information is available in LNU 2000 but since it is based on register data it was not available to use in this thesis.
References


