

# **Equality of opportunity through education?**

A research to the differences in obtaining future cultural, social and economic capital through education between students from different socioeconomic backgrounds.



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## **Abstract**

**Introduction:** Education stimulates social mobility from students from different socioeconomic backgrounds. In contemporary society, due to social policies, people are given the opportunity to follow an education, which is less determined by someone's socioeconomic background. As a result, more and more people are highly educated, leading into an opportunity trap (Fishman, Ludgate & Tutak, 2017). As a consequence, it remains unanswered whether education is a means of stimulating social mobility. In this study, the contribution of education on the change of someone's socioeconomic status (SES) will be examined. Bourdieu's concepts of capital (i.e., cultural, social and economic) will be used as an indication of SES. Resulting in the following question: *To what extent does education contribute to the differences in obtaining future cultural, social and economic capital?*

**Methods:** The data used for this study comes from the LISS panel and the sample for this study consisted of 261 participants. A quantitative research method is used to analyse the data. **Results:** It is indicated that education does not show an interaction effect on the relationship of relative change from someone's starting capital towards someone's ending capital. Starting capital, however, does show a significant result in the relative increase of that capital. **Discussion:** Although, no effects of education on capital change were found, this study did show that your starting capital is an important factor in capital development. It appears that when you start with relatively more capital, you also end up with relatively more capital compared to others. This research has shown that there are mutual differences in the possession of capital and that these differences continue to exist later on. This applies for social and economic capital, but not for cultural capital.

## **Introduction**

The last decennia, more and more people have access to higher education. This educational expansion is due to technological developments in the labour market, in which knowledge and skills are required (Brown, 2013). In addition, active government policies aimed for equal opportunities, are strived for. This latter has been high on the political agenda (Eurofound, 2017). A fairer society, according to the EU, can be accomplished when two dimensions are outlined, namely inequality of outcome and inequality of opportunity. These concepts are used as a measurement to indicate the differences in equality among individuals, societies and countries (Brunori, Ferreira & Peragine, 2013).

Inequality of outcome refers to the difference in distribution of income. More specific, the result of economic, demographic and social processes that contributes to the situation that individuals do not possess the same level of material wealth or overall living economic conditions. This form of inequality indicates that the material dimensions of well-being is unequally distributed due to the result of circumstances beyond one's control, talent and the effort someone's putting in (Lefranc, Pistolessi & Trannoy, 2008). Moreover, they state that personal responsibility indeed is a factor that contributes to the acquisition of wealth. However, in order to reduce inequality, the focus should primarily be on social policies regarding circumstances that are outside the scope of the individual. At the same time, individuals must also undergo the consequences for where they are responsible for.

Active government policy concerning the equality of opportunity of the EU has also been pursued in the Netherlands. It was focussed on the idea of longer being judged on the basis of your circumstances, but rather on the basis of your capabilities. Moreover, education has had a function for children from a lower social economic status to rise to a higher social economic status (upward social mobility). In this context, education can be seen as an equalizer (Kraaykamp, Tolsma & Wolbers, 2013).

In contemporary society, people are given the opportunity to follow an education and which is less determined by the socioeconomic background from a student. However, these developments eventually lead to the creation of an opportunity trap. This refers to the social congestion in competition between potential workers and students, since the demand outruns the supplies of suitable jobs. This leads schools, universities and employers to raise entry requirements, or to increase the number of obstacles before entering a job (Fishman, Ludgate & Tutak, 2017). For instance, by having at least a couple of extracurricular activities or having job experience alongside a diploma.

Although education has become increasingly important for a suitable occupational

position, diplomas have been devaluated for the labour market. Since highly educated people, who no longer have access to the best labour market positions, started working in position below their educational level. Thereby occupying the labour market positions of the less educated (Wolbers, De Graaf & Ultee, 2001). Moreover, downward social mobility increases for students from a higher socioeconomic background as a result of the opportunity trap. As such, one should no longer take for granted that children with a higher social-economic status will rank as high or higher than their parents on the social ladder (Kraaykamp et al., 2013). Simultaneously, rising on the social ladder from children from lower socio-economic background with the help of education has been limited.

In short, social policies ought to reduce inequality of opportunity, in which access to education would play an important role. However, with the emergence of the opportunity trap, it remains to be seen whether education is a means of stimulating social mobility. This study will examine this issue, specifically looking at the change of a person's socio-economic status and how education contributes to this process.

## **Existing Research**

### **Socio-Economic Status (SES)**

Much research has already been done on the role of one's socioeconomic status on educational performance. In von Stumm et al.'s (2020) study, on the prediction of one's educational achievement using one's socioeconomic status (SES), among other factors, it was found that 77% of children from high SES families go to university, while 21% of children from low SES background go to university. Marchant and Finch (2016) go even further and state in their study that there is a relationship between a student's SES and his educational outcomes. Families that have more resources, such as finances or networks, are more likely to get better schooling for their children, compared to families that have a lower SES and do have more opportunities for in the future.

In addition to a person's SES, a school's SES also contributes to better student performance, in which, according to Burroughs, Zoida and Houang (2015), schools with a higher SES also perform better than poorer schools. Besides, they state that the abovementioned relationships reinforce each other in a way that resources matter when it comes to a students' achievement. Greater investments from parents in their children to place them on schools that are known by their high-teaching qualities, will privilege these students on the long term.

It can be concluded that SES plays an important role in an individual's success. However, what exactly the construct SES entails is still underexplored and will be outlined below.

The construct of SES has been widely debated in its definition how it is measured. From an economical perspective, SES refers to the economic position and the economic social status. It refers to someone's class and prestige (Bradley & Corwyn, 2002). From a socio-psychological perspective, SES refers to forms of capital. These are resources that can be used in order to achieve certain goals (Rogošić & Baranović, 2016).

Coleman (1988) made a distinction between different forms of capital: Financial capital (e.g., material resources), social capital (e.g., resources achieved through social networks) and human capital (e.g., nonmaterial resources, such as skills and knowledge). He conducted research on educational achievements of students in Catholic schools and concluded that this was not caused by one's SES, but which were related to the characteristics of the Catholic school, in which community cohesion promoted certain achievements (Coleman & Hoffer, 1987). Coleman saw the forms of capital here as a positive outcome, which is volitional from the community. Bourdieu (1984) looked at social differences and success in a different way and argued that they come about through differences in possession of capital.

When looking at social capital social capital for example, different approaches can be examined. Coleman (1988) states that social capital 'consist of some aspects of social structure and facilitates certain actions of individuals who are within the structure'. Putnam emphasizes the role of social capital in a social structure and adds that it refers to aspects of social organizations (Siisiainen, 2003). This includes trust, social norms and network that can improve society as a whole. Coleman's and Putnam's approaches focuses on social capital as a resource within and without the family. While for Bourdieu, social capital is seen as a resource of the individual that is highly associated with power (Vryonides, 2007). Social capital in that sense can be used to achieve certain goals.

Summarizing, Coleman and Putman differ from Bourdieu, in that they see forms of capital as possessions of groups and is approached on meso-level. Bourdieu, on the other hand, is concerned with capital at the individual level. At the same time, they both recognize the idea of different forms of capital, whose are embedded in SES. This notion will also be adopted as of now.

Below, the different forms of capital will be discussed. In doing so, it is important to

mention that Bourdieu is more advanced in his forms of capital, as he introduced the possession of cultural capital in addition to economic and social capital.

### **Cultural capital**

Bourdieu distinguished three forms of cultural capital. First, *embodied cultural capital*. It includes habits that has been acquired during the socialization process (Bourdieu, 1986). It is referred as an institutionalized culture that is derived from the family. For example, someone's linguistic styles, linguistic competencies or cultural knowledge or styles of interaction (Aschaffenburg & Maas, 1997). These cultural resources are transferred from generation to generation. Moreover, it refers to the knowledge that is available within the family. This knowledge is transferred from the parents to the child and enables to gain advantages in education. Embodied cultural capital can take many forms. For example, behavior that is internalized, positions that are taken or knowledge and habits that are obtained. These forms are acquired during the upbringing, socialization process or obtained through investment in education or cultural activities (Vryonides, 2007).

Second, *objectified cultural capital*, which includes gathered physical objects, such as pictures, musical instruments, books or computers. The possession of these objects implies a specific relation to language, cultural of art or culture of literacy. Moreover, it encompasses the capacity to define cultural and artistic values and styles (Tan, 2007).

Third, *institutionalized cultural capital*, which refers to the formal educational qualification and training. More specifically, the recognition from an institution, through educational degrees and certifications. This form of capital is obtained by building up investment in skills and graduating degrees. Ultimately, this can pay off in money as one distinguishes itself from others. More specifically, a student is able to call oneself a professional in the field of the field of the study, allowing access to higher classes. Classes that are willing to pay more for the services a student can provide. This form of capital is institutionalized as the educational institute determines and facilitates what the value of a certificate must be in order to be able to convert cultural capital into economic capital (Kraaykamp & Van Eijck, 2010).

### **Social Capital**

Bourdieu defines social capital as: 'the sum of the actual and potential resources that can be mobilized through membership in social networks of actors and organizations' (Bourdieu, 1986, p. 862). In other words, as resources that an individual can access via social networks. Such resources include 1) information (e.g., concerning educational options), 2) support (e.g.,

help with educational problems) and 3) obligations (e.g., goodwill that has been build up in the past, may help an individual). In the field of education, examples of these resources include homework assistance by the family or the acceptance and promotion of the importance of education. These have a positive impact on the educational performance (Acar, 2011).

### **Economic Capital**

According to Bourdieu (1986), economic capital refers to income in money and other financial resources. Possession of economic capital means that families are able to use these resources, for example in activities to provide their children with opportunities counterpart-relatives would not have. Moreover, going to private school or getting tutoring is affordable with the use of financial resources (Wilston, 2002).

A single form of any of the above capital form is insufficient to express how opportunities of different classes are distributed. Bourdieu has therefore expanded the notion of capital by bringing them together in his notion of convertibility and liquidity of capital.

### **Convertibility & Liquidity**

The three forms of capital vary from one another regarding their convertibility and liquidity. Convertibility focuses on the exchanges of different forms of capital, whereas liquidity refers to the extent to which capital can be converted. When the liquidity of capital is high, it means that it can be converted on the short term. For example, economic capital is the most liquid and can be easily converted into cultural or social capital. These latter forms offer in their place opportunities for increasing outcomes and is eventually converted back into economic capital (Bennet & Silva, 2011). Regarding social capital, individuals can use their social network to convert their forms of capital into improvements of their already existing capitals. The research of DiMaggio (1982) on social mobility and educational success, showed that parents providing their children not only with economic resources, but also cultural resources, enabled them to achieve a good economic position through successful education. Cultural capital is therefore converted into economic capital.

### **Theory of social reproduction**

With the use of the aforementioned forms of capital, educational achievements can be predicted. In his theory of social reproduction, Bourdieu focusses on economic and symbolic (social and cultural) capital and states that actions of an individual are determined by external factors, such as socioeconomic status. Whereas educational success is commonly ascribed to



individual ability, Bourdieu states that this success is the result of the amount of cultural capital (Sieben & Lechner. 2019). For example, when a middle- or upper-class child is getting acquainted with other cultures or languages, because their parents have the resources providing them with these holidays abroad. Moreover, a child could be taken to the local golf club and gain knowledge about the social nuances involved. In short, they could know how to do the things that many middle- or upper-class children know how to do and thereby getting experienced. According to Aschaffenburg & Maas (1997) early cultural participation outside the school may strengthen social reproduction. This is because children that are or have been exposed to cultural capital in their childhood, will learn more from classes than children who are lagging behind in capital. Although the latter may participate in school, this participation will not increase their existing cultural capital nor their educational success.

## **Theoretical Framework**

This study focuses on the role of education on the mechanism of social reproduction. It is assumed that an individual's SES changes over time (Collins, 2009). This SES will consist of the components of capital described by Bourdieu. Therefore, cultural, social and economic capital are embedded within SES.

