



# Intergenerational transmission of education among immigrants

Using data from Metropolitan Los Angeles

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## **Abstract**

This study focuses on the intergenerational transmission of education between immigrants and their offspring based on data derived from three immigrant generations. It also studies the effects of gender, language and ethnicity across generations on the educational attainment of the offspring. It is found that the effect of parental education across generations is positive and that neither paternal nor maternal educational attainment contributes more than the other. Regarding gender differences, females tend to have a higher educational attainment than their male counterpart. As for ethnicity Asians seem to have a higher educational attainment than their native counterpart, whereas this effect is negative for Mexican respondents.

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## **Introduction**

When migration comes to one's mind one might think of the many refugees fleeing from horrific war crimes occurring in their own country and in turn they become immigrants who ask asylum in a safer country. Such an example is the vast number of people from Syria fleeing to Europe (Vluchtelingenwerk, 2016). Naturally flight of violence might not be the sole reason to migrate to another country. One could think of economic incentives such as being able to enjoy better living conditions, the possibility of having a better job or it may even depend on family ties (Mincer, 1977). There are many reasons for people to migrate and often these reasons can be straightforward. What's more interesting is the fact that these immigrants, regardless of the reason for moving, have either taken children with them or given birth to a new generation of children once they've arrived in their desired destination. These offspring will adapt to a different environment, have a job, create family for themselves and thus participate in society. Perhaps the latter group of offspring might be able to adapt better than the former. Naturally, the extent in which they will adapt to society and participate in society differs per immigrant and their offspring, which can be due to a variety of reasons. This study will research to what extent one generation is able to transfer its educational knowledge to the latter and whether this causes latter generations to adapt better in economic perspective. To determine what the impact is of this immigration, one has to acknowledge the fact that all people who arrive at their new destination differ not only in gender and race, but also in educational levels. Although intergenerational transmission of education has been studied often for a native population, this has not been the case for immigrants. Thus, it still matters to identify which factors might be responsible for the transmission of education of previous generations to the latter in the framework of immigration.

The definition of parental education varies per study. Some include only one parent's educational level, which essentially means that parental education is defined as the highest educational attainment of one of the parents that is held responsible for influencing the child's educational level. Such an example is the research of intergenerational mobility of education from Luthra & Soehl where they defined the variable of the parental education by taking the

highest attained degree of either parent (Luthra & Soehl, 2015) . It may be logical to only include the highest parental educational level as interest variable, but this in turn would leave out the effect of the other parent's educational level on their child's. Perhaps it may also be important to include such a distinction. Such a distinction has been made in research topics, by looking what the result of both parental educational levels may yield on the educational attainment of their child. For example, in the study of Tsou, which focused on the causal relationship of intergenerational transmission of education using adoptees they included the educational levels of both parents separately in their model (Tsou, Liu, & Hammitt, 2011). When we look at immigration, a distinction between individual parental educational levels has not been made consistently. As both parents may have a different influence, it is interesting to find to what extent each parent's educational level may influence their children's. Moreover, gender of the children might also play an important role. Thereafter, in social perspective there might be indeed many factors which influence the transmission of education. In this research we'll take a specific look not only into the race to which an individual belongs, but also his or her spoken language at home. Whether parental background or inherited ability is responsible for the educational attainment of the child varies per study. This study will first show what the considerations and results of other research has been on the intergenerational transmission of education. Thereafter, an empirical analysis will be made by describing the appropriate research methods. The results will then be described followed by a discussion in which the results will be explained. In order to test the validity of the model, robustness will also be tested for. Finally, the findings will be summarized in the conclusion.

## **1.0 Theoretical considerations**

In order to analyze the data properly it is necessary to make use of existing theory. Therefore, the first part will focus on the human capital model. The second part discusses the link between parental and child's education. It may be logical to think that parental education is an important factor for the child's educational attainment. As we keep in mind that immigrants are the subject in the intergenerational transmission of education the first two sections (1.2 and 1.2.1) will discuss studies that find certain relationships regarding native populations, which may be applicable to the first group. The following two sections link immigration to the discussed theory and findings.

### **1.1 The human capital model**

As this research will be mainly empirical we'll use the human capital model, which is often used in labor economic, as an underlying framework to explore the intergenerational transmission of education within immigrants (Borjas, 2013). The human capital model suggests that everyone has a unique set of abilities and skills, which they take into the labor market. It also suggests that people are able to increase their human capital throughout their lives by enjoying education and having job experiences. One way to interpret human capital by educational attainment is the "wage-schooling curve", in which a worker is able to have a higher wage as he or she enjoys more years of schooling assuming that the discount rate and ability of the workers are the same. In this research this model will be used to show which factors influences whether later generations are better or worse off in an economic perspective. In this case the model could be used to show that later generations are able to study better or worse than the former generations (Borjas, 2013).

Not only does parental education bring positive effects on the education of their children, but it may also bring other advantages that stimulate this effect even more. Such an example is the effect of the maternal education on the child's health (Currie & Moretti, 2003). In addition, a 2011 study on intergenerational transmission of human capital focused on the cognitive and non-cognitive skills and health of children who were either twins or adopted (Lundborg, Nodin, & Rooth, 2011). They concluded that the father's education had a greater impact on the child's cognitive and non-cognitive skills whereas the mother's education affects the health of her

children positively. In turn these factors had a positive impact on the outcomes of these children. Furthermore, research on human capital transmission in Europe found that an additional year of parental education adds 0.44 years to the education of the child. This effect is mainly due to the maternal education, which is influenced by background characteristics of the family (Stella , 2013).

### **1.2 The relation between parental and child's education**

Literature has shown several ways in which it analyses the causal effect of intergenerational transmission of education between parent and child. Studies have given a serious thought about whether nature or nurture is the responsible factor for such transmission. An example is the study which used birth and adopted children to find a causal effect between the education level of parent and child. The effect on either own birth children or adopted children turned out to be statistically identical. This factor seems to be irrelevant for the educational attainment of the child (Björklund, Lindahl, & Plug, 2006).

In addition, a study on the Norwegian school reform in 1959 searched for a causal relationship between the education of parents and that of their children by taking the reform as a source of exogenous variation (Black, Devereux, & Salvanes, 2005). By estimation with a two-stage-least-squares (2SLS) model they didn't find a causal relationship. Since the reform happened during the educational years of the parents, they included the reform<sup>1</sup> as an interest variable that might influence the educational years of the parents as the response variable. Then the second stage of the model included the educational years of their children as response variable. This was regressed on the same educational attainment of the parents, which is also the interest variable, that included the educational reform. The 2SLS relationships proved that only the mother's education had a positive significant effect on her son's education. With this data, they concluded that the spillover effects of policies implemented in education are not the causal determinants for the transmission of education. This were rather the inherited capabilities of the children and the characteristics of the family they live in.

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<sup>1</sup> For reform they defined value 1 as the fact that the parent was influenced by the education reform and 0 meant no influence.

On the contrary, a longitudinal study on German cohorts from 1929 to 1978 resulted into the claim that parental background is of importance, despite of many government interventions in terms of policies that have been introduced in the German secondary school systems (Heineck & Riphahn, 2009). They implemented a model in which the school degree of the respondent was regressed on the education of the parents, the sex of the respondent, the birth cohort in which he or she belongs, the numbers of siblings, their rural origin and the federal state he or she resided in. Based on this model they found that the school type the child will attend doesn't purely depend on the ability of the child, but other factors such as the parental background, which affects the educational attainment of the child.

We notice that there are different estimation methods involved in finding a causal relationship regarding intergenerational transmission of education, which lead to different conclusions.

As of yet, it has not been decided which method suits the best for the estimation of intergenerational transmission of education. In order give a clear overview of the methods, a study on these estimation methods regarding the relation between parental and child education has been done by in a 2011 study by Holmlund, Lindahl and Plug using data from the Swedish population (Holmlund, Lindahl, & Plug, 2011). By comparing three different methods using full biological twins of the same sex, adopted children and instrumental variable (IV) samples in a school reform, they came to varying results. The effect of parental education on the sample of the adopted respondents turned out to be 0.03-0.04 additional schooling of the respondent, which is rather small compared to previous studies. In the case of the twin approach they found that this effect was greater for father's than mother's education, whereas the IV approach resulted in significant effects for mothers whereas there was no effect for the education of the father. They clarified these results by pointing out that internal validity assumptions were easily violated which causes the different and biased estimates.

It seems that the available literature has often taken the parental education into consideration as a determinant of intergenerational transmission of education, but has not clearly agreed upon the effect of parental education and its role in the intergenerational transmission of education.



This paper will take parental education into consideration in the framework of immigration with the transmission of education amongst different races, which may tell us to what extent each ethnicity plays a role in integration. Additionally, financial assets will be left out due to conflicting results in the literature and the fact that the first arriving generation of immigrants might have different financial situation across races. It is notable that the parental education has not been defined consistently. Even though the studies have used data based on native population, in the aspect of using immigration data there may be similarities.

### **1.2.1 Financial situation**

There are studies that claim that financial situation of the children is of importance for their educational attainment. For example, Juárez & Wendelspiess found that the financial situation at home has a higher impact on the educational attainment of the native Mexican offspring (Juárez, 2011) than the parental educational level, although the IQ of the respondent still plays a larger role. They found this result by including three major endogenous factors that could positively influence the transmission of education from parent to child. The three factors were to be considered as channels, because they are influenced by other exogenous variables such as the age of the parents and parental IQ. The channels included the transmission of ability via the genes of the parents, the economic situation in which their family had to live in and the extent to which the parents encourage their children to attend school. Each channel is determined by a different set of factors such as the father's age and IQ that accounted for his education and in turn the father's education influences the economic situation of the family. By including the three channels and IQ of the respondent in a regression model. They found that the economic background, in which the children lived, influenced the educational attainment the most. Moreover, there are several other studies that claim that parental income is positively correlated with the success of their children at school by Taubman (Taubman, 1989) and Duncan et al (Duncan & Brooks-Gunn, 1999).