Bourdieu states that one is given a certain amount of capital from home and can use it, in the long term, in maintaining or even increasing this capital. This mainly concerns social reproduction in the sense that those who have little capital will later have less than their relative counterparts who start with more starting capital (Aschaffenburg & Maas (1997). From this, three hypotheses (per capital) can be derived, including;

*H1a. People with lower cultural starting capital, will not increase more than people who start with higher cultural starting capital.*

*H2a. People with lower social starting capital, will not increase more than people who start with higher social starting capital.*

*H3a. People with lower economic starting capital, will not increase more than people who start with higher economic starting capital.*

In addition, education also plays an important role in changing this capital. In the context of cultural capital, de Graaf et al. (2000) argue that schools are places where the possession of cultural capital is rewarded and reinforced. Quite, Hofstra, Knigge & De Schipper (2013) state that education provides an environment for developing social capital. More specifically,

social relationships and a network are built during a person's time of education. Finally, education helps to prepare for working life, which on the long term pays off in the form of economic capital (Lynch & Moran, 2006). Three hypotheses can be derived from this, namely;

*H1b. Education does affect the relationship between the relative change from cultural starting capital and cultural ending capital.*

*H2b: Education does affect the relationship between the relative change from social starting capital and social ending capital.*

*H3b. Education does affect the relationship between the relative change from economic starting capital and economic ending capital.*

Finally, to extend the above hypotheses, there are a few more assumptions of predictions that can be made to represent the outcome of social reproduction. First, a difference in possession of capital over time given your starting capital also means that the groups (divided by the degree of starting capital) must differ significantly on the outcome of that capital. Second, it is argued that within the reproduction of capital, it includes that there is an intergenerational transmission change over time (Collin, 2009). The following hypothesis follow from this:

*H1c. There is a statistically significant difference between the groups (measured in the degree of cultural starting capital) in cultural ending capital.*

*H1d. There is a statistically significant difference between cultural starting capital and cultural ending capital.*

*H2c. There is a statistically significant difference between the groups (measured in the degree of social starting capital) in social ending capital.*

*H2d. There is a statistically significant difference between social starting capital and social ending capital.*

*H3c. There is a statistically significant difference between the groups (measured in the degree of economic starting capital) in economic ending capital.*

*H3d. There is a statistically significant difference between economic starting capital and economic ending capital.*

To summarize, in this study it will be investigated whether there is a difference between different socioeconomic statuses (SES) on the outcome of future socioeconomic statuses, specifically looking at the role of education. SES hereby is divided into cultural, social and economic capital. This research involves the conversion of capital, mainly focusing on the occurrence of the mechanism per capital rather than the convertibility of capital.

**Research question**

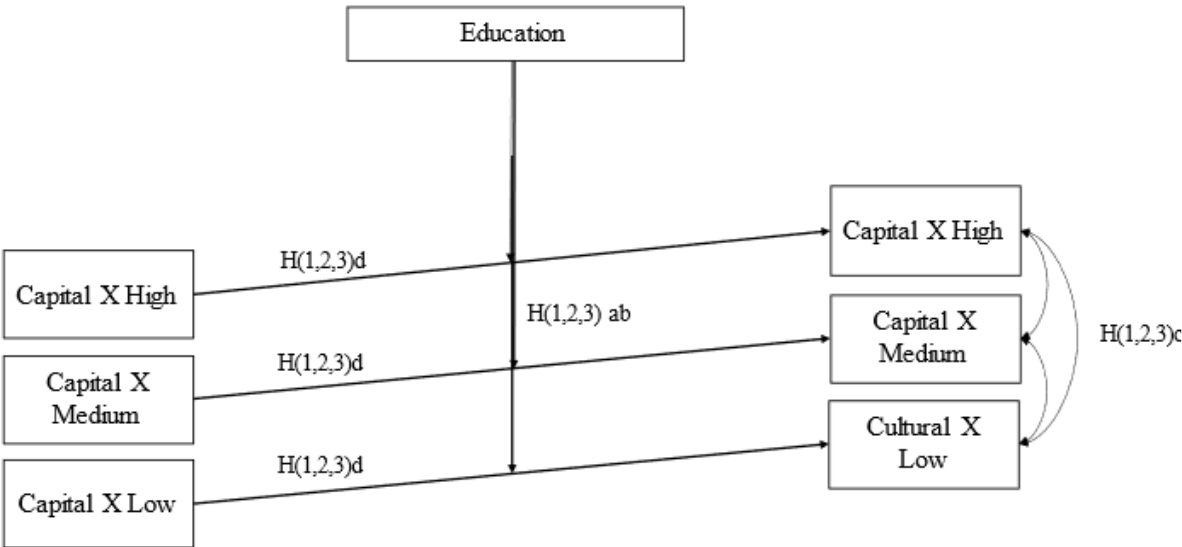
The abovementioned aspects can be summarized into the following question: **To what extent does education contribute to the differences in obtaining future cultural, social and economic capital?**

The following sub-questions have been formulated to gain insight into the subject:

- To what extent does education contribute to changing one's cultural capital?
- To what extent does education contribute to reducing the differences in cultural capital?
- To what extent does education contribute to changing one's social capital?
- To what extent does education contribute to reducing the differences in social capital?
- To what extent does education contribute to changing one's economic capital?
- To what extent does education contribute to reducing the differences in economic capital?

The relationships of the variables with corresponding hypotheses are visualized in the conceptual model (Figure 1).

*Figure 1: Conceptual model*



*Note: 1) The X per variable indicates the different forms of capital (cultural, social and economic). 2) The conceptual model consists of the four hypotheses divided by forms of capital. The forms of capital are classified in the conceptual model as low, medium and high. This is done to give an indication of the different layers of capital. In the actual analysis, the different groups (layers) are further broken down. 3) the diagonal arrows from left to right represent the change from initial capital to final capital. In order to maintain the overview, the choice was made not to draw a level for each of the forms of capital to each of the possible outcomes. However, this should be kept in mind when interpreting the conceptual model. 4) The forms of capital on the left represent the capitals of 2008 and the capitals on the right represent the capital of 2018.*

## **Methods**

### **Design**

For this study a quantitative research design was used based on existing data. The concepts of Bourdieu have been examined and quantified in a lot of research (Grenfell & Lebaron 2014), which makes it reliable to perform a quantitative design. Besides, data of the LISS (longitudinal Internet studies for the Social Sciences) panel administered by CentERdata (Tilburg University, The Netherlands) is used. The LISS panel is a representative sample of Dutch individuals who participate in monthly Internet surveys. The panel is based on a true probability sample of households drawn from the population register. Households that could not otherwise participate are provided with a computer and Internet connection. A longitudinal survey is fielded in the panel every year, covering a large variety of domains including health, work, education, income, housing, time use, political views, values and personality. To answer the research question, having data that contained the same sample was necessary. Since it had to be investigated what the development of the different forms of capital was over time. The LISS panel provided the solution, as the same respondents with the same questions could be used at two different time points.

### **Sample**

Several questionnaires were used and combined from the LISS panel in order to have the maximum amount of coverage of the different variables as such it increases the internal validity. The total N was 22328. However, the population was first filtered based on specific background variables in order to have a representative sample that is in line with the research question. Therefore, the dataset was filtered on the age of 15 to 24 (lftdcat; age measured in CBS-categories) in wave 1 (2008), assuming that they were still in education. Besides, data was used of wave 11 (2018), since the sample of wave 1 is now 10 (25 until 34) years older and thus assuming they mostly finished education. The current sample (N=1193) was filtered on missing data. Many participants did not answer the questions in wave 11, which may be

due to attrition. Since data from participants in both waves is necessary, the choice was made to remove all participants with missing data in wave 2, resulting in a sample of 261. When it comes to the representativeness of the sample, the demographics are shown in Figure 1. With regard to the factor gender and place of residence, it can be stated that the sample is representative. However, when looking at origin, many data are missing (50.2%), which makes it impossible to determine whether the sample is a good reflection of the Dutch population. In addition, the education category HBO is over-represented (49%), in reality 20% of the Dutch population has an HBO diploma (Maslowski, 2020). This means that the sample is not representative in terms of educational level, and this will be taken into account for the remainder of this study.

*Table 1: Demographic of the sample*

		Frequency	Percentage
Gender	Male	119	45,6%
	Female	142	54,4%
Origin	Dutch background	110	42,1%
	First generation foreign, western background	4	1,5%
	Second generation foreign, non-western background	5	1,9%
	Second generation foreign, non-western background	12	4,6%
	Missing	131	50,2%
Place_Residence	Extremely urban	45	17,2%
	Very urban	65	24,9%
	Moderately urban	44	16,9%
	Slightly urban	53	20,3%
	Not urban	54	20,7%
Education	VMBO/MAVO	8	3,1%
	HAVO/VWO	12	4,6%
	MBO	47	18%
	HBO	128	49%
	University	63	24,1%
	Missing	3	1,1%

## Variables

### **Cultural capital**

To measure cultural capital, there are four components of cultural capital, according to the literature (Aschaffenburg and Maas, 1997, DiMaggio, 1982, Katsillis and Rubinson, 1990, Roscigno and Ainsworth-Darnell, 1999). These includes (1) *familiarity with legitimate culture*, which is measured in how often people participate in highbrow cultural activities (e.g., opera, ballet, visiting galleries), (2) *Reading and literacy interest*, which is measured in the number of books are or how often is read (Jæger, M. M., & Møllegaard, S. (2017)). (3) *Extracurricular activities*, measured by participation in art classes or academic clubs and (4) *cultural communication*, which is measured in how often there is a discussion of cultural and social issues with each other.

To measure cultural capital, embodied cultural capital is used on several existing instruments. More specifically, the measurement of participation in highbrow cultural activities as used in GoBmann (2018). In his paper he operationalized the concept of cultural capital as was derived by Bourdieu (1886). For **cultural activities**, the frequency of highbrow cultural activities, which included going to the theater, cinema, drama and musical. was used to measure this. It is covered in two questions. These questions are measured in average number of days per week spent on these activities and average time expenditure on days that apply in minutes. The Neps Survey was used to make the variable “Participation in Highbrow Cultural activities (GoBmann, 2018). The survey used an ordinal scale, so the variable was recoded into a 5-point Likert scale, whereas the scores are transformed into [1-never, 2-once, 3- 2 to 3 times, 4- 4 to 5 times and 5- more than 5 times]. A 5-point scale is the most common used scale, in which the transformation could be seen as reliable (Bertram, 2007).

Moreover, **reading culture** is seen by Bourdieu as an important factor in measuring cultural capital. Since it promotes educational success, which stems from the *cultural reproduction theory* (Bourdieu, 1977). Reading habits refers to the 2nd dimension *Reading and literacy interest*. The variable was measured in the LISS panel on the basis of the number of days people read per week and how much time they spend reading. A new variable has been created, using the scale as used by GoBmann (2018). The new variable *Reading\_frequency* is made and used a 5-point Likert scale, whereas the scores indicating the number of hours spend on reading per day: [0 hours=1, 0-0.5 hours = 2, between 0.5-1

hours=3, between 1-2 hours=4 and more than 2 hours=5].

Cultural capital, as was originally intended, is split into 2 variables.

*CulturalCapitalAct* and *CulturalCapitalReading*, which represent the two dimensions of embodied cultural capital.

### **Social capital**

The variable social capital was measured using five questions of the questionnaire ‘Social integration and leisure’, which covered two components of social capital. The first component *Size* refers to the number of social contacts someone has, which also includes they who are there for you when you need them. The second component *Strength of ties* refers to the degree of intimacy, reciprocity, expectation of durability and availability (Stone, 2001). The questions (table 2) were measured on a 3-point scale, whereas (1=yes), (2=more or less) and (3=no).