Despite of the fact that there's evidence supporting financial situation as an important determinant, the opposite has been found when one is to make a distinction between genders. Huang found that the financial household assets have opposite effects when intergenerational transmission of education is compared between male and female offspring (Huang, 2012). For

male offspring this means that having parents with financial household assets increases the association between the education of the parents and their son(s) whereas these assets have an opposite effect for female offspring in which the intergenerational association between the educations of the parents and child is reduced. They found this by using data of two cohorts consisting of white children from 1984 and 1994. An OLS-model was then made with which the years of education of the respondent was regressed on the mother's educational level, the household income and a combination of the two previous variables. Moreover, studies show that parental income does have the same causal effect on their own birth and adopted children (Plug & Vijverberg, 2005; Sacerdote, 2000).

Whether the financial situation of the family does contribute to intergenerational transmission of education is unclear due to the fact that factors such as gender differences might play a role.

### **1.3 Immigrant factors in intergenerational transmission of education**

The question is what the effect might be on intergenerational transmission of education, when immigration is involved. It might turn out to be different than the studies investigating natives so far. In order to analyze immigrant groups, we will need factors that may play a role in the educational attainment of the offspring. Such factors might be spoken language or gender differences immigrants bring with them. This will be discussed in section 1.3.1 and 1.3.2.

#### **1.3.1 The role of language**

Naturally, ethnicity is determined by race, culture, physical appearances, beliefs and more factors. One is especially important to take into account for analyzing the transmission of education and the acquisition educational attainment and income, which is language. When one looks at a case of the native population with the English language as baseline research finds that parents with worse ability to speak and write the English language also have children whose English skills are significantly worse. This turns out to have a significant impact on the outcome of these children as they enjoy less school years in which they also accumulate less skills and knowledge (Bleakley & Chin, 2008).

In the case of the immigrant and its offspring, language proficiency is the means to have a positive influence on earnings. This may be due to the fact that labor opportunities unfold

when language skills meet the requirements in society (Kossoudji, 1988). In addition, the ability to speak the native language enables one to create social ties with members of other ethnic groups. This might have a positive effect for the immigrant's labor opportunities and therefore result in higher earnings (Gordon, 1964). Moreover, in the study done by Casey and Dustmann they confirmed, just as Bleakly and Chin, that language fluency is positively correlated with the language proficiency of their children's (Casey & Dustmann, 2008). They also find that language deficiencies of immigrant's children have a negative association with labor outcomes for the female population, but not for the male counterpart.

Others argue that language proficiency of immigrants partially causes a significant positive relation with earnings (Tainer, 1988). This may be caused by the fact the language variable maybe be specified differently. Thus, a measurement of language proficiency may not include the whole effect of the language acquisition of the destined country on the earnings of the immigrant. From these studies we notice that language acquisition may have a positive influence on immigrants. So far research found that parental language fluency may have an impact on the child's language skill level. This research will take both the language of parents and children and their background into account.

### **1.3.2 The role of gender in intergenerational transmission of education**

Not only may ethnicity, education and language influence the acquisition of educational attainment, but gender may also play a role. When we consider the fact that immigrants have a different cultural background, they may also bring different attitudes towards gender. Vella has shown in his study, that having a traditional attitude towards gender roles greatly impacts the educational attainment of an individual (Vella, 1993). Confirmation to this claim can also be found in a 2015 study focused on the intergenerational transmission of attitudes towards gender in India (Dhar, Jain, & Jayachandran, 2015). They used survey information which measured the attitudes of parents towards school children in rural areas, which resulted in the finding that, girls who had parents with discriminatory gender perspectives, reduced their aspirations to enjoy education beyond secondary school. However, there is a caveat worthy to mention which was also included in the study; the effects which were found are of short-term, whereas there's no support for claiming the same on the welfare of the child in the long-term.

Moreover, gender might also influence the personal income of an individual. Despite the fact that women attain the same educational levels as their male counterpart, there still exists significant differences which contribute to the wage gap caused by gender (David, Cardoso, & Kline, 2015). This gap might be caused by various reasons. For example, a Dutch study has shown for natives that the differences in gender caused by the by the fact that males are more competitive than females, due to which boys are more inclined to choose for prestigious schools and career paths, which are focused on math and science (Buser, Niederle, & Oosterbeek, 2014). Gender differences are also caused by the risk profile belonging to the certain gender (Croson & Gneezy, 2009).

Therefore, it is interesting to see whether differences in gender of immigrant offspring occurs considering how well they acquire human capital and how much they earn. Thus, gender will be controlled for in order to see whether there might be differences in the extent to which individual male immigrants acquires human capital as opposed to a female individual across the generations.

#### **1.4 Hypotheses**

Essentially this research will use several hypotheses, in which the effects of intergenerational transmission of education will be analyzed primarily. According to the human capital model from Borjas (Borjas, 2013), having more years of schooling is related with a higher wage due to better opportunities in the labor market. Therefore, relating factors that might influence education may tell us to what extent an individual's income will be. In the immigrant's case it is logical to think that they might have an educational disadvantage in respect to the natives in the country of arrival. In order to find out whether this is true the immigrant offspring will be compared with the native population. However, first it is important to identify whether the parental educational attainment affects the child's educational achievement significantly or not. Therefore, the first hypothesis will therefore be:

H1: The intergenerational transmission of education between parent and child is positive.

As we're not only interested in the influence of parental education, we'll also consider the effect of the offspring's gender on educational attainment. Including gender will show whether

differences exist and if so, whether it is similar to a native's case such as the study on risk profiles (Croson & Gneezy, 2009) or the case of gender differences in competitiveness (Buser, Niederle, & Oosterbeek, 2014). Therefore, the hypothesis will be:

H2: Across generations, male offspring of immigrants have a higher educational attainment than female offspring.

Acquiring human capital such as education might differ when comparing immigrants and natives. In this research use of language will also be included in order to find how it influences the educational development of immigrant offspring. English is the baseline language since the respondents live in the United States, but the fact that a respondent primarily speaking another language than English at home could influence the educational outcome of the respondent. Therefore, the following hypothesis has been formulated:

H3: Immigrants offspring, who speak a different language than English most of the time at home, have a lower educational attainment.

In order to find a measure to which the extent immigrants are able to adapt themselves into society, their educational attainment will be compared with that of the native population, which consists of non-Hispanic white and black respondents. The expectation is that immigrant's offspring may have a disadvantage due to their ethnicity, but are eventually able to achieve similar educational attainments as their native counterpart, when time passes with each generation. Therefore, the following statement is to be tested for:

H4: The differences in educational attainment of immigrants belonging to different ethnical groups and the native population decreases over generations.

## 2.0 Empirical analysis

This section will discuss the appropriate method of analysis and the considerations behind the models used to answer the hypotheses. In order to extrapolate the data in a proper manner the information will be analyzed by an Ordinary Least Squares (OLS)- regression model (1).

$$(1) Y_{ij} = \beta_0 + \beta_1 \text{EducationFather} + \beta_2 \text{EducationMother} + \beta_4 \text{Spokenlanguage} + \beta_5 \text{Ethnicity} + \beta_6 \text{Gender} + \gamma_n \text{Control}_{ni} + \varepsilon_{ij}$$

The purpose of the first regression model is to clarify whether the intergenerational transmission of education has a positively effect for later generation offspring. Therefore, the model will treat the highest educational years of its respondent 'i' in generation 'j'<sup>2</sup>, who essentially is the offspring of the recent immigrants, as the dependent variable 'Y'. As for the independent variables used in the model the corresponding 'β' stands for either a positive or negative coefficient which either increases or decreases the respondent's educational years when the variable is significant.

The main interest variable consist of the educational level, given in educational attainment levels, of the parents given by 'EducationFather' and 'EducationMother'. The most spoken language growing up at home 'Spokenlanguage', 'Ethnicity' and 'Gender' are also taken as independent variables in other to answer the hypotheses properly. The model furthermore includes control variables given by a certain variable Control 'n' of respondent 'i' with its corresponding coefficient 'γ'. The control variable used in this model is the age of the respondent. It is important to note that the independent variables given in model one will also be used as control variables for a certain interest variable. For example, when we try to find the effect of parental education on the child's educational attainment, the variables 'most spoken language at home', 'ethnicity' and 'gender' may function as control alongside the already mentioned control variables.

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<sup>2</sup> In this model generation 'j' represents generation 1.5 and 2.0 as described in the data section.

## **2.1 Ethnicity as proxy for culture**

Ethnicity in model one has been included as an independent variable on which the effect of ethnicity on educational attainment of the immigrant's offspring will be analyzed. It is essential to take the cultural aspects, which may differ for each race, into account. Which cultural characteristics that belong to a certain ethnic group may not always be observable and thus obtainable for analysis. Therefore, ethnicity will serve as a proxy for the different ethnic influences each race may possess.

## **2.2 Analyzing for generations**

Since the respondent will be divided into generations, the dependent variable of this regression model will be subject to recoding for generations. This means that the educational attainment of the respondents will be categorized into different generations. Although the data provides four generations offspring, the respondents will be appointed to three generation-groups. The definition of the different generations will be discussed in the data section. The purpose for the recoding will be found in the first hypothesis, which states that the intergenerational transmission of education is positive across generations. After having defined the generation-groups, the educational attainment of a respondent belonging to each of these generations will be regressed on the discussed interest and control variables, which is described in model (1). This model will regress the educational attainment of respondents from generation 1.0 and 2.0 on the variables, which have been discussed.

The data section explains that the educational attainment of the respondents belonging to generation 3.0 and 4.0 will be recoded to a specific group called "generation 3.0 and further". For this reason, another regression model (2) will give an estimation of the educational attainment of the respondent for generation 3.0 and further<sup>3</sup>. Another difference with model one is that this model (2) will not include 'SpokenLanguage' as interest or control variable. This is due to the fact that this group does consist mainly of Mexican American respondents, which specifies into such an extent that not all control variables can be taken into the model due to the lack of observations<sup>4</sup>.

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<sup>3</sup> Generation 3.0 and further is defined in the data section

<sup>4</sup> This reason can also be derived from data sections 3.0, 3.1 and 3.1.3.

$$(2) Y_{i3.0andfurther} = \beta_0 + \beta_1 EducationFather + \beta_2 EducationMother + \beta_4 Ethnicity + \beta_6 Gender + \gamma_n Control_{ni} + \epsilon_{i3.0andfurther}$$

The interpretation of the independent variable, coefficients, interest and control variables and error term are to be interpreted as model one.

### 2.3 OLS assumptions

In order to be able to use this model, we need to identify whether it satisfies for the assumptions of an OLS-regression. When the data doesn't satisfy the assumptions, which are the fundamentals of the OLS-regression, the results may lead to wrong conclusions. Having discussed the OLS regression models we can now give an appropriate specification. The models above show that we are interested in the response of a certain type 'i', which is the result of a constant, a coefficient multiplied by the interest variable and the error term. In this study it means that we regress the educational years of the respondent on the educational attainment of the parents, age of the respondent, gender and ethnicity.

Thereafter we identify whether the x-variables are linearly independent or not, by looking for multicollinearity of these variables. High collinearity in between independent variables might cause difficulties in the estimation of the coefficients. In table 1 we see the correlations between the relevant independent variables and notice that the highest correlation value exists between the educational attainment of the mother and the father, which gives the value 0.582. This value does not indicate that the two variables are highly correlated. The models will also be tested under the Variance Inflation Factor (VIF) method, where a value higher than 10 indicates that the regressors show instability. A value below 10 means that the regressors show stability. This value has been included in every table with regression results (A1-4 and A6-A9). Since it takes a value below 10, there are no other surprising data that can disrupt the assumption of linear independence.

Now that multicollinearity has been checked for, we'll test for heteroscedasticity. In order to draw appropriate conclusions, we need a homoscedastic model in which the variance of the



error term is constant given any value of X (see formula 2). Otherwise, heteroscedasticity would allow the variance of the error term to be dependent on X.

$$(1) \text{Var}[\varepsilon_i^2 | X] = \sigma^2$$

In order to analyze for this potential threat, we'll introduce the Breusch-Pagan test (table A5 shows the result for the residuals in both models) so that we can estimate the severity of the heteroscedasticity between the x-variables and the variance of the error terms. The results show that heteroscedasticity is present with a p-value which is lower than 0.05 in the models with 'all generations' and 'generation 1.5' as dependent variable. Therefore, the null-hypothesis, which states that the variance of error terms is constant, is violated. In order to solve for that issue the heteroscedasticity-consistent White standard errors will be applied. Since the white standard errors are more trustworthy, it will be maintained for all the models as a precaution.

Another assumption OLS is normality, in which the errors have a jointly normal distribution, which is not necessarily needed for the validity of the OLS-method. Perhaps the most important issue is endogeneity. The regressors should not be correlated with the error term in order to avoid omitted variable bias. If this is true, then the independent variables are exogenous. In order to keep this issue in mind, control variables and proxy variables will be added to the model as described above.

**Table 1: correlations between the regressors given a total of 3817 observations.**

	<b>Education Father</b>	<b>Education Mother</b>	<b>Age</b>	<b>Gender</b>
<b>Education Father</b>	<b>1.0000</b>	0.582	-0.006	0.039
<b>Education Mother</b>	0.582	<b>1.0000</b>	-0.043	0.026
<b>Age</b>	-0.006	-0.043	<b>1.0000</b>	0.01
<b>Gender</b>	0.039	0.026	0.01	<b>1.0000</b>

### 3.0 Data

The data, which will be analyzed as discussed before, forms the fundament of this study and its findings. Starting from 1991, the Russel foundation has supported studies aimed at the assessment of the extent of which recent immigrant's offspring are integrating into the American society from their educational development until job acquisition in the labor market. From this funding the third and latest study on intergenerational mobility of immigrants called 'Immigration and Intergenerational Mobility in Metropolitan Los Angeles (IIMMLA)<sup>5</sup>' was conducted on 4655 respondents, from which the data will be used in this study. This dataset contains specific information focused on the 1.5- and 2<sup>nd</sup> generation offspring of recent immigrants in the metropolitan areas of Los Angeles with a respondent's age that is from 13 and younger to 40. The first above mentioned generation consists of individuals who originate from a different country as they moved with their parents to their current location. The latter, second generation refers to a group of individuals who have foreign-born parents. Moreover, it also holds data about young adults who are part of the 3<sup>rd</sup> and 4<sup>th</sup> generation population of Mexican origin<sup>6</sup>. The 3<sup>rd</sup> generation consists of individuals with Mexican roots with grandparents that are born in Mexico. Generation 4.0 contains information about individuals whose great-grandparents or even earlier ancestors were Mexican. The metropolitan areas of Los Angeles have a wide variety of population with different ethnicities. In total it includes 9 main ethnical groups of which 3 of them are to be considered native. The other six groups consist of immigrants belonging to generation 1.5 and 2.0. For the 1.5<sup>th</sup> and 2<sup>nd</sup> generation the six different nationalities are: Mexican, Korean, Chinese, Filipinos, Vietnamese and Central Americans who originate from Guatemala and or El Salvador. The three native groups consist of white or black non-Hispanics and Mexican Americans. The data regarding white and black non-Hispanics is present throughout all generations, whereas the data for generation 3.0 and 4.0 and further mainly consists respondents who are Mexican-

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<sup>5</sup> The available dataset is attained from the Data Sharing for Demographic Research (Rumbaut, et al., 2008)

<sup>6</sup> This will be explained in the Data section 'Generation and Ethnicity'

American. Considering this variety of ethnicities, this information will be well applicable in for this study. Furthermore, the study provides social-cultural demographic data as well as information on intergenerational geographic and economic mobility.

In addition to the fact that the information regarding the respondent's education and that of their parents is extensive, the researchers have employed quota sampling such that the sample contains a similar proportion of individuals within different origin-groups in respect to an entire population of a nation. This in turn reassures the taken samples are representative for the population.

In this study the available responses have been taken into the model, where values containing refusal, ignorance and the not applicability of an answer have been recoded to missing values. Given the data from the ILMMA study from which the relevant variables are extracted, the most suitable model is to execute OLS-regressions. This is due to the fact that we try to find linear relationships between the response and interest variables.

### **3.1 Generation and ethnicity**

The generations of immigrant's offspring are divided into four generations from which generation 1.5 and generation 2.0 are considered to be foreign, whereas generation 3.0 and 4.0 are seen as native. Although, the parental information is not included in form of a generation itself, it is included in the data of the offspring, so that the origin of the parents can be derived. Generation 1.5, which is considered as the first generation of interest in this study, comprises individuals who arrived in the United States before they reached the age 13. They are foreign born and have traveled alongside their parents to the United States. The IMMLA study specifically focused onto the second generation, on which we have the most available information. This generation consists of respondents who are not foreign-born, but have foreign-born parents. Generation 3.0 and 4.0 further consists of individuals who are born in the United States, but have foreign-born grandparents or ancestors. These generations mainly consist of individuals of Mexican Origin and as explained in section 3.0 the first generation have roots in Mexico where their grandparents were born, whereas in individuals from the latter generation have Mexican great-grandparents or even earlier ancestors.

Taking ethnicity into perspective this also implicates that the information for the six main ethnical groups are present in the generations 1.5 and 2.0, whereas generation 3.0 and further only contain the information of Mexican-origin individuals and that of the native black and white population. The ILMMA study considers the third generation offspring as a native group of which the children are all born in the United States as well, but have or had grandparents who are foreign-born. Despite this fact, we'll compare the third and fourth generation offspring with native black and white individuals in order to find the effect of intergenerational transmission of education. Because of the lack of observations in generation 3 (356) as opposed to generation 4 (859) these two groups will be combined and mentioned as generation 3 and further. Throughout generation 2.0 to 3.0 and further the adult's age is between 20 to 40. For this study, the ethnicities as described in section 3.0 will be recoded and divided into seven different main groups consisting of: native white and black non-Hispanic, Salvador/Guatemalan, Chinese, Korean, Vietnamese and Filipino and Mexican respondents. The ethnical group "Other Latin American" has been added to the Mexican group as both groups are Hispanic and speak the same language. The baseline variable in this case will be the native white and black non-Hispanic population recoded to a single variable.

### **3.1.1 Education of respondent**

Educational attainment is defined by the highest amount of educational years a respondent has attained throughout his school career. It is an important variable as it will be taken as a measure for the intergenerational mobility of education among the immigrants. The IMMLA also provides for each individual belonging to a certain ethnicity and generation into detail how long the respondent has had education, which includes a wide range differing from one to twenty years.

### **3.1.2 Parental education**

The parental education is separated by the educational achievement of the father and the mother. It is not given by the highest amount of educational years, but rather as a categorical variable, which starts at lower to higher level education; did not complete high school, high school, vocational or trade school, some college, college graduate and graduate school.