The first step that was taken to construct the variable social capital is to reverse the polarity of questions 2 to 4, whereas a high score (3) indicates a high degree of social capital and a low score (1) indicates a lower degree of social capital. After this, a reliability analysis was performed to test internal consistency of the questionnaire. Cronbach’s alpha for the 5-item social capital questionnaire was .759. This is considered adequate for the research purposes (Field, 2019). As a result, two new variables were computed. The first, *SocialCapital08*, which is the mean of the different scores of questions 1 to 5 of 2008 and the second, *SocialCapital18*, which is the mean of the different scores of questions 1 to 5 of 2018.

*Table 2: Questions measuring social capital in 2008 and 2018*

- 
- 1 I have a sense of emptiness around me
  - 2 There are enough people I can count on in case of a misfortune
  - 3 I know a lot of people that I can fully rely on
  - 4 There are enough people to whom I feel closely connected
  - 5 I miss having people around me
- 

### **Economic capital**

The variable economic capital is measured in net income. For economic capital in 2008, the monthly net income of the household is used, as it is described by Bourdieu to have as a start capital. For economic capital in 2018, the monthly personal net income is used, as it indicates the economic capital expressed in income in the future for participants. To do further analysis and to make a statement about the differences in groupings, the scores of incomes were

categorized into seven income groups. The modal income classes of the CBS were used for this purpose (CBS, 2021), whereas (Lowest - 10000=1) (10000 - 20000=2) (20000 - 30000=3) (30000 - 40000=4) (40000 - 50000=5) (50000 - 100000=6) (100000 – Highest = 8). This led to two new variables were made, *Economic\_capital\_2008* and *Economic\_capital\_2018*.

### **Education**

The variable education is measured by educational attainment. More specifically, the question “What is the highest level of education that you have completed with diploma or certificate?” was stated. The answers ranged from 1=no education, 27=doctor’s degree and 28=other. These scores were converted into six new categories using the education levels of the CBS (2021), whereas it ranges from (1=Primary school), (2= VMBO and MAVO), (3=HAVO and VWO), (4=MBO), (5=HBO) and (6=university).

### **Relative change**

To examine hypotheses **a** and **b** of each form of capital, it is necessary to create a new variable. Namely, the percentage change of the capital in 2018 compared to the starting capital in 2008. For this reason, a new variable was computed by capital (cultural, social and economic), using the formula  $((\text{Capital}_{2018} - \text{Capital}_{2008}) / \text{Capital}_{2008} \times 100\%)$ . This forms the dependent variable for the main analysis.

### **Analytical strategy**

In this section the analytical strategy for the hypotheses will be discussed. This includes the tests that will be performed and the procedure of the data analysis.

### **Main analysis - Factorial between groups analysis of variance (ANOVA)**

The first three **hypotheses 1a, 2a and 3a**: *People with lower X starting capital, will not increase more than people who start with higher X starting capital.* X can be filled in for the different forms of capital (cultural, social and economic). The second **hypotheses 1b, 2b and 3b**: *Education does affect the relationship between the relative change from X starting capital and X ending capital.* Here also applies that X can be replaced respectively for cultural, social and economic capital.

These six hypotheses are tested, using a factorial between groups analysis of variance (ANOVA). Whereas for hypotheses 1a, 2a and 3a, the differences in percentage change between the groups (separated by starting capital) will be analyzed. Subsequently, to test hypotheses 1b, 2b and 3b, this design looks at the interaction effect between education and the



percentage change in capital given your starting capital.

Prior to interpreting the results, an assumption check has been done. The independent variables: cultural, social and economic capital and the dependent variable, the percentage change of the different forms of capital, were not normally distributed. Transforming the data did not result in any significant improvements. Methodologically, a normal distribution of variables is preferred (Field, 2018). However, as Nanna & Sawilosky (1998) describe, a normal distribution is not always representative when converting data into practical issues. For example, a normal distribution of economic capital would imply that the largest number of respondents have average incomes. This is not the case in reality, since people who have just finished school still have to work and earn money. This will make it unlikely that they score on average on the modal-income normal distribution, which is also recognized by Karthaus (2020). Thus, in terms of content, the violation of this assumption, especially in the context of representativeness, should not be a problem.

In addition, the violation can also be justified methodologically, as the sample per condition is larger than 30 participants, making the ANOVA very robust against violations of normality (Field, 2018; Lumley et al., 2002). Parametric tests can thus be used in this analysis.

The assumption homogeneity of variances has been violated for each of the forms of capital. This means that in further analyses, it is likely that the null hypothesis could be rejected falsely. For this design, Field (2018) offers some solutions. However, these solutions are beyond the scope of the resources I possess, since you need the R extension. In addition, the dataset used is derived from an existing dataset and although I would like to have equal variances per group, this is not possible. The choice has been made to proceed with the analysis and keep the unequal distribution of variance in mind when interpreting the results. Finally, for post hoc test, the Bonferroni correction will be applied.

### **One-Way Between Groups ANOVA**

**Hypotheses 1c, 2c and 3c:** *There is a statistically significant difference between the groups (measured in the degree of X starting capital) in X ending capital.* The X can be replaced respectively for cultural, social and economic capital. For these hypotheses a One-way ANOVA have been conducted, with X ending capital as the dependent variable and X starting capital as independent variable.

Again, an assumption check was done prior to analysis. The variables *cultural*, *social* and *economic capital* in both time points (2008 and 2018) were not normally distributed.

Transforming the data here also did not lead to significant improvements. Again, violating this assumption did not cause methodological problems, as the N is higher than 30, making the analysis ANOVA robust to violating this assumption (Field, 2018; Lumley et al., 2002). In addition, the Test of Homogeneity of Variances table showed that Levene's statistics is significant for each of the variables. This allows the conclusion that the assumption of homogeneity of variance has been violated. As a solution, the Brown Forsyth statistics has been used to deal with the violation (Field, 2018).

### **Paired samples t-tests**

**Hypotheses 1d, 2d and 3d:** *There is a statistically significant difference between X starting capital and X ending capital.* The X can be replaced respectively for cultural, social and economic capital. For these hypotheses, multiple paired samples t-tests were performed.

Per form of capital, there are different group sizes of starting capital. For cultural capital five paired samples T-tests. Since the variable *cultural capital* is divided into cultural activities and reading culture, the above hypothesis will be tested for both constructs. For social capital, the hypothesis will be tested, using three paired samples t-tests. Finally, for economic capital, the hypothesis will be tested, using seven paired samples t-tests.

An assumption check was done prior to the analysis. The assumption normality and normality of difference scores were violated. However, as mentioned above, this is not a problem (Field, 2018; Lumney et al., 2002).

## Results

### Descriptives

The descriptives are shown in table 3. What is particularly striking when analyzing the descriptives, is that the average capital over the years (between 2008 and 2018) decreases for both cultural capital and economic capital. In contrast, for social capital there is an average increase.

**Table 3:** *Descriptive statistics*

<b>Variable</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>
Cultural Capital_2008 Activities	261	2,48	1,006
Cultural Capital_2018 Activities	261	1,77	0,92
Percentage Change Cultural Capital Activities	261	-13,95	67,90
Cultural Capital_2008 Reading	261	2,69	1,41
Cultural Capital_2018 Reading	261	1,85	1,11
Percentage Change Cultural Capital Reading	261	-4,27	87,73
Economic Capital_2008	258	4,34	1,55
Economic Capital_2018	258	1,97	1,05
Percentage Change Economic Capital	258	-49,55	28,35
Social Capital_2008	261	2,24	0,81
Social Capital_2018	261	2,40	0,75
Percentage Change Social Capital	261	20,69	59,32

### Analysis 1 - Factorial between groups analysis of variance (ANOVA)

**Hypothesis 1a:** *People with lower cultural starting capital, will not increase more than people who start with higher cultural starting capital.*

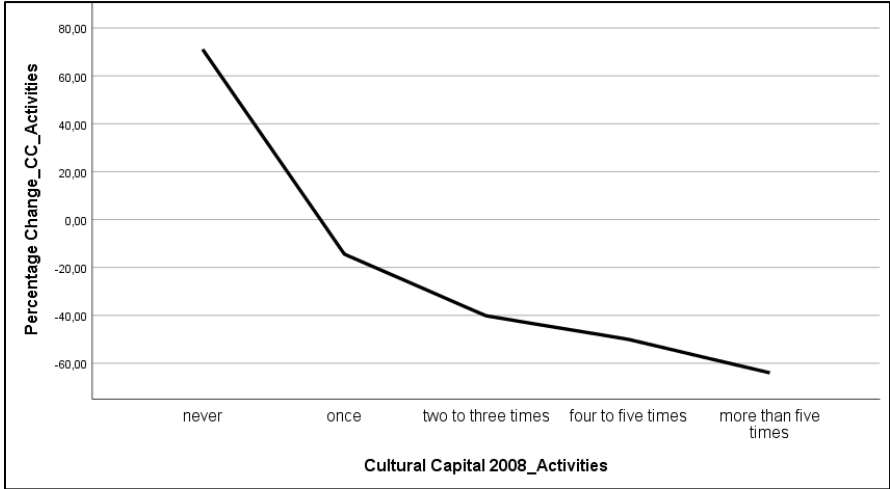
**Hypothesis 2a:** *Education does affect the relationship between the relative change from cultural starting capital and cultural ending capital.*

For *cultural capital activities*, the ANOVA showed a statistically significant main effect for Cultural\_Activ\_2008,  $F(4, 236) = 23.703, p < 0.05$ . Furthermore, there was no statistically significant main effect for Education  $F(4, 236) = 1,324, p = .262$ . There was also no interaction effect,  $F(13, 236) = 1.538, p = 1.05$ .

For *cultural capital reading culture*, the ANOVA revealed a statistically significant main effect for *ReadingFrequency\_2008*,  $F(4, 236) = 13,917, p < 0.05$ . Furthermore, there was no statistically significant main effect for *Education*  $F(4, 236) = 0.579, p = 0.678$ . There was also no interaction effect,  $F(13,236) = 0.794, p = 0.667$ .

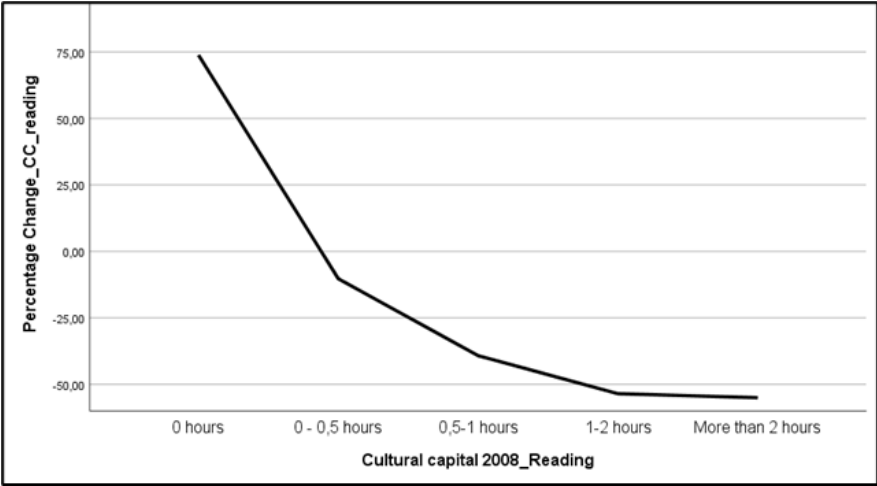
The relationships are visualized in figures 2 and 3. These graphs indicate that for both forms of cultural capital, the higher one starts with cultural capital, the stronger the percentage decline.

**Figure 2:** Cultural Capital activities change 2008-2018



Note: This graph shows the percentage change between 2008 and 2018 per starting cultural capital (2008) in activities (never – more than five times)

**Figure 3:** Cultural Capital reading change 2008-2018



Note. This graph shows the percentage change between 2008 and 2018 per starting cultural capital (2008) in reading habits (0 hours – More than 2 hours).