Next to parental education given by the degree they've achieved, we also include a variable which measures the fact whether the parents had the luxury to be educated in the United States. Because the educational levels of the parents are given as a categorical variable, the first value "did not complete high school" will be maintained as the baseline.

### **3.1.3 Language**

The language of the respondent refers to a categorical variable which is included in the survey as the question which language the respondent has spoken the most while they grew up at home. Which language the respondent spoke therefore will matter for the model. Therefore, languages who are similar in such sense that they are a dialect of the language are taken as a whole. This made a total of six language groups, given the available data, possible: English, Spanish, Chinese (mandarin, Cantonese, other), Korean, Vietnamese and Tagalog. The languages will be included as a categorical variable, in which English is the baseline language.

### **3.1.4 Gender**

The ILMMA study included 2372 female and 2283 individuals who respectively make 51% and 49% of the survey population. The gender will be controlled for such that we might find significant differences in educational attainment of the respondent. Therefore, the value 1 holds for male and 0 is female.

### **3.1.5 Age**

The data also provides the age of 4622 individuals with a range of 20 to 40. This variable will be included as a categorical variable for control purposes for potential bias. The age 20 will be hold as the base value with which other ages will be compared.

## **3.2 Descriptive statistics**

For the overview, the descriptive statistics have been given as below. Table two shows an overview of the dependent and independent variables given corresponding the observations, the mean, standard deviation and values the respondent has. For example, in the case of the educational attainment for all the respondents of all generations, we have 4655 observations, which gives a mean of 14.2724 with a standard Deviation of 2.2995 and it ranges from 1 to 20

years. Educational attainment of the respondent has been split into three generations. For the independent variables the interpretation is the same, although the minimum and maximum values are given in categories. When we take the father's educational attainment, it consists of 4963 observations with a mean of 0.4904, a standard deviation of 0.5000, but his educational attainment is not given in six different categories as described before. We also see that the most spoken language growing up at home consists of 6 different language groups and 7 different ethnicity groups including the native population (described above). The baseline of the variable 'gender' is female when it takes the value '0'.

**Table 2: Descriptive statistics dependent and independent variables.**

<b>Dependent variables:</b>	<b>Observations</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Min to Max value</b>
<b>Education all generations (years)</b>	4,655	14.272	2.299	1-20
<b>Education generation 1.5</b>	1,622	14.494	2.488	1-20
<b>Education generation 2.0</b>	1,818	14.358	2.181	1-20
<b>Education generation 3.0 and further</b>	1,215	13.849	2.152	1-20
<b>Independent variables:</b>	<b>Observations</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Min to Max value</b>
<b>Gender</b>	4,655	0.490	0.500	0-1
<b>age</b>	4,655	28.521	6.149	20-40
<b>Father's education</b>	3,963	3.326	1.767	1-6
<b>Mother's education</b>	4,240	3.024	1.676	1-6
<b>Most spoken lang. growing up</b>	2,912	1.969	1.271	1-6
<b>Ethnicity</b>	4,467	4.439	2.792	1-7
<b>Generations 3 groups</b>	4,655	1.9123	0.776	1-3

## 4.0 Results

Now that the data and methodological considerations have been described, conclusions can be drawn from the regression results given in the Appendix. Table A1 gives the educational outcome of the respondent when all generations are included with a total of 2222 respondents. The White standard errors have been included in the parentheses in all regression tables. The constant is significant with a value of 12.45 years of education. Age has been controlled for and the adjusted R-squared gives a value of 0.317, which means that this model is able to explain 31.7% of the existing variance. The VIF values in the bottom right of table A1 to A4 show that the regressors are stable such that the assumption of linear independence holds. The table is divided into three main sections of independent variables defined by gender and educational level of the parents, the most spoken language at home and ethnicity. When looking at gender we notice a significant result of -0.190 years of education when the respondent is a male. More educational variables seem to be significant for the mother's educational attainment than the father's. We notice that for the father's educational attainments 'Some college', 'College graduate' and 'Graduate school' are positively significant with respectively an increase of 0.302, 0.638 and 1.012 years of educational attainment for his child in respect to a father who did not complete High School as baseline. In the case of the mother all educational attainments seem to be relevant starting from 'High school' to 'Graduate school' the values show a significant increase of educational attainment of respectively 0.349, 0.628, 0.388, 0.770 and 0.823 years for her child in respect to a mother who did not complete high school as baseline. It is also notable that the language the respondent speaks most at home does not influence his or her educational attainment except for the respondent that speaks Tagalog, which is the Filipino language. The section containing ethnicity shows that belonging to the Chinese, Korean and Vietnamese race increases the educational attainment of the respondent by respectively 1.216, 0.842 and 1.237 years with native black and white non-Hispanic population as the baseline. The opposite effect is true for Mexicans as they experience a decrease of 0.650 schooling years with the exact same baseline.

#### **4.1 Generation 1.5**

Table A2 contains results in a more specific setting with foreign-born respondents belonging to generation 1.5. It displays a constant of 13.08 years of schooling, a sample of 1113 respondents and an adjusted R-squared of 0.344. As for this generation, different educational attainments of the parents show a significant effect. For the father being a college graduate or having finished graduate school, gives the child 0.822 and 0.908 additional school years respectively in comparison to the father who did not complete High School as baseline. For the mother having accomplished high school, college graduate and graduate school, results into a significant increase of respectively 0.391, 0.703 and 0.652 years of education for her child in respect to a mother who did not complete high school as baseline. Again, the variable 'most spoken language at home' does not seem to have an effect on the educational outcome, whereas ethnicity for this particular generation displays a decrease of 1.126, 0.819, 1.440 educational years of the respondent respectively for those who are Salvadoran/Guatemalan, Filipino and Mexican. The results from these ethnic groups are compared with the native black and white non-Hispanic population as baseline.

#### **4.2 Generation 2.0**

As for second generation consisting of respondents with foreign-born parents, table A3 presents a significant constant of 12.57 years of education, a sample of 968 respondents and an adjusted R-squared of 0.296. Being male reduces educational attainment by 0.279 years. Here the effect of the educational attainment of the parents is only significant for the higher levels: college graduate and graduate school for the father with respectively 0.544 and 1.251 increase in educational attainment of his child, whereas the mother's educational attainment is significant for having reaching 'some college', 'college graduate' and 'graduate school'. This is respectively given by the positive increase of 0.377, 0.686 and 0.804 years of education for her offspring. The baseline is kept the same as used in previous generations.

Again, the most spoken language at home other than English does not influence the educational attainment of the respondent significantly. Ethnicity in the bottom right column shows similarities to the results for the generations as a whole in table A1. The results point out that belonging to either Chinese, Korean or Vietnamese ethnical group increases the



educational attainment significantly with the value 0.957, 0.712 and 1.21 schooling years in respect to the same baseline as used before.

#### **4.3 Generation 3.0 and further**

The regression results for this generation consists of Mexican Americans who are to be considered as integrated as the native white and black non-Hispanic population with which they will be compared with. A constant of 11.82 years of education is appointed towards offspring belonging to this generation with 1021 observations and an adjusted R-squared of 0.206. Being male in this case also decreases the educational outcome of education by 0.371 years. As for the relation between the education of parent and child, fathers who enjoyed Some college, have been a college graduate or had finished graduate school show a positive increase in the educational attainment of the respondent by 0.984, 0.835 and 1.543 years respectively. For mothers this effect turns out to be significant for more educational levels as only having accomplished vocational or trade school does not result in a significant value. The table on the right shows a rising coefficient of respectively 0.621, 1.250, 1.722 and 1.937 years of additional educational years from the mother's High school attainment to Graduate school.

Whether the most spoken language at home matters for the educational attainment cannot be concluded, as the data of this variable was not available for this particular group. Therefore, we can only derive that it had no influence based on previous results about other generations.

#### **4.4 Comparison across generations**

When comparing the educational outcome results of these generations it is notable that parental educational attainment is often significant for the higher levels. It is also important to note the educational attainment of the respondent is higher when his or her parents have had a higher educational attainment. This effect is notable throughout the generations that have been analyzed. Also, gender has an overall significant influence, but not for generation 1.5. The most spoken language at home does not seem to influence educational outcome at all and the significance of the ethnicity variables seem to differ per race in each generation.

## 5.0 Robustness

Now that the results have been produced, the model will be subject to a robustness check in order to find whether the results hold or whether they are merely found with luck. Therefore, the regression models will be checked in a different setting regarding gender. The dependent variable 'educational attainment of respondent' will be recoded such that the variable is split in two categories: one group for male and for female. This distinction will be made for the dependent variables in all the models using different generation respondents. The result can be found in table A6 to A9 in the appendix. The models are controlled for the most spoken language at home and age variables just like the original model. The observations for males and females are similar.

### 5.1 All generations

Table A6 gives an overview of the effects of parental education and ethnicity per gender category for offspring belonging to all generations. The constant values for males and females are nearly identical with 12.23 and 12.45 years. The significant educational variables of the father are college graduate and graduate school for both male and female. The male's educational attainment increases with 0.737 and 0.974 years respectively and for the female this effect is 0.540 and 1.077. The significant educational attainment variables for the mother is "Vocational or trade school". "College graduate" and "Graduate school" for males with 0.978, 0.978 and 0.771 years additional schooling for the respondent, whereas the variables "college graduate" and "graduate school" for the educational outcomes of female respondents contains values of 0.632 and 0.924. When we compare these results with the results from table A1, which gives the educational outcome without gender distinction, similarities are such that higher educational attainments of the parents are significant for both tables. The difference in table A1 is that the variables "Father Some college and "Mother Some College" are significant. It is also notable that gender in table A1 points out that males have 0.190 less years of schooling in comparison with females. This cannot be concluded from the data in parental education differences from table A6, but when we look at ethnicity differences by gender, it may explain where the difference of 0.190 comes from. From Table A1 we know that Chinese,

Korean, Vietnamese and Mexican show significant values for schooling years as shown in the results section. The same can be concluded for table A6 at the right column regarding ethnicity. There is a notable difference when we look at gender as Chinese (0.989 vs 1.388) and Korean (0.716 vs 1.019) males have lower increase in years of education in respect to their female counterpart. This concludes that these results are not found by coincidence, but rather that they are consistent when we look at all generations together.

### **5.1.1 Generation 1.5**

Table A7 gives an overview of male and female educational outcomes for generation 1.5. Both male and female have the same significant constant of 13.06 years of education. Also, the educational attainment of male respondents seems not to be significantly influenced by the parental education of his parents, although the mother's college graduate does have an effect of 0.824 additional years. For females the mother's education is also only significant for the variable college graduate. In contrast to the male, the female's education is significantly influenced by many of the father's educational attainments, leaving out only the variable 'Father High school'. It is important to note that the gender variable in table A2 is not significant, which might explain why the educational attainment of the father does not influence the son's education for the most part. Taking a look at ethnicity, we notice that being from El Salvador or Guatemala, or Mexico decreases the educational attainment just as the results in table A2. The first ethnicity seems to be more significantly negative for females than males, respectively with -1.359 and -0.774 years of education. When comparing table A2 and A7 for ethnicity, the same variables are significant with and the values are also similar.

### **5.1.2 Generation 2.0**

Gender differences are significant in table A3, which means that ideally the coefficients for female respondents should result into a higher value than that of the males. Table A8 shows the results for the model when male and female are separated for generation 2.0. The constant gives away that the male has less educational years than female given by 11.89 and 12.71 years respectively. The father's education is significant for achieving graduate school with respectively 1.093 and 1.386 additional years of schooling for males and females. The mother's

vocational or trade school educational degree seems to be relevant for the male respondent only and the mother's graduate achievement for the female. When we compare these results with the results from table A3 it is notable that the variables 'father graduate school', 'Mother college graduate' and 'mother Graduate school' are significant for both models. The significant value of gender in table A3 cannot be fully explained by the parental education, thus we look at ethnicity. We notice that for the significance variables from table A8 are similar to these in table A3. Both show that Chinese, Korean and Vietnamese respondents experience an increase in educational attainment. Also, on average the effect on the educational attainment of female respondents is also higher than that of the males.

### **5.1.3 Generation 3.0 and further**

Table A9 shows that the constant for males is significant less than that for females given by 10.94 and 12.29 years of education respectively. The educational levels that are similarly significant given by the gender are 'some college', 'college graduate' and 'graduate school' of the father, which are 1.055 and 0.965, 1.048 and 0.705, 1.695 and 1.518 additional years of schooling for males and females respectively. This significance is shared more amongst the mother's educational attainment for the variables 'Mother Some college', "Mother college graduate" and "Mother Graduate school". Especially the highest maternal educational attainment shows a clear difference with 0.1595 years more schooling for males as 2.343 for females. Comparing this table(A9) and table A4 the same variables are significant, although the educational level 'Mother High school' is significant in table A4 and only significant for females in table A9, which means that females are responsible for that significance in table A4. Ethnicity does not seem to be significant when diving gender. Note that we only possess information for the Mexican population with respect to the used interest and control variables.

### **5.2 Comparison across generations**

When we compare the analyses of the different generations from table A6 to A9 a few findings are notable. We see that especially the higher educated parents are able to positively affect the educational outcome of their child. The results from all generations (table A6) and generation 2.0 also show that higher parental educational attainment of the matter (table A8). An exception for the analysis of generation 1.5 in table A7, where most of the educational

attainments of the father seem to have a significant positive effect on the educational achievement of his female offspring. This inconsistency measured across the generations might explain why gender does not have a significant effect for the educational attainment of the offspring from generation 1.5 in the normal model (table A2). Also, in generation 3.0 and further nearly all paternal and maternal educational attainments matter for the educational attainment of their offspring similar to the results in the normal model (table A4).

Apart from parental educational attainment, ethnicity also seems to have a remarkably effect on the offspring. When we look at the analysis for all generations in table A6, female Asian offspring seem to have a higher educational attainment than male Asian offspring, except for the Vietnamese respondents. Although there may not be a significant effect of this kind for generation 1.5, from the results in generation 2.0 (table A6) the differences in the educational attainment of especially the Chinese male and females have reduced. Nonetheless, the ethnicities for Asian respondents are also positively significant in this model as in the normal model. For the Guatemalan/Salvadoran and Mexican respondents in generation 1.5 (table A7) we can conclude that belonging to this ethnicity results in a significant and similar negative effect as derived from the normal model in table A2.

Overall we can say that the main and robust models are mainly similar, except for a few variables. This makes it possible to conclude that the results from the main model are robust to a certain degree.

## 6.0 Discussion

Now that the results have been obtained, it is necessary to interpret and clarify the findings as testing for the hypotheses. Having compared the educational outcomes of the generations, the first hypothesis can be answered. The hypothesis was that the intergenerational transmission of education between parent and child is positive. The results conclude that both educational attainment of the parents positively correlate with the educational outcome of the respondent. Perhaps a logical reason for this conclusion is that parents care for the future and wellbeing of their offspring and therefore try to stimulate educational attainment of their children.

Additionally, in most of the regression results the positive effect of the transmission of education was the strongest for higher educational attainments of the parents, respectively: college graduate and graduate school for generations 1.5, 2.0. A potential explanation may be that parents believe, by being involved in the educational development of their children, they can influence the educational achievement of their children positively (Hoover-Dempsey & Sandler, 1997). Perhaps a reason why mainly parents with higher educational attainments significantly influence the educational attainment of their children positively, is that these parents are more aware of these beliefs. Their sense of good parenting may be invoked more due to the fact that they've had more education. This could support the fact that they are more involved in the educational development of their offspring.

For generation 3.0 it seems that lower maternal education results into a positive effect on the child's educational years. Note that the third generation consists of only Mexican population samples as that data was available to this particular group. The mentioned results above would not be the same if we only look at the effect of education on the overall sample size without generation distinctions. This is due to the fact that results in table A1 suggest that also lower educational levels such as high school and vocational or trade for maternal educational attainments do have a positive significant influence. Moreover, the results contain varying significant coefficients for the mentioned paternal and maternal educational attainments. This does not confirm that either parent is more responsible for the educational attainment of the offspring in contrast to what literature finds in a setting with native population, in which either the father's educational attainment (Lundborg, Nodin, & Rooth, 2011) or that of the mother's

(Stella , 2013) influences the educational outcome of the child's more. Having analyzed the different generations and tested for the educational outcome of the respondent the first hypothesis ought to be confirmed.

The second hypothesis mentioned that the male offspring attains a higher educational level than their female counterpart, when the different generations are taken into consideration. The idea was that in the process of human capital acquisition perhaps gender competitiveness, which might be responsible for the different educational attainments between males and females, who belong to the native population, would increase the educational attainment of immigrant male respondents in respect to female offspring (Buser, Niederle, & Oosterbeek, 2014). However, the results indicate otherwise since the gender differences results into the fact that male immigrant offspring have less educational attainment than females in the overall sample and generation 2.0. Overall males have 0.190 years less education, whereas only in generation 2.0 this effect is more negative with value -0.279. Generation 1.5 however, indicates that gender does not affect the educational outcome of the respondent. These results indicate that being either male or female show only significant results for individuals whose (grand)parents are foreign born. It also means gender does not affect the educational outcome of those who are foreign-born and have arrived in their new country. Therefore, the second hypothesis should be rejected since gender is not significant for all generations and the effect turns out to be opposite, in which females reach higher educational attainments, for the generations that have a significant gender value.

Following the second hypothesis, the third statement was that immigrants who mostly speak another language than English at home have lower educational attainment. Having tested for the Spanish, Chinese, Korean, Vietnamese and Tagalog with English as baseline, the coefficients turned out to be insignificant. The results containing the overall sample of all generations only Tagalog showed a significant result with a value of -0.560 years of education for the respondent. The results with the distinction in generation offspring show otherwise, since all these languages do not significantly influence the educational attainment of the respondent belonging to a specific generation. However, these results do not disagree with the existing literature regarding language in the human capital acquisition (Bleakley & Chin, 2008) and

language proficiency (Casey & Dustmann, 2008). For immigrant offspring it suggests that being bilingual does not necessarily influence the educational attainment significantly. Thus, the third hypothesis will be rejected.

The last hypothesis was that the educational attainment differences between immigrant offspring, who belong to a certain ethnicity, and the native population decreases over generations consisting of immigrant offspring. Table A1 to A4 indicate that the effect of belonging to a certain ethnicity does affect the educational outcome of the respondent. However, as explained in the results section, we know that the outcomes are significant for different ethnicities in each generation. The expectation was that the immigrant sample would have an educational disadvantage in terms of years in respect to the native population. The overall effects in Table A1 suggests that the Asian group (Chinese Korean and Vietnamese) actually have more educational years than the native black and white non-Hispanic population. Specifically results from generation 1.5 indicate that respondents from Salvador/Guatemala and Mexico do have less educational years than the native samples, respectively by the values -1.126 and -1.440. Then in the results from generation 2.0 these races show no significant result, whereas only for the Mexican sample corresponding to the results in generation 3.0, the effect is significantly lower with the value -0.317 years. From this we can conclude that Salvadorans/Guatemalans and Mexican respondents experience a disadvantage in respect to the native population, which is significantly smaller when we look at generation 3.0 and further. Note that the caveat is that the information is limited to the Mexican population only as the dataset only provided data for this race in combination with the specific regressors used in the model. As for the three Asian offspring groups, belonging to the second generation means also having higher educational attainment with the native sample as baseline. This effect could be caused by what other studies have concluded earlier, in which some immigrant populations who belong to certain ethnic groups have an advantage over others due the fact that social networks are available and accessible to respondents belonging to certain (Alba, Sloan, & Sperlign, 2011). Belonging to one of the Asian groups in generation 2.0 might mean that these social networks are able to increase the human capital acquisition of the individual and therefore also his educational abilities. In turn Mexican immigrants and their offspring may not



have access to such networks and therefore have a lower educational attainment (Bean & Stevens, 2003).