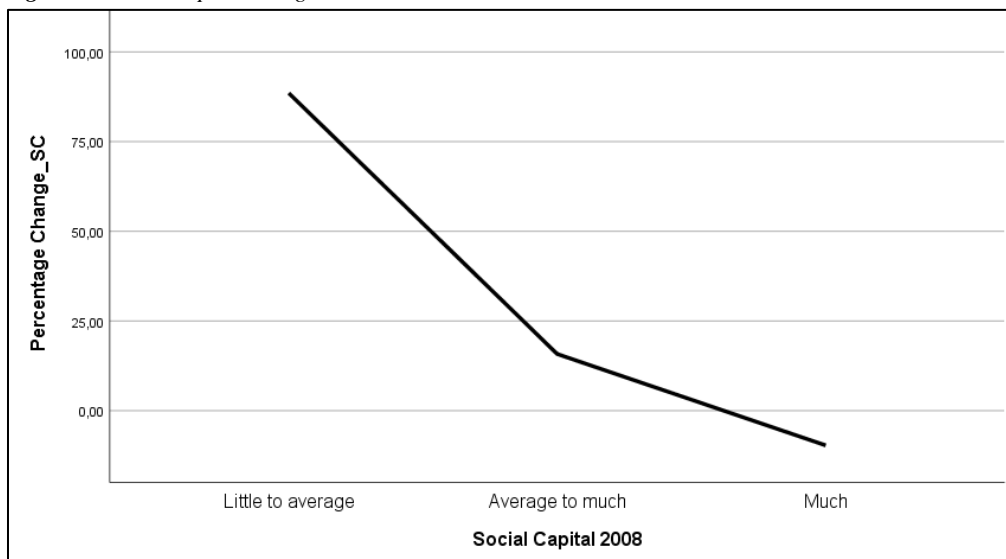
**Hypothesis 2a:** *People with lower social starting capital, will not increase more than people who start with higher social starting capital.*

**Hypothesis 2b:** *Education does affect the relationship between the relative change from social starting capital and social ending capital.*

The ANOVA revealed a statistically significant main effect for *social capital\_2008*  $F(2, 243) = 27.792, p < 0.05$ . There was also a significant main effect for Education  $F(4, 243) = 4.092, p < 0.05$ . There was no statistically significant interaction effect  $F(8, 243) = 1.771, p = 0.083$ .

Figure 4 visualizes the relationship of social capital. It indicates that if you have a lower score in 2008, your social capital increases considerably over time and if you have a higher score, your social capital decreases over time.

**Figure 4:** *Social Capital change 2008-2018*



Note: This graph shows the percentage change between 2008 and 2018 per starting social capital (2008) (Little to average – much)

**Hypothesis 3a:** *People with lower economic starting capital, will not increase more than people who start with higher economic starting capital.*

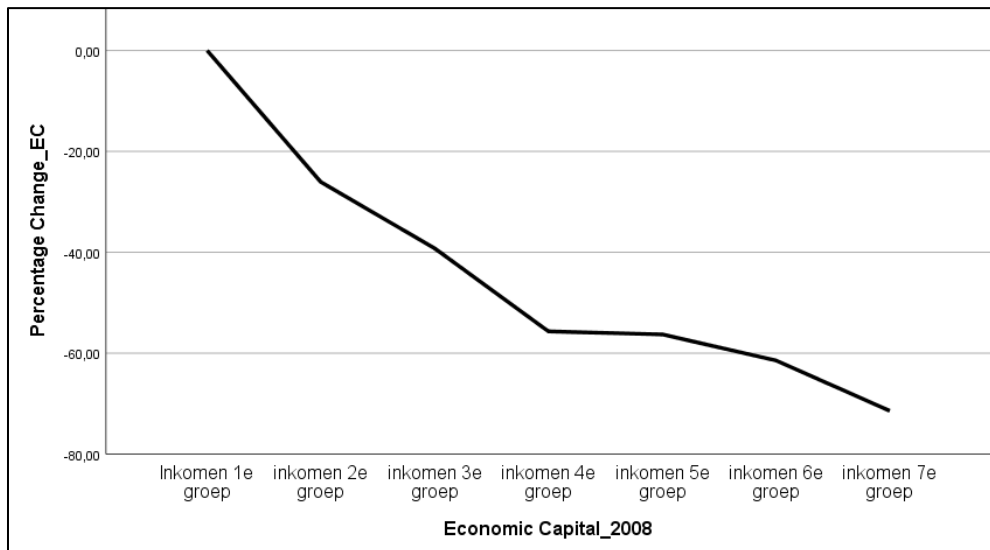
**Hypothesis 3b:** *Education does affect the relationship between the relative change from economic starting capital and economic ending capital.*

The ANOVA showed a statistically significant main effect for *Economic capital\_2008*  $F(6, 227) = 8.241, p < 0.05$ . Furthermore, there was not a statistically significant main effect for Education  $F(4, 227) = .890, p = 0.471$ . There was also no statistically significant interaction effect  $F(17, 227) = 0.676, p = 0.825$ .

Figure 5 visualizes the relationship of economic capital. It indicates that for all

economic starting capital, the economic capital decreases over time. Furthermore, the higher the economic starting capital, the higher the percentage decrease over time.

**Figure 5: Economic capital change 2008-2018**



*Note: This graph shows the percentage change between 2008 and 2018 per starting economic capital (2008) (income group 1 – income group 7)*

## **Analysis 2: One-Way Between Groups ANOVA**

**Hypothesis 1c:** *There is a statistically significant difference between the groups (measured in the degree of cultural starting capital) in cultural ending capital.*

The ANOVA for *cultural capital activities\_2018* was not statistically significant  $F(4, 256), p = 0.716$ . The ANOVA for *cultural capital reading\_2018* was also not statistically significant  $F(4, 256), p = 0.334$ .

**Hypothesis 2c:** *There is a statistically significant difference between the groups (measured in the degree of social starting capital) in social ending capital.*

The ANOVA for *Social capital\_2018* was statistically significant,  $F(2, 258), p < 0.05$ . Post hoc analyses with Bonferonni (using an  $\alpha = .05$ ) revealed that the group *Little to average* ( $M = 1.89, SD = 0.78$ ) had significant lower social capital than the other groups. Furthermore, the group *Average to Much* ( $M = 2.32, SD = 0.80$ ) had significant higher social capital than the group *Little to average* and significant lower social capital than the group *Much* ( $M = 2.71, SD = 0.51$ ). The group *Much* had significant higher scores than the other groups. The effect size was  $\eta^2 = .198$ , indicating a large effect. (Field, 2018)

**Hypothesis 3c:** *There is a statistically significant difference between the groups (measured in the degree of economic starting capital) in economic ending capital.*

The ANOVA for Economic Capital\_2018 was statistically significant,  $F(6, 251), p < 0.005$ . Post hoc analyses with Bonferonni (using  $\alpha = .05$ ) revealed that the group *income group 1* ( $M = 1, SD = 0,00$ ) had significant lower score than group *income 5* ( $M = 2.19, SD = 0.93$ ) and *income group 6* ( $M = 2.31, SD = 1.17$ ). Furthermore, Group *income 2* ( $M = 1.48, SD = 0.51$ ) had significant lower score than group *income 6*. The effect size was  $\eta^2 = .107$ , indicating a medium effect (Field, 2018).

The abovementioned results of the different forms of capital are visualized in table 4. It shows that for cultural capital there were no significant differences between the groups, measured in degree of starting capital. Furthermore, for social and economic capital there were significant differences between the groups, measured in degree of starting capital.

**Table 4.** ANOVA – Cultural, Social and Economic Capital in 2018.

		df	F	$\eta^2$	P
Cultural capital 2018	Activities	4	,527	-	,716
	Reading	4	1,149	-	,334
Social capital 2018		2	31,751	,198	,000
Economic capital 2018		6	5,000	,107	,000

*Note: As there were no significant results for cultural capital, the effect sizes were also not included. Significant at the  $p < .05$  level.*

### **Analysis 3: Paired samples t-tests**

**Hypothesis 1d:** *There is a statistically significant difference between cultural starting capital and cultural ending capital.*

For cultural *Capital\_Activities*, five paired samples *t* test were performed with an  $\alpha$  of 0.05 to compare cultural capital in 2018 and cultural in 2008. For every group there was a significant difference.

For cultural *Capital\_Reading*, also five samples *t* tests were performed with an  $\alpha$  of 0.05. For every group there was a significant difference. except for the *group 0 – 0,5 hours* ( $M = 0.21, SD = 1.12$ ).

**Hypothesis 2d:** *There is a statistically significant difference between the groups (measured in the degree of social starting capital) in social ending capital.*

For *Social Capital*, three paired samples *t* tests were performed with an  $\alpha$  of 0.05. For every group there was a significant difference.

**Hypothesis 3d:** *There is a statistically significant difference between social starting capital and social ending capital.*

For *Economic Capital*, seven paired samples *t* tests were performed with an  $\alpha$  of 0.05. For every group there was a significant difference.

Table 5 shows the results of the paired samples *t* Tests.

**Table 5:** Results of sampled paired *t*-tests.

	2008		2018		df	95% CI for Mean Difference	t
	M	SD	M	SD			
<b>Cultural capital Activities</b>							
Never	1,00	0,00	1,71	1,08	44	-1,04 - -,39	-4,42*
Once	2,00	0,00	1,71	0,81	89	0,12 – 0,46	3,39*
Two to three times	3,00	0,00	1,79	0,86	91	1,03 – 1,39	13,48*
Four to five times	4,00	0,00	2,00	0,83	23	1,65 – 2,36	11,75*
More than five times	5,00	0,00	1,80	1,67	9	1,99 – 4,40	6,00*
<b>Cultural Capital_Reading</b>							
0 hours	1,00	0,00	1,74	1,08	83	-0,97 - -0,50	-6,28*
0 – 0,5 hours	2,00	0,00	1,79	1,12	33	-0,19 - 0,60	1,08
0,5 – 1 hours	3,00	0,00	1,82	1,13	50	0,86 – 1,50	7,46*
1 – 2 hours	4,00	0,00	1,86	1,05	63	1,88 – 2,40	16,28*
More than 2 hours	5,00	0,00	2,25	1,29	27	2,25 – 3,25	11,24*
<b>Social Capital</b>							
Little to average	1,00	0,00	1,89	0,78	60	-1,08 - - 0,69	-8,90*
Average to much	2,00	0,00	2,32	0,80	75	-0,50 - -0,13	-3,43*
Much	3,00	0,00	2,71	0,51	123	0,20 – 0,38	6,38*
<b>Economic capital</b>							
Income group 1	1,00	0,00	1,00	0,00	-	-	-
Income group 2	2,00	0,00	1,48	0,51	22	0,30 – 0,74	4,90*
Income group 3	3,00	0,00	1,82	0,98	50	0,90 – 1,45	8,62*



Income group 4	4,00	0,00	1,78	1,08	43	1,90 – 13,74	13,74*
Income group 5	5,00	0,00	2,19	0,93	42	2,52 – 3,10	19,79*
Income group 6	6,00	0,00	2,31	1,19	82	3,43 – 3,94	28,50*
Income group 7	7,00	0,00	2,00	1,00	2	2,52 – 7,49	8,67*

Note: \*  $p < .05$ .

To summarize, the main analysis confirmed that for cultural capital (H1a), social capital (H2a) and economic capital (H3a), the following applies: People with lower starting capital, will not increase more than people who start with higher starting capital. Education however has no influence on this relationship and therefore rejecting the hypotheses regarding education on the relationship in relation to cultural (H1b), social (H2b) and economic capital (H3b). Furthermore, there are significant differences between the groups in ending capital, applying for social capital (H2c) and economic capital (H3c). This does not apply for cultural capital (H1c), indicating that there are no significant differences between the groups of cultural capital. Finally, there are significant differences between cultural (H1d), social (H2d) and economic (H3d) capital in 2008 and these capitals in 2018, with a small exception regarding the 0-0.5 group of cultural capital.