### **6.1 Causal relationship or correlation**

A causal relationship between the educational outcome and the parental educational achievement is not to be found easily. Studies have tried to find such a relationship with different conclusions as result (Holmlund, Lindahl, & Plug, 2011; Björklund, Lindahl, & Plug, 2006; Black, Devereux, & Salvanes, 2005; Heineck & Riphahn, 2009). This study mainly describes the correlations between the described educational outcome of the respondent and the parental educational attainment. Furthermore, the influences of the spoken language at home and ethnicity on the educational attainment of the immigrant offspring have been evaluated as well.

### **6.2 Limitations**

Naturally, this study is not an exception to caveats. An important limitation is that available information about the third generation and further is limited for the used regressors on which the results are partially based. Therefore, we have insight on the effect of ethnicity on educational attainment for two generations. Later researchers should also include available information on third generation and further immigrant offspring in the model, so that the extent to which these individuals integrate can be measured more precisely.

Also six main ethnicities have been included as ethnical groups, whereas many other ethnicities have not been included as the dataset did not provide sufficient observations for a wider group of ethnicities. In order to have a more valid model it is also important to consider more ethnicities as well. Future studies should focus on gathering more observations of the various ethnical groups as well as applying them into the model. In addition, a robustness check has been implemented in order to control whether the results hold in a different setting, which was the separation of gender in male and female in this case.

Obviously the models do not exist without imperfections. Regarding internal validity, the regression models have been tested for the OLS-assumptions and most assumptions hold, although omitted variable bias is a reasonable threat. Therefore, suitable interest and control variables have been selected and tested for multicollinearity in order to reduce effects of other independent regressors that might influence the educational outcome of the respondent and the corresponding interest variables. This was also the cause for including ethnicity as a proxy for unobservable factors that might as well influence the educational outcome.

This study also did not take financial indicators as a part of the models, since the focus has been on the intergenerational transmission of education in the framework of integration. The integration of an immigrant into a new country might be subject to more factors such as the economic situation of a country or the financial situation at home. Therefore, it may be interesting to study to what extent these factors might have an influence on the integration of immigrants.

### **6.3 Potential method for estimating causal effects**

Although mainly correlations have been studied in this paper, there certainly are methods to find a causal relationship between the parental and offspring's educational attainment. This section will shortly describe such method so that future studies may consider it as a tool for finding a causal relationship regarding this subject. A common method is the use of instrumental variables (IV). Although the IV method is often used, there are various ways to define an instrumental variable. An example is the use of school reforms (Holmlund, Lindahl, & Plug, 2011; Black, Devereux, & Salvanes, 2005). This section will discuss the definition of another instrumental variable and how it can be implemented into a model. In this model one has to find an instrumental variable which only influences the educational attainment of the offspring through the educational attainment of the parents. Moreover, the IV is not caused by the dependent variable or by a factor that influences the dependent variable. It also has to be uncorrelated with the error term.

By studying an economic crisis, a potential instrumental variable for finding a causal relationship can potentially be derived. The use of this derived exogenous variable may take

away the endogenous variation that might occur in the normal model where the educational attainment of the respondent is regressed with the parental educational achievement as interest variable.

It may be logical to consider the fact that economic crises are responsible for unemployment and wage cuts (Fallon & Lucas, 2002). By using the income of the grandparents before and after the crisis as instrumental variable, one may derive to what extent the effect of the crisis has been on the financial situation in which the parents lived. Naturally the sample regarding these parents and their educational attainment should consist of future parents-to-be individuals who were young and still went to school in that period. Ideally the negative effect of the crisis on the income of the grandparents would affect the educational achievement of the parents. In this kind of circumstances, there is a possibility that high income families are little affected by such crises, whereas the impact on low income families is suspected to be more severe.

An issue might be that the data has to be obtainable in order to test this method. Therefore, it is important to consider which economic crisis, that have occurred in the past, to implement as some obtaining information from some crises may be more accessible than others.

It is also important to consider where to measure the grandparental income in an economic crisis, because a consequence of this unfortunate event may be that a future-parent-to-be may not attend school or enjoy education at all. This would make the parental education of these respondents unobservable and perhaps unusable in a study. Such distinction may exist between urban and rural areas of a country, where people belonging to the latter group may suffer more financially during a crisis (Fallon & Lucas, 2002). Therefore, future studies should take this into considerations in their model.

The appropriate model for this particular instrumental variable should be a two-stage-least squares model (2SLS). This method makes use of two stages. When the assumptions for this model have been satisfied, the first stage will regress parental education on grandparental income. The estimated value of parental education from stage one will then be used in the OLS model where the educational attainment of the respondent is regressed with the parental education as interest variable.

## **7.0 Conclusion**

In this paper I have studied the intergenerational transmission of education between immigrant parents and children, in order to research which factors may be of importance to the educational attainment of an individual. Therefore, parental education has been divided into two groups and included as categorical variable, but also regressors such as the most spoken language at home, ethnicity and age have been included. The results have shown that both paternal and maternal educational matter for the child's educational outcome and that there's no clear distinction in which parent has a larger contribution to this effect. We can conclude that the transmission of educational attainment is positive across generations. Having looked at effects regarding gender it seems that it is not consistently significant across generations. Another result is that female respondents have a higher educational attainment than their male counterpart in the significant cases. Speaking another language than English at home often does not seem to influence the educational attainment of the respondent, which may point out that being bilingual does necessarily have a disadvantage. As for the educational attainment differences exist between ethnical groups and the native population. Asian races have a higher educational attainment than natives. For Hispanic population this effect seems to be negative across generations. This negative effect does increase over time for the Mexican group.

### **7.1 Recommendations**

From the results we can derive that offspring of Mexican origin have lower educational attainments. It may be due to the fact that that people belonging to this ethnic group simply do not have access to social networks belonging to an ethnic group, which might be the case for the Asian races. Therefore, policy-wise it would be an option to support them in the integration process. This could be achieved by setting up an organ or subsidize private parties that lead immigrants and keeps track of their (educational) progress and support them where needed such as locating them to places in which population of the same ethnicity resides.

Also, from the results we derive that parents with higher educational attainments are able to contribute to a stronger positive effect on their child's educational outcome. Since most lower parental educational levels do not contribute such significant effects, the government may subsidize such immigrant families for educational support such as additional tutoring in school.

## Bibliography

- Alba, R., Sloan, J., & Sperling, J. (2011). The integration imperative: The children of low-status immigrants in the schools of wealthy societies. *Annual Review of Sociology*, 39, S107-S122.
- Bean, F. D., & Stevens, G. (2003). *America's newcomers and the dynamics of diversity*. New York: Russel Sage Foundation.
- Björklund, A., Lindahl, M., & Plug, E. (2006). The origins of intergenerational associations: Lessons from Swedish adoption data. *The Quarterly Journal of Economics*, 999-1028.
- Black, S. E., Devereux, P. J., & Salvanes, K. G. (2005). Why The Appel Doesn't Fall Far: Understanding The Intergenerational transmission of Education. *American Economic Review*, 437-449.
- Bleakley, H., & Chin, A. (2008). What Holds Back the Second Generation The Intergenerational Transmission of Language Human Capital Among Immigrants. *The Journal of Human Resources*, 267-298.
- Borjas, G. J. (2013). *Labor Economics, sixth edition*. New York: McGraw-Hill.
- Buser, T., Niederle, M., & Oosterbeek, H. (2014). Gender, Competitiveness, and Career Choices. *Quarterly Journal of Economics*, 1409-1447.
- Casey, T., & Dustmann, C. (2008). Intergenerational transmission of language capital and economic outcome. *Journal of Human Resources*, 660-687.
- Crosen, R., & Gneezy, U. (2009). Gender Differences in Preferences. *Journal of Economic Literature*, 1-27.
- Currie, J., & Moretti, E. (2003). Mother's Education and the Intergenerational Transmission of Human Capital: Evidence from College Openings. *The Quarterly Journal of Economics*, 1495-1532.
- David, D., Cardoso, A. R., & Kline, p. (2015). Bargaining, Sorting, and the Gender Wage Gap: Quantifying the Impact of Firms on the Relative Pay of Women. *Quarterly Journal of Economics*, 633-686.
- Dhar, D., Jain, T., & Jayachandran, S. (2015). Intergenerational Transmission of Gender Attitudes: Evidence from India. *National Bureau of Economic Research*, No. w21429.
- Duncan, G. J., & Brooks-Gunn, J. (1999). *Consequences of growing up poor*. New York: Russel Sage Foundation.
- Fallon, P. R., & Lucas, R. E. (2002). The impact of financial crises on labor markets, household incomes, and poverty: A review of evidence. *The World Bank Research Observer*, 21-45.
- Gordon, M. (1964). *Assimilation in American Life*. New York: Oxford City Press.
- Heineck, G., & Riphahn, R. T. (2009). Intergeneratoinal Transmission of Educational Attainment in Germany: The Last Five Decades. *Journal of Economics and Statistics*, 36-60.
- Holmlund, H., Lindahl, M., & Plug, E. (2011). The Causal Effect of Parents' Schooling on Children's Schooling: A Comparison of Estimation Methods. *Journal of Economic Literature*, 615-651.

- Hoover-Dempsey, K., & Sandler, H. (1997). Why Do Parents Become Involved in Their Children's Education? *Review of Educational Research*, 3-42.
- Huang, J. (2012). Intergenerational transmission of educational attainment: The role of household assets. *Economics of Education Review*, 112-123.
- Juárez, F. W. (2011). Intergenerational transmission of education - Uncovering the mechanisms behind high intergenerational correlations. *The Journal of Economic Inequality*, No. 234.
- Kossoudji, S. A. (1988). English Language Ability and the Labor Market Opportunities of Hispanic and East Asian Immigrant Men. *Journal of Labor Economics*, 205-228.
- Lundborg, P., Nodin, M., & Rooth, D. O. (2011). The Intergenerational Transmission of Human Capital: Exploring the Role of Skills and Health Using Data on Adoptees and Twins. *Institute for the Study of Labor (IZA)*, No. 6099.
- Luthra, R. R., & Soehl, T. (2015). From Parent to Child? Transmission of Educational Attainment Within Immigrant Families: Methodological Considerations. *Demography*, 543-567.
- Mincer, J. (1977). Family Migration Decisions. *Journal of Political Economy*, 1-50.
- Plug, E., & Vijverberg, W. (2005). Does Family Income Matter For Schooling Outcome Using Adoptees As a Natural Experiment\*. *The Economic Journal*, 879-906.
- Rumbaut, R. G., Bean, F. D., Chávez, L. R., Lee, J., Brown, S. K., DeSipio, L., & Zhou, M. (2008, 7 1). *Immigration and Intergenerational Mobility in Metropolitan Los Angeles (IIMMLA), 2004*. doi:<http://doi.org/10.3886/ICPSR22627.v1>
- Sacerdote, B. (2000). The Nature and nurture of economic outcomes. *NBER Working Papers*, No. 7949.
- Stella, L. (2013). Intergenerational transmission of human capital in Europe: evidence from SHARE. *IZA Journal of European Labor Studies*, 2(1), 1.
- Tainer, E. (1988). English Language Proficiency and the Determination of Earnings among Foreign-Born Men. *The Journal of Human Resources*, 108-122.
- Taubman, P. (1989). Role of parental income in education attainment. *The American Economic Review* 1989, 57-61.
- Tsou, M.-W., Liu, J.-T., & Hammitt, J. K. (2011). The intergenerational transmission of education: Evidence from. *Economic letters*, 134-136.
- Vella, F. (1993). Gender Roles and Human Capital Investment: The Relationship between Traditional Attitudes and Female Labour Market Performance. *Economica*, 191-211.
- Vluchtelingenwerk, R. (2016, March 29). *Bescherming in Europa*. Retrieved from Vluchtelingenwerk: <http://www.vluchtelingenwerk.nl/feiten-cijfers/cijfers/bescherming-europa>

## Appendix

**Table A1: Educational outcome using all generations**

	Education all generations		
<b>Education Parents and gender:</b>		<b>Most spoken</b>	
<b>gender</b>	<b>-0.190*</b>	<b>Language at home:</b>	
	<b>(0.0797)</b>	<b>Spanish</b>	-0.0545
<b>Father High school</b>	0.0908	<b>Chinese</b>	(0.141)
	(0.137)		0.00788
<b>Father Vocational or trade school</b>	0.448	<b>Korean</b>	(0.140)
	(0.267)		0.0861
<b>Father Some college</b>	<b>0.302*</b>	<b>Vietnamese</b>	-0.168
	<b>(0.152)</b>		(0.177)
<b>Father College graduate</b>	<b>0.638***</b>	<b>Tagalog</b>	-0.560*
	<b>(0.145)</b>		(0.266)
<b>Father Graduate school</b>	<b>1.012***</b>		
	<b>(0.179)</b>	<b>Ethnicity:</b>	
<b>Mother High school</b>	<b>0.349**</b>	<b>Salvador/Guatemala</b>	-0.209
	<b>(0.126)</b>		(0.220)
<b>Mother Vocational or trade school</b>	<b>0.629*</b>	<b>Chinese</b>	<b>1.216***</b>
	<b>(0.250)</b>		<b>(0.196)</b>
<b>Mother Some college</b>	<b>0.388**</b>	<b>Korean</b>	<b>0.842***</b>
	<b>(0.145)</b>		<b>(0.218)</b>
<b>Mother College graduate</b>	<b>0.770***</b>	<b>Vietnamese</b>	<b>1.237***</b>
	<b>(0.144)</b>		<b>(0.202)</b>
<b>Mother Graduate school</b>	<b>0.823***</b>	<b>Filipino</b>	0.120
	<b>(0.230)</b>		(0.216)
		<b>Mexican</b>	-0.650**
			(0.199)
<b>Constant</b>	12.45***	<b>Mean VIF</b>	1.91
	(0.226)		
<b>N</b>	2222		
<b>Adjusted R-squared</b>	0.317		
<b>Controlled for Age:</b>	Yes		
<b>Robust Standard errors in parentheses</b>			
<b>* p&lt;0.05, ** p&lt;0.01, *** p&lt;0.001</b>			

**Table A2: Educational outcome using generation 1.5**

	Education generation 1.5		
<b>Education Parents and gender:</b>		<b>Most spoken Language at home:</b>	
<b>gender</b>	-0.149 (0.115)	<b>Spanish</b>	-0.324 (0.270)
<b>Father High school</b>	0.076 (0.234)	<b>Chinese</b>	-0.112 (0.213)
<b>Father Vocational or trade school</b>	<b>0.956*</b> <b>(0.439)</b>	<b>Korean</b>	0.114 (0.257)
<b>Father Some college</b>	0.410 (0.266)	<b>Vietnamese</b>	-0.124 (0.230)
<b>Father College graduate</b>	<b>0.822***</b> <b>(0.236)</b>	<b>Tagalog</b>	-0.503 (0.305)
<b>Father Graduate school</b>	<b>0.908**</b> <b>(0.276)</b>	<b>Ethnicity:</b>	
<b>Mother High school</b>	<b>0.391*</b> <b>(0.194)</b>	<b>Salvador/Guatemala</b>	<b>-1.126**</b> <b>(0.432)</b>
<b>Mother Vocational or trade school</b>	0.081 (0.427)	<b>Chinese</b>	0.654 (0.400)
<b>Mother Some college</b>	0.280 (0.245)	<b>Korean</b>	0.161 (0.419)
<b>Mother College graduate</b>	<b>0.703**</b> <b>(0.217)</b>	<b>Vietnamese</b>	0.467 (0.399)
<b>Mother Graduate school</b>	<b>0.652*</b> <b>(0.323)</b>	<b>Filipino</b>	<b>-0.819*</b> <b>(0.407)</b>
		<b>Mexican</b>	<b>-1.44**</b> <b>(0.437)</b>
<b>Constant</b>	<b>13.08***</b> <b>(0.439)</b>	<b>Mean VIF</b>	2.54
<b>N</b>	1113		
<b>Adjusted R-squared</b>	0.344		
<b>Controlled for Age:</b>	Yes		
<b>Robust Standard errors in parentheses</b>			
<b>* p&lt;0.05, ** p&lt;0.01, *** p&lt;0.001</b>			



**Table A3: Educational outcome using generation 2.0**

	Education generation 2.0		
<b>Education Parents and gender:</b>		<b>Most spoken Language at home:</b>	
<b>gender</b>	<b>-0.279*</b> <b>(0.115)</b>	<b>Spanish</b>	-0.0432 (0.174)
<b>Father High school</b>	0.265 (0.172)	<b>Chinese</b>	0.0567 (0.208)
<b>Father Vocational or trade school</b>	0.300 (0.343)	<b>Korean</b>	-0.186 (0.271)
<b>Father Some college</b>	0.362 (0.195)	<b>Vietnamese</b>	-0.208 (0.294)
<b>Father College graduate</b>	<b>0.544*</b> <b>(0.216)</b>	<b>Tagalog</b>	0.854 (0.475)
<b>Father Graduate school</b>	<b>1.251***</b> <b>(0.257)</b>	<b>Ethnicity:</b>	
<b>Mother High school</b>	0.173 (0.175)	<b>Salvador/Guatemala</b>	-0.0126 (0.321)
<b>Mother Vocational or trade school</b>	0.618 (0.320)	<b>Chinese</b>	<b>0.957***</b> <b>(0.284)</b>
<b>Mother Some college</b>	<b>0.377*</b> <b>(0.186)</b>	<b>Korean</b>	<b>0.712*</b> <b>(0.311)</b>
<b>Mother College graduate</b>	<b>0.686***</b> <b>(0.204)</b>	<b>Vietnamese</b>	<b>1.121***</b> <b>(0.299)</b>
<b>Mother Graduate school</b>	<b>0.804*</b> <b>(0.349)</b>	<b>Filipino</b>	0.320 (0.332)
		<b>Mexican</b>	-0.447 (0.298)
<b>Constant</b>	<b>12.57***</b> <b>(0.336)</b>	<b>Mean VIF</b>	1.82
<b>N</b>	968		
<b>Adjusted R-squared</b>	0.296		
<b>Controlled for Age:</b>	Yes		
<b>Robust Standard errors in parentheses</b>			
<b>* p&lt;0.05, ** p&lt;0.01, *** p&lt;0.001</b>			