## Discussion

### Main conclusions

The focus of this research was to measure (1) the change in an individual's capital over time. More specifically, (2) the role of education in this change. In addition, (3) the differences between the groups were examined and the groups were divided into the level of possession of different forms of capital. The abovementioned three components were summarized in the research question: *To what extent does education contribute to the differences in obtaining future cultural, social and economic capital?* The main question was accompanied by six subquestions.

For the first subquestion (Q1), *To what extent does education contribute to changing one's cultural capital?* It can be concluded that education does not play a role in the relative change of someone's cultural capital over time.

For the second subquestion (Q2), *To what extent does education contribute to reducing the differences in cultural capital?* As education does not contribute to the relationship of capital change over time, it also does not contribute to reducing the differences in cultural capital.

However, the analysis did follow that someone's starting cultural capital does contribute to the change in someone's ending capital. So, when looking at the differences in outcome it can be concluded that: people who start with few cultural activities and a low reading culture, they increase over time. The other groups, the ones that have average to high cultural starting capital, decrease over time, but the amount of the decrease differs. It can be concluded that the higher the cultural starting capital, the higher the decline over time relative to other groups of cultural starting capital. Finally, it can be concluded that regardless of your starting cultural capital, you end up at the same point as others.

For the third subquestion (Q3), *To what extent does education contribute to changing one's social capital?* It can be concluded that education affects the relative increase of social capital.

For the fourth subquestion (Q4): *To what extent does education contribute to reducing the differences in social capital?* It can be concluded that education doesn't contribute to reducing the differences in social capital. However, social starting capital does affect this phenomenon. It can be concluded that when you start with a higher starting social capital, you will eventually finish higher. In addition, although people with lower starting social capital catch up over time, they will not be able to level with people who start with higher starting social capital.

For the fifth subquestion (Q5): *To what extent does education contribute to changing one's economic capital?* It can be concluded that education does not contribute to the change of someone's economic capital.

For the sixth subquestion (Q6): *To what extent does education contribute to reducing the differences in economic capital?* It can be concluded that education doesn't contribute to reducing the differences in economic capital. However, it can be concluded that economic starting capital does affect this relationship. Furthermore, there are differences in change of economic capital between groups. Although each group decreases in economic capital, the higher your economic starting capital, the stronger the decrease. In addition, when you start with a higher economic starting capital, over time you will also have more economic capital compared to people who start with lower starting capital.

## **Theoretical reflection of the results**

This section describes theoretical explanations of the abovementioned conclusions. A distinction is made per form of capital.

### *Cultural capital (Q1 and Q2)*

For cultural capital, regardless your starting capital, you will end up at about the same point as others. This phenomenon can be explained in several ways. First, access to highbrow activities as Bourdieu described it, is only accessible to the upper class (Goldthorpe, 2007). However, today access to cultural activities is not divided by class, as these activities are more accessible to a wider audience and do not adhere to classes. Another explanation for this convergence of cultural capital is, that over time, children from lower social classes have the opportunity to adopt behavioral codes of children from higher social classes (DiMaggio, 1982). When children with lower cultural capital have the opportunity to participate in cultural activities in which children from higher social classes participate, this also allows them to achieve a higher cultural position. At the same time, children with higher starting cultural capital do not have a group to compare upward, so over time both groups end up at the same point.

### *Social Capital (Q3 and Q4)*

For social capital, education does affect the increase in social capital. This can be substantively explained by the fact that being educated, school acts as a gathering of people, which can increase the network (embedded in social capital) of people through interaction (Lanzi, 2007).

Besides, it was concluded that when you start with higher starting social capital, you will also end up with higher social capital compared to people with lower social capital. An explanation for this phenomenon may have to do with the homogeneity principle (Lin, 2008). This states that people from a lower socio-economic class are more likely to have a homogeneous network than people from a higher socio-economic class, who are more likely to have a heterogeneous network. Due to the homogeneity of network, there is a more unequal access to social capital compared to people with a heterogeneous network. This may explain why a lower starting social capital may result in never being able to obtain a higher final social capital compared to people who start with a higher starting social capital.

### *Economic capital (Q5 and Q6)*

For economic capital the results showed that for every group, your economic capital decreases over time. An explanation for this can be found in the fact that when you just start in the labor

market, you start relatively with a lower income than your parents (Bierings, 2017).

Therefore, a decrease can be observed for each group.

In addition, it was concluded that when you start with a higher economic capital, over time you will also have more economic capital compared to people who start with a lower starting capital. An explanation for this can be found in the social reproduction theory (Bhattacharya, 2017), in which having more access to capital at the beginning, translates itself into having more access to capital later in life.

### **Methodological reflection**

This section describes a reflection on methodological issues and provides implications for future research.

When it comes to the internal validity, a reflection is needed in measuring the variables cultural capital and education. Cultural capital in this study was measured using a form that is static, namely highbrow activities and reading culture, another form is the institutionalized form. This form represents the cultural interaction and communication of parents with children. This includes, for example, social, societal and political discussions between parents and children (Tramonte & Willms, 2010). This component of cultural capital includes the idea of engagement and cultural interests. Willms (2003) suggests that engagement in society and engagement in school are important factors when it comes to successful outcomes in education. However, in this study, the institutionalized form of capital was not measured, but the embodied state, which is a reflection of the individual's interests. This form has a modest effect on student outcomes.

In addition to the variable cultural capital, there are also concerns about the variable education. Indeed, in this study, education was measured by grade level. An important success factor of school is also someone's motivation and time invested in courses (De Graaf & Kraaykamp, 2000). In addition, the curriculum set from the educational institution in achieving success also influences the contribution that cultural capital can make to it. An explanation for the lack of the interaction effect on education on every form of capital, could be that the internal validity is at stake. Regarding economic capital, education level is not a good reflection for one's economic capital. Someone who has just graduated from a university education will be able to earn as much as someone who has been working for some time in the construction industry, which requires a lower level of education (Karthaus, 2020). Since this is the age group in 2018, 25-34, it is difficult to say what the effect of education is on the percentage change. When someone is employed longer, they will also earn more, but this

often takes a couple of years.

In short, it can be said that the measurement instruments do not include the constructs to see an interaction effect. This is why for future research; the variable education should be operationalized more accurately.

Besides the internal validity, there are also concerns about the reliability. This is due to the violation of the assumption homogeneity of variances. Since the distribution of different education levels are not equally distributed, there is a chance of erroneously rejecting the 0 hypothesis (Parra-Frutos, 2013). This could be the reason that there was an effect of education in the increase in social capital for example. For follow-up research, it is desirable to have an approximately same amount of variance in each group of scores.

### **Concluding remarks**

Although no effects of education on relative capital change were found, this study did show that your starting capital is an important factor in capital development. For example, it appears that when you start out with relatively more capital, you also end up with relatively more capital. This research has shown that there are mutual differences in the possession of capital and that these differences continue to exist later on. This applies for social and economic capital, but not for cultural capital. With this result, the social reproduction of cultural capital should be reviewed in contemporary society, as it goes against Bourdieu's expectations.

Furthermore, this research began with the concept of socioeconomic status, which included three forms of capital. During the course of the study, I came to understand that I needed to separate the three forms of capital for substantive and methodological reasons. Although Bourdieu speaks of convertibility of capital, it was underexamined in this study and could be taken up by a subsequent researcher. For me, this research is now over and I would encourage others to pick up the thread here. During the course of the research process, I encountered content and methodological limitations, but I believe that this research has made a small contribution to the inequality of opportunity debate, examining the role of education on equalizing the society, approached from the perspective of Bourdieu and his forms of capital.

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## Appendix A: Ethical Approval

<b>P.O. Box 80140, 3508 TC Utrecht</b>  The Board of the Faculty of Social and Behavioural Sciences Utrecht University P.O. Box 80.140 3508 TC Utrecht	<b>Faculty of Social and Behavioural Sciences</b>  Faculty Support Office Ethics Committee  <b>Visiting Address</b>  Padualaan 14 3584 CH Utrecht
<b>Our Description</b> 21-0230 <b>Telephone</b> 030 253 46 33 <b>E-mail</b> FETC-fsw@uu.nl <b>Date</b> 15 July 2021 <b>Subject</b> Ethical approval	

### ETHICAL APPROVAL

Study: Social mobility through education in an European context

Principal investigator: R.R. van Hoogstraten

Supervisor: Marcel Hoogenboom

The study is approved by the Ethical Review Board of the Faculty of Social and Behavioural Sciences of Utrecht University. The approval is based on the documents sent by the researchers as requested in the form of the Ethics committee and filed under number 21-0230. The approval is valid through 30 June 2021. The approval of the Ethical Review Board concerns ethical aspects, as well as data management and privacy issues (including the GDPR). It should be noticed that any changes in the research design oblige a renewed review by the Ethical Review Board.

Yours sincerely,

Peter van der Heijden, Ph.D.  
Chair

This is an automatically generated document, therefore it is not signed

## Appendix B: Syntax

\* Encoding: UTF-8.

GET DATA

/TYPE=XLSX

/FILE="\\Client\C\$\Users\rvanh\OneDrive\Documenten\Master\Masterthesis\Datacollection\Dataset  
'+

'officieel\Thesis\_SES1\_SES2\_Education (7)\data.xlsx'

/SHEET=name 'data'

/CELLRANGE=FULL

/READNAMES=ON

/DATATYPEMIN PERCENTAGE=95.0

/HIDDEN IGNORE=YES.

EXECUTE.

DATASET NAME DataSet1 WINDOW=FRONT.

DATASET ACTIVATE DataSet2.

FILTER OFF.

USE ALL.

SELECT IF (Leeftijd = 1).

EXECUTE.

FILTER OFF.

USE ALL.

SELECT IF (1-NMISS(cw18k002)).

EXECUTE.

FILTER OFF.

USE ALL.

SELECT IF (1-NMISS(nettohh\_f)).

EXECUTE.

FILTER OFF.

USE ALL.

SELECT IF (1-NMISS(cs18k288)).

EXECUTE.

DATASET ACTIVATE DataSet1.

FREQUENCIES VARIABLES=nomem\_encr wave cs08a103 cs08a105 cs08a124 cs08a127 cs08a380  
cs08a131

cs08a160 cs08a161 cs08a163 cs08a164 cs08a165 cs08a167 cs08a169 cs08a173 cs08a180 cs08a182  
cs08a381

cs08a382 cs08a384 cs08a385 cs08a386 cs08a388 cs08a390 cs08a394 cs08a401 cs08a403 cs08a284  
cs08a285

cs08a286 cs08a287 cs08a288 cw08a002 cw08a003 Leeftijd cw08a005 cw08a008 cw08a045  
cw08a062 cw08a079

ci08a001 ci08a002 ci08a005 gebjaar leeftijd\_A lftdcat brutoink nettoink netinc nettoink\_f nettohh\_f  
oplzon oplmet oplcat doetmee cw18k002 cw18k003 cw18k005 cw18k008 cw18k045 cw18k062  
cw18k079

ci18k002 ci18k326 ci18k005 cs18k103 cs18k105 cs18k124 cs18k127 cs18k380 cs18k131  
cs18k160 cs18k161

cs18k163 cs18k164 cs18k165 cs18k167 cs18k169 cs18k173 cs18k180 cs18k182 cs18k381  
cs18k382 cs18k384

cs18k385 cs18k386 cs18k388 cs18k390 cs18k394 cs18k401 cs18k403 cs18k284 cs18k285  
cs18k286 cs18k287

cs18k288 filter\_\$

/STATISTICS=STDDEV VARIANCE MINIMUM MAXIMUM MEAN MEDIAN MODE

/ORDER=ANALYSIS.