**Table A4: Educational outcome using Generation 3.0 and further**

	Education generations 3.0 and further		
<b>Education Parents and gender:</b>			
<b>gender</b>	<b>-0.371**</b> <b>(0.122)</b>	<b>Mother High school</b>	<b>0.621*</b> <b>(0.262)</b>
<b>Father High school</b>	0.412 (0.229)	<b>Mother Vocational or trade school</b>	0.606 (0.358)
<b>Father Vocational or trade school</b>	0.631 (0.445)	<b>Mother Some college</b>	<b>1.250***</b> <b>(0.277)</b>
<b>Father Some college</b>	<b>0.984***</b> <b>(0.244)</b>	<b>Mother College graduate</b>	<b>1.722***</b> <b>(0.293)</b>
<b>Father College graduate</b>	<b>0.835***</b> <b>(0.249)</b>	<b>Mother Graduate school</b>	<b>1.937***</b> <b>(0.341)</b>
<b>Father Graduate school</b>	<b>1.543***</b> <b>(0.282)</b>	<b>Ethnicity:</b>	
		<b>Mexican</b>	<b>-0.317*</b> <b>(0.137)</b>
<b>Constant</b>	11.82*** (0.361)	<b>Mean VIF</b>	2.18
<b>N</b>	1,021		
<b>Adjusted R-squared</b>	0.206		
<b>Controlled for Age:</b>	Yes		
<b>Robust Standard errors in parentheses</b>			
<b>* p&lt;0.05, ** p&lt;0.01, *** p&lt;0.001</b>			

**Table A5: Breusch-Pagan test for generations**

Ho: Constant variance		
<b>All generations</b>	Chi <sup>2</sup>	12.96
	Prob > Chi <sup>2</sup>	0.000
<b>Generation 1.5</b>	Chi <sup>2</sup>	16.10
	Prob > Chi <sup>2</sup>	0.000
<b>Generation 2.0</b>	Chi <sup>2</sup>	1.22
	Prob > Chi <sup>2</sup>	0.269
<b>Generation 3.0 and further</b>	Chi <sup>2</sup>	0.26
	Prob > Chi <sup>2</sup>	0.612

**Table A6: Educational outcome using all generations**

Parental Education:	Education Respondent		Ethnicity:	Education Respondent	
	Male	Female		Male	Female
Father High school	0.0504 (0.220)	0.0372 (0.174)	Salvador/Guatemala	-0.238 (0.343)	-0.121 (0.300)
Father Vocational or trade school	0.598 (0.395)	0.401 (0.347)	Chinese	<b>0.989**</b> <b>(0.316)</b>	<b>1.388***</b> <b>(0.260)</b>
Father Some college	0.269 (0.226)	0.330 (0.214)	Korean	<b>0.716*</b> <b>(0.336)</b>	<b>1.019***</b> <b>(0.294)</b>
Father College graduate	<b>0.737**</b> <b>(0.228)</b>	<b>0.540**</b> <b>(0.191)</b>	Vietnamese	<b>1.285***</b> <b>(0.326)</b>	<b>1.234***</b> <b>(0.267)</b>
Father Graduate school	<b>0.974***</b> (0.259)	<b>1.077***</b> (0.255)	Filipino	-0.103 (0.349)	0.318 (0.285)
Mother High school	0.390 (0.201)	<b>0.389*</b> <b>(0.162)</b>	Mexican	-0.624 (0.319)	-0.619* (0.261)
Mother Vocational or trade school	<b>1.033*</b> <b>(0.412)</b>	0.321 (0.303)			
Mother Some college	0.439 (0.227)	0.331 (0.192)			
Mother College graduate	<b>0.978***</b> <b>(0.230)</b>	<b>0.642***</b> <b>(0.191)</b>			
Mother Graduate school	<b>0.771*</b> <b>(0.303)</b>	<b>0.924*</b> <b>(0.362)</b>			
Constant	12.23*** (0.345)	12.45*** (0.310)	Mean VIF	2.080	1.880
N	1082	1140			
Adjusted R-squared	0.353	0.295			
Controlled for Age:	Yes	Yes			
Controlled for The most spoken language at home:	Yes	Yes			
<b>Robust Standard errors in parentheses</b> * p<0.05, ** p<0.01, *** p<0.001					

**Table A7: Educational outcome generation 1.5**

Parental Education:	Education Respondent		Ethnicity:	Education Respondent	
	Male	Female		Male	Female
Father High school	-0.423 (0.391)	0.316 (0.297)	Salvador/Guatemala	-0.774 (0.772)	<b>-1.359*</b> <b>(0.528)</b>
Father Vocational or trade school	0.324 (0.646)	<b>1.727**</b> <b>(0.593)</b>	Chinese	1.010 (0.736)	0.227 (0.479)
Father Some college	-0.0812 (0.402)	<b>0.756*</b> <b>(0.370)</b>	Korean	0.643 (0.765)	-0.340 (0.499)
Father College graduate	0.585 (0.379)	<b>0.904**</b> <b>(0.309)</b>	Vietnamese	0.763 (0.743)	0.177 (0.456)
Father Graduate school	0.653 (0.435)	<b>1.019**</b> <b>(0.379)</b>	Filipino	-0.671 (0.766)	-0.923 (0.483)
Mother High school	0.390 (0.314)	0.479 (0.259)	Mexican	-1.415 (0.770)	<b>-1.427**</b> <b>(0.537)</b>
Mother Vocational or trade school	0.153 (0.681)	-0.114 (0.517)			
Mother Some college	0.214 (0.359)	0.332 (0.341)			
Mother College graduate	<b>0.824*</b> <b>(0.327)</b>	<b>0.657*</b> <b>(0.323)</b>			
Mother Graduate school	0.400 (0.447)	0.935 (0.510)			
Constant	<b>13.06***</b> <b>(0.805)</b>	<b>13.06***</b> <b>(0.524)</b>	Mean VIF	2.860	2.510
N	550	563			
Adjusted R-squared	0.382	0.309			
Controlled for Age:	Yes	Yes			
controlled for The most spoken language at home:	Yes	Yes			
<b>Robust Standard errors in parentheses</b> <b>* p&lt;0.05, ** p&lt;0.01, *** p&lt;0.001</b>					

**Table A8: Educational outcome generation 2.0**

Parental Education:	Education Respondent		Ethnicity:	Education Respondent	
	Male	Female		Male	Female
Father High school	0.486 (0.253)	0.0530 (0.230)	Salvador/Guatemala	0.0544 (0.469)	0.188 (0.468)
Father Vocational or trade school	0.754 (0.599)	-0.0148 (0.391)	Chinese	<b>0.934*</b> <b>(0.412)</b>	<b>1.188**</b> <b>(0.410)</b>
Father Some college	0.480 (0.295)	0.230 (0.265)	Korean	0.699 (0.432)	<b>1.095*</b> <b>(0.455)</b>
Father College graduate	0.540 (0.321)	0.378 (0.292)	Vietnamese	<b>1.353**</b> <b>(0.449)</b>	<b>1.083*</b> <b>(0.432)</b>
Father Graduate school	<b>1.093**</b> <b>(0.345)</b>	<b>1.386***</b> <b>(0.368)</b>	Filipino	0.551 (0.504)	0.347 (0.456)
Mother High school	0.265 (0.253)	0.178 (0.239)	Mexican	-0.0120 (0.431)	-0.638 (0.434)
Mother Vocational or trade school	1.448** (0.509)	0.178 (0.402)			
Mother Some college	0.595* (0.282)	0.193 (0.241)			
Mother College graduate	0.876** (0.320)	0.673* (0.269)			
Mother Graduate school	0.748 (-0.423)	1.262* (0.628)			
Constant	<b>11.89***</b> <b>(0.468)</b>	<b>12.71***</b> <b>(0.489)</b>	Mean VIF	2.000	1.830
N	471	497			
Adjusted R-squared	0.334	0.295			
Controlled for Age:	Yes	Yes			
controlled for The most spoken language at home:	Yes	Yes			
Robust Standard errors in parentheses * p<0.05, ** p<0.01, *** p<0.001					

**Table A9: Educational outcome generation 3.0 and further**

Parental Education:	Education Respondent		Ethnicity:	Education Respondent				
	Male	Female		Male	Female			
Father High school	0.599 (0.416)	0.267 (0.260)	Mexican	-0.360 (0.212)	-0.228 (0.180)			
Father Vocational or trade school	0.337 (0.732)	0.864 (0.552)						
Father Some college	<b>1.055*</b> <b>(0.436)</b>	<b>0.965***</b> <b>(0.281)</b>						
Father College graduate	<b>1.048*</b> <b>(0.433)</b>	<b>0.705*</b> <b>(0.302)</b>						
Father Graduate school	<b>1.695***</b> <b>(0.476)</b>	<b>1.518***</b> <b>(0.359)</b>						
Mother High school	<b>0.635</b> <b>(0.469)</b>	<b>0.597*</b> <b>(0.287)</b>						
Mother Vocational or trade school	<b>1.727*</b> <b>(0.703)</b>	0.237 (0.394)						
Mother Some college	<b>1.306**</b> <b>(0.483)</b>	<b>1.233***</b> <b>(0.325)</b>						
Mother College graduate	<b>1.602**</b> <b>(0.517)</b>	<b>1.821***</b> <b>(0.350)</b>						
Mother Graduate school	<b>1.595**</b> <b>(0.531)</b>	<b>2.343***</b> <b>(0.445)</b>						
Constant	<b>10.94***</b> <b>(0.615)</b>	<b>12.29***</b> <b>(0.418)</b>				Mean VIF	2.170	2.430
N	485	536						
Adjusted R-squared	0.167	0.230						
Controlled for Age:	Yes							
<b>Robust Standard errors in parentheses</b> <b>* p&lt;0.05, ** p&lt;0.01, *** p&lt;0.001</b>								