CORRELATIONS

/VARIABLES=cs08a284 cs08a285 cs08a286 cs08a287 cs08a288

/PRINT=TWOTAIL NOSIG

/STATISTICS DESCRIPTIVES

/MISSING=PAIRWISE.

DESCRIPTIVES VARIABLES=cs08a284 cs08a285 cs08a286 cs08a287 cs08a288 cs18k284  
cs18k285 cs18k286

cs18k287 cs18k288

/STATISTICS=MEAN STDDEV MIN MAX.

FREQUENCIES VARIABLES=cs08a284 cs08a285 cs08a286 cs08a287 cs08a288 cs18k284  
cs18k285 cs18k286

cs18k287 cs18k288

/STATISTICS=STDDEV VARIANCE MINIMUM MAXIMUM MEAN MEDIAN MODE

/ORDER=ANALYSIS.

RECODE cs08a285 cs08a286 cs08a287 cs18k285 cs18k286 cs18k287 (1=3) (2=2) (3=3) INTO  
cs08285\_O

cs08a286\_O cs08a287\_O cs18k285\_O cs18k286\_O cs18k287\_O.

EXECUTE.

RMV /cs08a284\_1=SMEAN(cs08a284) /cs08a288\_1=SMEAN(cs08a288)  
/cs08285\_O\_1=SMEAN(cs08285\_O)

/cs08a286\_O\_1=SMEAN(cs08a286\_O) /cs08a287\_O\_1=SMEAN(cs08a287\_O).

CORRELATIONS

/VARIABLES=cs08a284\_O cs08a288\_O cs08a285\_O cs08a286\_O\_1 cs08a287\_O\_1 cs18k285\_O  
cs18k286\_O

cs18k287\_O cs18k284 cs18k288

/PRINT=TWOTAIL NOSIG

/STATISTICS DESCRIPTIVES

/MISSING=PAIRWISE.

RELIABILITY

/VARIABLES=cs08a284\_O cs08a288\_O cs08a285\_O cs08a286\_O\_1 cs08a287\_O\_1 cs18k284  
cs18k285\_O

cs18k286\_O cs18k287\_O cs18k288

/SCALE('ALL VARIABLES') ALL

/MODEL=ALPHA

/STATISTICS=DESCRIPTIVE SCALE CORR

/SUMMARY=TOTAL MEANS VARIANCE CORR.

## RELIABILITY

```
/VARIABLES=cs08a284_O cs08a288_O cs08a285_O cs08a287_O_1 cs18k284 cs18k285_O  
cs18k286_O
```

```
cs18k287_O cs18k288
```

```
/SCALE('ALL VARIABLES') ALL
```

```
/MODEL=ALPHA
```

```
/STATISTICS=DESCRIPTIVE SCALE CORR
```

```
/SUMMARY=TOTAL MEANS VARIANCE CORR.
```

## FACTOR

```
/VARIABLES cs08a284_O cs08a288_O cs08a285_O cs08a286_O_1 cs08a287_O_1 cs18k284  
cs18k285_O
```

```
cs18k286_O cs18k287_O cs18k288
```

```
/MISSING LISTWISE
```

```
/ANALYSIS cs08a284_O cs08a288_O cs08a285_O cs08a286_O_1 cs08a287_O_1 cs18k284  
cs18k285_O
```

```
cs18k286_O cs18k287_O cs18k288
```

```
/PRINT UNIVARIATE INITIAL EXTRACTION
```

```
/CRITERIA MINEIGEN(1) ITERATE(25)
```

```
/EXTRACTION PC
```

```
/ROTATION NOROTATE
```

```
/SAVE REG(ALL)
```

```
/METHOD=CORRELATION.
```

## COMPUTE

```
SocialCapital_08=MEAN(cs08a284_O,cs08a288_O,cs08a285_O,cs08a286_O_1,cs08a287_O_1).
```

```
EXECUTE.
```

```
COMPUTE SocialCapital_18=MEAN(cs18k284,cs18k285_O,cs18k286_O,cs18k287_O,cs18k288).
```

```
EXECUTE.
```

## REGRESSION

```
/DESCRIPTIVES MEAN STDDEV CORR SIG N
```

```
/MISSING LISTWISE
/STATISTICS COEFF OUTS R ANOVA CHANGE
/CRITERIA=PIN(.05) POUT(.10)
/NOORIGIN
/DEPENDENT SocialCapital_18
/METHOD=ENTER SocialCapital_08
/SCATTERPLOT=(*ZRESID ,*ZPRED)
/SAVE PRED ZPRED ADJPRED COOK RESID ZRESID.
```

#### REGRESSION

```
/MISSING LISTWISE
/STATISTICS COEFF OUTS R ANOVA COLLIN TOL
/CRITERIA=PIN(.05) POUT(.10)
/NOORIGIN
/DEPENDENT SocialCapital_18
/METHOD=ENTER SocialCapital_08
/SCATTERPLOT=(*ZRESID ,*ZPRED)
/RESIDUALS NORMPROB(ZRESID)
/SAVE PRED ZPRED ADJPRED COOK RESID ZRESID.
```

```
DATASET ACTIVATE DataSet1.
```

```
FILTER OFF.
```

```
USE ALL.
```

```
SELECT IF (1-NMISS(ci08a005)).
```

```
EXECUTE.
```

```
DESCRIPTIVES VARIABLES=cs08a105t cs08a380t cs08a384t cs08a385t cs08a386t cs08a388t
cs08a390t
```

```
cs08a394t cs08a401t cs08a403t cs18k105t cs18k380t cs18k384t cs18k385t cs18k386t cs18k388t
cs18k390t
```

```
cs18k394t cs18k401t cs18k403t cs18k382t
```

```
/STATISTICS=MEAN STDDEV MIN MAX.
```

## RELIABILITY

```
/VARIABLES=cs08a380t cs08a105t cs08a382t cs08a384t cs08a385t cs08a386t cs08a388t cs08a390t  
cs08a394t cs08a401t cs08a403t cs08a381t cs18k105t cs18k380t cs18k381t cs18k382t cs18k384t  
cs18k385t  
cs18k386t cs18k388t cs18k390t cs18k394t cs18k401t cs18k403t  
/SCALE('ALL VARIABLES') ALL  
/MODEL=ALPHA  
/STATISTICS=DESCRIPTIVE SCALE CORR  
/SUMMARY=TOTAL.
```

```
DESCRIPTIVES VARIABLES=cs08a124 cs08a127 cs08a160 cs08a161 cs08a163 cs08a164  
cs08a165 cs08a167  
cs08a169 cs08a173 cs08a180 cs08a182 cs18k124 cs18k127 cs18k160 cs18k161 cs18k163  
cs18k164 cs18k165  
cs18k167 cs18k169 cs18k173 cs18k180 cs18k182  
/STATISTICS=MEAN STDDEV MIN MAX.
```

## RELIABILITY

```
/VARIABLES=cs08a124 cs08a127 cs08a160 cs08a161 cs08a163 cs08a164 cs08a165 cs08a167  
cs08a169  
cs08a173 cs08a180 cs08a182 cs18k124 cs18k127 cs18k160 cs18k161 cs18k163 cs18k164  
cs18k165 cs18k167  
cs18k169 cs18k173 cs18k180 cs18k182  
/SCALE('ALL VARIABLES') ALL  
/MODEL=ALPHA  
/STATISTICS=DESCRIPTIVE SCALE CORR  
/SUMMARY=TOTAL.
```

## RELIABILITY

```
/VARIABLES=cs08a160 cs08a161 cs08a163 cs08a164 cs08a165 cs08a167 cs08a169 cs08a173  
cs08a180  
cs08a182 cs18k124 cs18k127 cs18k160 cs18k161 cs18k163 cs18k164 cs18k165 cs18k167  
cs18k169 cs18k173  
cs18k180 cs18k182  
/SCALE('ALL VARIABLES') ALL
```

/MODEL=ALPHA

/STATISTICS=DESCRIPTIVE SCALE CORR

/SUMMARY=TOTAL.

COMPUTE cs08a105tO=cs08a105t \* 60.

EXECUTE.

COMPUTE

CulturalCapitalactivitiestime2008=Sum(cs08a380t,cs08a381t,cs08a382t,cs08a384t,cs08a385t,  
cs08a386t,cs08a388t,cs08a390t,cs08a394t,cs08a401t,cs08a403t,cs08a105tO).

EXECUTE.

COMPUTE

CulturalCapit\_actdays\_08=mean(cs08a124,cs08a127,cs08a160,cs08a161,cs08a163,cs08a164,  
cs08a165,cs08a167,cs08a169,cs08a173,cs08a180,cs08a182).

EXECUTE.

COMPUTE CC\_08\_Instrument=cs08a381t \* cs08a160.

EXECUTE.

DATASET ACTIVATE DataSet1.

COMPUTE CC\_08\_Singing=cs08a161 \* cs08a382t.

EXECUTE.

COMPUTE CC\_08\_ModelBuild=cs08a163 \* cs08a384t.

EXECUTE.

COMPUTE CC\_08\_Handcraft=cs08a164 \* cs08a385t.

EXECUTE.

COMPUTE CC\_08\_Photography=cs08a165 \* cs08a386t.

EXECUTE.



```
COMPUTE CC_08_Handwork=cs08a167 * cs08a388t.  
EXECUTE.
```

```
COMPUTE CC_08_reading=cs08a169 * cs08a390t.  
EXECUTE.
```

```
COMPUTE CC_08_drama=cs08a173 * cs08a394t.  
EXECUTE.
```

```
COMPUTE CC_08_cinema=cs08a180 * cs08a401t.  
EXECUTE.
```

```
COMPUTE CC_08_listmusic=cs08a182 * cs08a403t.  
EXECUTE.
```

```
COMPUTE  
CC_08_TotalweekMin=sum(CC_08_Radio,CC_08_Instrument,CC_08_Singing,CC_08_ModelBuild,  
CC_08_Handcraft,CC_08_Photography,CC_08_Handwork,CC_08_reading,CC_08_drama,CC_08_ci  
nema,  
    CC_08_listmusic).  
EXECUTE.
```

```
DESCRIPTIVES VARIABLES=CC_08_Radio CC_08_Instrument CC_08_Singing  
CC_08_ModelBuild CC_08_Handcraft  
    CC_08_Photography CC_08_Handwork CC_08_reading CC_08_drama CC_08_cinema  
CC_08_listmusic  
/STATISTICS=MEAN STDDEV MIN MAX.
```

```
COMPUTE CC_08_TotalWeek_hours=cs08a105t + (CC_08_TotalweekMin / 60).  
EXECUTE.
```

```
COMPUTE CC_18_Radio=cs18k127 * cs18k380t.  
EXECUTE.
```

COMPUTE CC\_18\_Instrument=cs18k160 \* cs18k381t.  
EXECUTE.

COMPUTE CC\_18\_Singing=cs18k161 \* cs18k382t.  
EXECUTE.

COMPUTE CC\_18\_ModelBuild=cs18k163 \* cs18k384t.  
EXECUTE.

COMPUTE CC\_18\_Handcraft=cs18k164 \* cs18k385t.  
EXECUTE.

COMPUTE CC\_18\_Photography=cs18k165 \* cs18k386t.  
EXECUTE.

COMPUTE CC\_18\_Handwork=cs18k167 \* cs18k388t.  
EXECUTE.

COMPUTE CC\_18\_reading=cs18k169 \* cs18k390t.  
EXECUTE.

COMPUTE CC\_18\_Drama=cs18k173 \* cs18k394t.  
EXECUTE.

COMPUTE CC\_18\_Goingout=cs18k401t \* cs18k180.  
EXECUTE.

COMPUTE CC\_18\_Music=cs18k182 \* cs18k403t.  
EXECUTE.

COMPUTE

CC\_18\_TotalweekMin=sum(CC\_18\_Instrument,CC\_18\_Singing,CC\_18\_ModelBuild,CC\_18\_Handcraft,

CC\_18\_Photography,CC\_18\_Handwork,CC\_18\_reading,CC\_18\_Drama,CC\_18\_Goingout,CC\_18\_Music,CC\_18\_Radio).

EXECUTE.

COMPUTE CC\_18\_TotalWeek\_hours=cs18k105t + (CC\_18\_TotalweekMin / 60).

EXECUTE.

CORRELATIONS

/VARIABLES=CC\_18\_TotalWeek\_hours CC\_08\_TotalWeek\_hours

/PRINT=TWOTAIL NOSIG

/STATISTICS DESCRIPTIVES

/MISSING=PAIRWISE.

DATASET ACTIVATE DataSet1.

EXAMINE VARIABLES=nettoink\_f nettohh\_f

/PLOT BOXPLOT STEMLEAF

/COMPARE GROUPS

/STATISTICS DESCRIPTIVES

/CINTERVAL 95

/MISSING LISTWISE

/NOTOTAL.

DESCRIPTIVES VARIABLES=nettoink\_f nettohh\_f

/STATISTICS=MEAN STDDEV MIN MAX SKEWNESS.

EXAMINE VARIABLES=nettoink\_f nettohh\_f

/PLOT BOXPLOT

/COMPARE VARIABLES

/STATISTICS NONE

/CINTERVAL 95

/MISSING LISTWISE

/NOTOTAL.

RECODE Moderator (28=SYSMIS) (1 thru 3=1) (4 thru 10=2) (11 thru 15=3) (16 thru 19=4) (20 thru 22=5) (23 thru 27=6) INTO EducationlevelCAT\_mod.

VARIABLE LABELS EducationlevelCAT\_mod 'Educationlevel in cat\_MOD'.

EXECUTE.

DATASET ACTIVATE DataSet1.

EXAMINE VARIABLES=CC\_18\_TotalWeek\_hours CC\_08\_TotalWeek\_hours

/PLOT BOXPLOT NPLOT

/COMPARE VARIABLES

/STATISTICS DESCRIPTIVES

/CINTERVAL 95

/MISSING LISTWISE

/NOTOTAL.

DATASET ACTIVATE DataSet1.

EXAMINE VARIABLES=CC\_18\_TotalWeek\_hours CC\_08\_TotalWeek\_hours

/PLOT BOXPLOT HISTOGRAM NPLOT

/COMPARE GROUPS

/STATISTICS DESCRIPTIVES

/CINTERVAL 95

/MISSING LISTWISE

/NOTOTAL.

FREQUENCIES VARIABLES=CC\_18\_TotalWeek\_hours CC\_08\_TotalWeek\_hours

/STATISTICS=SKEWNESS SESKEW KURTOSIS SEKURT

/HISTOGRAM NORMAL

/ORDER=ANALYSIS.

DATASET ACTIVATE DataSet3.

COMPUTE CULTCC08GOED=(cs08a105t)+(cs08a160 \*

cs08a381t)+(cs08a161\*cs08a382t)+(cs08a163\*cs08a384t)+cs08a164\*cs08a385t+cs08a165\*cs08a386  
t+cs08a167\*

cs08a388t+cs08a169\*cs08a390t+cs08a173\*cs08a394t+cs08a180\*cs08a401t+cs08a182\*cs08a403t.

EXECUTE.

COMPUTE CULTCC08GOED=((cs08a105t)+(cs08a160 \*

cs08a381t)+(cs08a161\*cs08a382t)+(cs08a163\*cs08a384t)+cs08a164\*cs08a385t+cs08a165\*cs08a386  
t+cs08a167\*

cs08a388t+cs08a169\*cs08a390t+cs08a173\*cs08a394t+cs08a180\*cs08a401t+cs08a182\*cs08a403t)/6  
0.

EXECUTE.

COMPUTE

CULTCC18GOED=(cs18k105t+cs18k160\*cs18k381t+cs18k161\*cs18k382t+cs18k163\*cs18k384t+cs  
18k164\*

cs18k385t+cs18k165\*cs18k386t+cs18k167\*cs18k388t+cs18k169\*cs18k390t+cs18k173\*cs18k394t+c  
s18k180\*

cs18k401t+cs18k182\*cs18k403t)/60.

EXECUTE.

DATASET ACTIVATE DataSet1.

COMPUTE Hihgbrowactivities\_08=cs08a394t + cs08a401t.

EXECUTE.

COMPUTE Hihgbrowactivities\_08=cs08a173 + cs08a180.

EXECUTE.

RECODE Hihgbrowactivities\_08 (0=1) (1=2) (2 thru 3=3) (4 thru 5=4) (6 thru 12=5).

EXECUTE.

COMPUTE Music\_08=cs08a160 + cs08a161.

EXECUTE.

RELIABILITY

/VARIABLES=cs08a163 cs08a164 cs08a165 cs08a167

/SCALE('ALL VARIABLES') ALL

/MODEL=ALPHA

/STATISTICS=DESCRIPTIVE CORR

/SUMMARY=TOTAL.

COMPUTE Reading=cs08a390t / 60.

EXECUTE.

EXAMINE VARIABLES=Hihgbrowactivities\_08 Music\_08 Reading

/PLOT HISTOGRAM NPLOT

/STATISTICS DESCRIPTIVES

/CINTERVAL 95

/MISSING LISTWISE

/NOTOTAL.

COMPUTE CulturalActivities=cs08a163 + cs08a164 + cs08a165 + cs08a167 + cs08a173 + cs08a180.

EXECUTE.

RECODE CulturalActivities (0=1) (1=2) (2 thru 3=3) (4 thru 5=4) (6 thru 12=5).

EXECUTE.

RECODE cs08a131 (0=1) (1 thru 2=2) (3 thru 9=3) (10 thru Highest=4) INTO ReadingHabit\_08.

VARIABLE LABELS ReadingHabit\_08 'Reading Habit Cultural capital 2008'.

EXECUTE.

```
COMPUTE ReadingHoursaweek08=(cs08a169 * cs08a390t) / 60.
```

```
EXECUTE.
```

```
COMPUTE MusicHoursaWeek08=((cs08a160 * cs08a381t) + (cs08a161 * cs08a382t))/60.
```

```
EXECUTE.
```

```
COMPUTE ReadingFrequency_08=cs08a390t / 60.
```

```
EXECUTE.
```

```
RECODE ReadingFrequency_08 (0=1) (0.01 thru 0.5=2) (0.5 thru 1=3) (1 thru 2=4) (2 thru  
Highest=5).
```

```
EXECUTE.
```

```
COMPUTE CulturActiv_2008=MEAN(Hihgbrowactivities_08,CulturalActivities_08).
```

```
EXECUTE.
```

```
DATASET ACTIVATE DataSet1.
```

```
COMPUTE ReadingFrequency_18=cs18k390t / 60.
```

```
EXECUTE.
```

```
RECODE ReadingFrequency_18 (0=1) (0 thru 0.5=2) (0.5 thru 1=3) (1 thru 2=4) (2 thru Highest=5).
```

```
EXECUTE.
```

```
RELIABILITY
```

```
  /VARIABLES=ModelBuild_CAT18 HandCraft_CAT18 Photography_CAT18 Handwork_18CAT  
Drama_CAT18
```

```
  Cinema_CAT18
```

```
  /SCALE('ALL VARIABLES') ALL
```

```
  /MODEL=ALPHA
```

```
  /STATISTICS=DESCRIPTIVE CORR
```

```
  /SUMMARY=TOTAL.
```

```
COMPUTE CulturalActiv_2018=cs18k163 + cs18k164 + cs18k165 + cs18k167 + cs18k173 +
cs18k180.
```

```
EXECUTE.
```

```
RECODE CulturalActiv_2018 (0=1) (1=2) (2 thru 3=3) (4 thru 5=4) (6 thru Highest=5).
```

```
EXECUTE.
```

```
COMPUTE CulturalActiv_2008=cs08a163 + cs08a164 + cs08a165 + cs08a167 + cs08a173 +
cs08a180.
```

```
EXECUTE.
```

```
RECODE CulturalActiv_2008 (0=1) (1=2) (2 thru 3=3) (4 thru 5=4) (6 thru Highest=5).
```

```
EXECUTE.
```

```
FREQUENCIES VARIABLES=ReadingFrequency_08 CulturalActiv_2008 ReadingFrequency_18
CulturalActiv_2018
```

```
/STATISTICS=MINIMUM MAXIMUM MEAN
```

```
/ORDER=ANALYSIS.
```

```
* Encoding: UTF-8.
```

```
DATASET ACTIVATE DataSet1.
```

```
COMPUTE CC_08_SQRT=SQRT(CC_08_TotalWeek_hours).
```

```
EXECUTE.
```

```
ONEWAY EC2008_HH EC2018_Pers BY EducationlevelCAT_mod
```

```
/POLYNOMIAL=1
```

```
/STATISTICS DESCRIPTIVES EFFECTS HOMOGENEITY
```

```
/MISSING ANALYSIS
```

```
/POSTHOC=TUKEY BONFERRONI ALPHA(0.05).
```

```
COMPUTE EC_verandering=(EC2018_Pers - EC2008_HH)/EC2018_Pers * 100.
```

```
EXECUTE.
```



```
ONEWAY EC_verandering BY EducationlevelCAT_mod
/POLYNOMIAL=1
/STATISTICS DESCRIPTIVES EFFECTS HOMOGENEITY
/MISSING ANALYSIS
/POSTHOC=TUKEY BONFERRONI ALPHA(0.05).
```

```
COMPUTE SC_Verandering=(SC_2018 - SC_2008) .
EXECUTE.
```

```
COMPUTE CC_verandering=(CC_18_TotalWeek_hours -
CC_08_TotalWeek_hours)/CC_08_TotalWeek_hours*100.
EXECUTE.
```

```
ONEWAY SC_Verandering BY EducationlevelCAT_mod
/POLYNOMIAL=1
/STATISTICS DESCRIPTIVES EFFECTS HOMOGENEITY
/MISSING ANALYSIS
/POSTHOC=TUKEY BONFERRONI ALPHA(0.05).
```

```
ONEWAY CC_verandering BY EducationlevelCAT_mod
/POLYNOMIAL=1
/STATISTICS DESCRIPTIVES EFFECTS HOMOGENEITY
/MISSING ANALYSIS
/POSTHOC=TUKEY BONFERRONI ALPHA(0.05).
```

```
DATASET ACTIVATE DataSet1.
```

```
COMPUTE CC_verandering=(CULTCC18GOED - CULTCC08GOED) / CULTCC08GOED*100.
EXECUTE.
```

```
ONEWAY CC_verandering BY EducationlevelCAT_mod
/POLYNOMIAL=1
/STATISTICS DESCRIPTIVES EFFECTS HOMOGENEITY
```

/MISSING ANALYSIS

/POSTHOC=TUKEY BONFERRONI ALPHA(0.05).

DATASET ACTIVATE DataSet1.

UNIANOVA ProcVeranderingCC BY CulturalActiv\_2008 EducationlevelCAT\_mod

/METHOD=SSTYPE(3)

/INTERCEPT=INCLUDE

/POSTHOC=CulturalActiv\_2008 EducationlevelCAT\_mod(BONFERRONI)

/PLOT=PROFILE(CulturalActiv\_2008\*EducationlevelCAT\_mod) TYPE=LINE ERRORBAR=NO  
MEANREFERENCE=NO

YAXIS=AUTO

/PRINT ETASQ DESCRIPTIVE PARAMETER HOMOGENEITY

/CRITERIA=ALPHA(.05)

/DESIGN=CulturalActiv\_2008 EducationlevelCAT\_mod  
CulturalActiv\_2008\*EducationlevelCAT\_mod.

COMPUTE ProcVeranderingEC=((EC2018\_Pers - EC2008\_HH) / EC2008\_HH \* 100).

EXECUTE.

UNIANOVA ProcVeranderingEC BY EducationlevelCAT\_mod EC2008\_HH

/METHOD=SSTYPE(3)

/INTERCEPT=INCLUDE

/POSTHOC=EducationlevelCAT\_mod(BONFERRONI)

/PLOT=PROFILE(EducationlevelCAT\_mod\*EC2008\_HH) TYPE=LINE ERRORBAR=NO  
MEANREFERENCE=NO YAXIS=AUTO

/PRINT ETASQ DESCRIPTIVE PARAMETER HOMOGENEITY

/CRITERIA=ALPHA(.05)

/DESIGN=EducationlevelCAT\_mod EC2008\_HH EC2008\_HH\*EducationlevelCAT\_mod.

REGRESSION

/MISSING LISTWISE

/STATISTICS COEFF OUTS R ANOVA CHANGE

/CRITERIA=PIN(.05) POUT(.10)

```
/NOORIGIN  
/DEPENDENT ProcVeranderingEC  
/METHOD=ENTER EC2008_HH EducationlevelCAT_mod  
/SCATTERPLOT=(*ZRESID ,*ZPRED)  
/RESIDUALS HISTOGRAM(ZRESID).
```

```
UNIANOVA ProcVeranderingEC BY EducationlevelCAT_mod WITH EC2008_HH
```

```
/METHOD=SSTYPE(3)  
/INTERCEPT=INCLUDE  
/PRINT ETASQ DESCRIPTIVE PARAMETER HOMOGENEITY  
/CRITERIA=ALPHA(.05)  
/DESIGN=EducationlevelCAT_mod.
```

```
UNIANOVA ProcVeranderingEC BY EducationlevelCAT_mod WITH EC2008_HH
```

```
/METHOD=SSTYPE(3)  
/INTERCEPT=INCLUDE  
/PLOT=PROFILE(EducationlevelCAT_mod) TYPE=LINE ERRORBAR=NO  
MEANREFERENCE=NO YAXIS=AUTO  
/PRINT DESCRIPTIVE PARAMETER HOMOGENEITY  
/CRITERIA=ALPHA(.05)  
/DESIGN=EducationlevelCAT_mod EC2008_HH EC2008_HH*EducationlevelCAT_mod.
```

```
UNIANOVA ProcVeranderingCC BY EducationlevelCAT_mod CulturalActiv_2008
```

```
/METHOD=SSTYPE(3)  
/INTERCEPT=INCLUDE  
/POSTHOC=EducationlevelCAT_mod CulturalActiv_2008(BONFERRONI)  
/PRINT DESCRIPTIVE PARAMETER HOMOGENEITY  
/CRITERIA=ALPHA(.05)  
/DESIGN=EducationlevelCAT_mod CulturalActiv_2008  
CulturalActiv_2008*EducationlevelCAT_mod.
```

```
ONEWAY CulturalActiv_2018 BY CulturalActiv_2008
```

```
/STATISTICS DESCRIPTIVES
```

```

/PLOT MEANS
/MISSING ANALYSIS
/POSTHOC=BONFERRONI ALPHA(0.05).
DATA LIST FREE/
  EC2008_H Educatio ProcVera .
BEGIN DATA.
  1742,7646  3,9264 -55,1111
  3473,0000  3,9264 -65,6194
  5203,2354  3,9264 -76,1277
  1742,7646  4,8661 -51,1916
  3473,0000  4,8661 -62,0697
  5203,2354  4,8661 -72,9477
  1742,7646  5,8059 -47,2722
  3473,0000  5,8059 -58,5200
  5203,2354  5,8059 -69,7677
END DATA.
GRAPH/SCATTERPLOT=
  EC2008_H WITH ProcVera BY Educatio .

DATA LIST FREE/
  Educatio EC2008_H ProcVera .
BEGIN DATA.
  3,9264 1742,7646 -55,1111
  4,8661 1742,7646 -51,1916
  5,8059 1742,7646 -47,2722
  3,9264 3473,0000 -65,6194
  4,8661 3473,0000 -62,0697
  5,8059 3473,0000 -58,5200
  3,9264 5203,2354 -76,1277
  4,8661 5203,2354 -72,9477
  5,8059 5203,2354 -69,7677
END DATA.

```

GRAPH/SCATTERPLOT=

Educatio WITH ProcVera BY EC2008\_H .

COMPUTE ProcVeranderingSC=((SC\_2018 - SC\_2008)/SC\_2008)\*100.

EXECUTE.

UNIANOVA ProcVeranderingSC BY SC\_2008 EducationlevelCAT\_mod

/METHOD=SSTYPE(3)

/INTERCEPT=INCLUDE

/POSTHOC=SC\_2008 EducationlevelCAT\_mod(BONFERRONI)

/EMMEANS=TABLES(SC\_2008) COMPARE ADJ(LSD)

/EMMEANS=TABLES(EducationlevelCAT\_mod) COMPARE ADJ(LSD)

/PRINT DESCRIPTIVE HOMOGENEITY

/CRITERIA=ALPHA(.05)

/DESIGN=SC\_2008 EducationlevelCAT\_mod EducationlevelCAT\_mod\*SC\_2008.

UNIANOVA ProcVeranderingSCRe BY SC\_08Re EducationlevelCAT\_mod

/METHOD=SSTYPE(3)

/INTERCEPT=INCLUDE

/PLOT=PROFILE(EducationlevelCAT\_mod\*SC\_08Re) TYPE=LINE ERRORBAR=NO  
MEANREFERENCE=NO YAXIS=AUTO

/PRINT ETASQ DESCRIPTIVE

/CRITERIA=ALPHA(.05)

/DESIGN=SC\_08Re EducationlevelCAT\_mod EducationlevelCAT\_mod\*SC\_08Re.

ONEWAY ProcVeranderingSCRe BY SC\_08Re

/STATISTICS DESCRIPTIVES

/PLOT MEANS

/MISSING ANALYSIS

/POSTHOC=BONFERRONI ALPHA(0.05).

DATASET ACTIVATE DataSet1.

COMPUTE E\_CBS=EC2008\_HH \* 12.

EXECUTE.

RECODE E\_CBS (Lowest thru 10000=1) (10000 thru 20000=2) (20000 thru 30000=3) (30000 thru 40000=4)

(40000 thru 50000=5) (50000 thru 100000=6) (100000 thru 200000=7) (200000 thru Highest=8).

EXECUTE.

COMPUTE EC\_2018=EC2018\_Pers \* 12.

EXECUTE.

RECODE EC\_2018\_CBS (Lowest thru 10000=1) (10000 thru 20000=2) (20000 thru 30000=3) (30000 thru 40000=4)

(40000 thru 50000=5) (50000 thru 100000=6) (100000 thru 200000=7) (200000 thru Highest=8).

EXECUTE.

COMPUTE ProcVeranderingEC=((EC\_2018\_CBS-EC\_2008\_CBS)/EC\_2008\_CBS)\*100.

EXECUTE.

UNIANOVA ProcVeranderingEC BY EC\_2008\_CBS EducationlevelCAT\_mod

/METHOD=SSTYPE(3)

/INTERCEPT=INCLUDE

/POSTHOC=EC\_2008\_CBS EducationlevelCAT\_mod(BONFERRONI)

/PLOT=PROFILE(EducationlevelCAT\_mod\*EC\_2008\_CBS) TYPE=LINE ERRORBAR=NO MEANREFERENCE=NO YAXIS=AUTO

/PRINT ETASQ DESCRIPTIVE

/CRITERIA=ALPHA(.05)

/DESIGN=EC\_2008\_CBS EducationlevelCAT\_mod EC\_2008\_CBS\*EducationlevelCAT\_mod.

DATASET ACTIVATE DataSet1.

UNIANOVA ProcVeranderingCC BY CulturalActiv\_2008 EducationlevelCAT\_mod

/METHOD=SSTYPE(3)

```

/INTERCEPT=INCLUDE
/POSTHOC=CulturalActiv_2008 EducationlevelCAT_mod(BONFERRONI)
/PLOT=PROFILE(EducationlevelCAT_mod*CulturalActiv_2008) TYPE=LINE ERRORBAR=NO
MEANREFERENCE=NO
YAXIS=AUTO
/EMMEANS=TABLES(CulturalActiv_2008) COMPARE ADJ(BONFERRONI)
/EMMEANS=TABLES(EducationlevelCAT_mod) COMPARE ADJ(BONFERRONI)
/EMMEANS=TABLES(CulturalActiv_2008*EducationlevelCAT_mod)
/PRINT DESCRIPTIVE HOMOGENEITY OPOWER
/CRITERIA=ALPHA(.05)
/DESIGN=CulturalActiv_2008 EducationlevelCAT_mod
CulturalActiv_2008*EducationlevelCAT_mod.

```

```

COMPUTE ProcVeranderingCC_read=((ReadingFrequency_18 - ReadingFrequency_08) /
ReadingFrequency_08)

```

```

* 100.

```

```

EXECUTE.

```

```

UNIANOVA ProcVeranderingCC_read BY ReadingFrequency_08 EducationlevelCAT_mod

```

```

/METHOD=SSTYPE(3)
/INTERCEPT=INCLUDE
/POSTHOC=ReadingFrequency_08 EducationlevelCAT_mod(BONFERRONI)
/PLOT=PROFILE(EducationlevelCAT_mod*ReadingFrequency_08) TYPE=LINE
ERRORBAR=NO MEANREFERENCE=NO
YAXIS=AUTO
/EMMEANS=TABLES(ReadingFrequency_08) COMPARE ADJ(BONFERRONI)
/EMMEANS=TABLES(EducationlevelCAT_mod) COMPARE ADJ(BONFERRONI)
/EMMEANS=TABLES(EducationlevelCAT_mod*ReadingFrequency_08)
/PRINT DESCRIPTIVE HOMOGENEITY OPOWER
/CRITERIA=ALPHA(.05)
/DESIGN=ReadingFrequency_08 EducationlevelCAT_mod
EducationlevelCAT_mod*ReadingFrequency_08.

```

```

UNIANOVA ProcVeranderingSCRe BY SC_08Re EducationlevelCAT_mod

```

```

/METHOD=SSTYPE(3)
/INTERCEPT=INCLUDE
/POSTHOC=SC_08Re EducationlevelCAT_mod(BONFERRONI)
/PLOT=PROFILE(EducationlevelCAT_mod*SC_08Re) TYPE=LINE ERRORBAR=NO
MEANREFERENCE=NO YAXIS=AUTO
/EMMEANS=TABLES(SC_08Re) COMPARE ADJ(BONFERRONI)
/EMMEANS=TABLES(EducationlevelCAT_mod) COMPARE ADJ(BONFERRONI)
/EMMEANS=TABLES(EducationlevelCAT_mod*SC_08Re)
/PRINT DESCRIPTIVE HOMOGENEITY OPOWER
/CRITERIA=ALPHA(.05)
/DESIGN=SC_08Re EducationlevelCAT_mod EducationlevelCAT_mod*SC_08Re.

```

UNIANOVA ProcVeranderingEC BY EC\_2008\_CBS EducationlevelCAT\_mod

```

/METHOD=SSTYPE(3)
/INTERCEPT=INCLUDE
/POSTHOC=EC_2008_CBS EducationlevelCAT_mod(BONFERRONI)
/PLOT=PROFILE(EducationlevelCAT_mod*EC_2008_CBS) TYPE=LINE ERRORBAR=NO
MEANREFERENCE=NO YAXIS=AUTO
/EMMEANS=TABLES(EC_2008_CBS) COMPARE ADJ(BONFERRONI)
/EMMEANS=TABLES(EC_2008_CBS*EducationlevelCAT_mod)
/PRINT DESCRIPTIVE HOMOGENEITY OPOWER
/CRITERIA=ALPHA(.05)
/DESIGN=EC_2008_CBS EducationlevelCAT_mod EC_2008_CBS*EducationlevelCAT_mod.

```