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**Opportunities around
Europe: an empirical
analysis of the
Intergenerational mobility.**

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INTRODUCTION

The transition from a job position to another is determined by a series of social mechanisms and life histories that in many cases produce inequality. This happens when occupational opportunities are not equally distributed in the population for a number of reasons that are not related to the characteristics of the individuals (for example, intelligence, ability or motivation) but to other factors that create a strong persistence between the socio-economic position of parents and the socio-economic position of children. The study of Intergenerational Mobility focuses on this transmission of the social status between generations.

This aspect is fundamental to favour economic growth, equality and social cohesion. Consequently, guaranteeing that individuals could have the possibility to improve their social conditions without considering their familiar background should be considered not only fair but also a strategic decision to improve the economy of countries. However, this does not easily happen: in some social categories like immigrants the possibilities to improve in the social ladder are reduced. Moreover, in the European context, not all the countries guarantee that anyone could have the same possibility to improve in the social ladder and, consequently, the social position of these individuals is strongly related to the parent's one.

Intergenerational mobility is a complex phenomenon and characterized by several factors: there is a "random component" that cannot be controlled by countries, but in many cases there are systematic patterns which need to be investigated.

Moreover, another reason to study the topic of intergenerational mobility is related to the fact that it is a widespread phenomenon, which involves not only countries but each single individual. Indeed, anyone has a family, which determines a certain social origin and a career undertaken during the course of life. That career could imply a shift in the social hierarchy respect to status of origin. Sometimes this shift might be positive (and so produce better incomes, prestige or opportunities), sometimes negative and sometimes this change does not happen at all. Consequently, contributing to deepening the knowledge of intergenerational mobility means not only contributing to the development of this social sciences but, most importantly, guaranteeing the possibility to anyone to be free to improve their social status.

The goal of this thesis is firstly to observe which are the factors that generate intergenerational mobility and which of them can be manipulated by countries through adequate policies to favour it. Indeed, as we will see, there are several ways through which countries can intervene but all of these can produce positive and negative consequences. So, it is necessary to analyse which of them can produce positive results in European countries. Finally, as we said at the beginning, intergenerational mobility affects differently social categories. Consequently, we will observe if immigrants in Europe of first and second generation have the same likelihood of local individuals to improve in the social ladder and, if not, where it is necessary to operate in order to give them the same possibilities of local individuals.

To answer to these questions, we will follow a multipath approach: we will firstly look at the literature related to intergenerational mobility in order to describe the phenomenon and its mechanisms, then we will move to analyse countries' policies and to the results obtained and, finally, an analytical approach will be used to verify if immigrants have the same possibilities as local individuals to improve in the social ladder.

To disentangle all these aspects the following dissertation is divided into three chapters. In the first chapter it will be given a definition of intergenerational mobility and it will be explained what distinguishes it to intragenerational mobility and all other forms of social mobility. Then, we will pass to explain which are the main factors which cause intergenerational mobility. Indeed, the social position of an individual can be defined as the result of his or her occupation so economic factors are clearly one of the main factors, but it is not the only one. There are also several other factors which can promote it. For example, before entering the job market the individual should acquire at least a minimum level of education. Consequently, we will deepen how incrementing the educational level of an individual can improve his or her possibilities to advance in the social hierarchy. Also other non-economic and social factors are important to promote intergenerational mobility. Let's consider for instance the neighbourhood, we will try to analyse if growing up in different contexts can lead to different output in intergenerational mobility or whether it is true that living in a disadvantaged area can bind the child to the social position of his or her parents. Finally, in this chapter it will be distinguished how to measure intergenerational mobility. Due to its complex nature, there is not a unique way to measure it. Clearly, since economy is one of the main factors, we can understand that income is one of the possible measure units but it is not the only one.

Given these first concepts we can clearly appreciate that some of these factors are totally random while some other can be shaped through countries' intervention. The aim of the second chapter is to analyse in which factors countries can intervene and which results these policies could produce. To answer to this, we will firstly analyse why the countries' decision to implement intergenerational mobility is positive for both economy and equality. Let's assume, for instance, an individual who owns a high level of education and skills but cannot improve his or her social position due to the lack of social connection in the labour market. In this case the impossibility to improve in the social ladder is not only an issue of inequity but also economic. Indeed, there would be a waste of human capital which could mean, at the aggregate level, a possible loss of GDP for countries. Hence, countries should answer to this through adequate policies. To analyse those policies, we have decided to follow a factorial approach. In particular, it will be analysed how policies related to Education, Family, labour market, tax system and informational frictions have been structured and the responses to them.

Finally, in the last chapter it will be carried out an empirical analysis in relation to immigrants. The aim here is to verify if immigrants in EU have the same opportunities as local individuals in increasing their social position. To verify this hypothesis, we will take longitudinal micro data from the Survey of Health, Ageing and Retirement in Europe (or, more briefly, SHARE). Then, we will compare the occupational status and the educational level of more than 400000 individuals coming from five EU countries and divided into first-generation immigrants, second-generation immigrants and local individuals. More deeply, we will first analyse through descriptive statistics related to the labour conditions and to the sectors in which the individuals coming from the different three categories are employed. Finally, we will shift to analyse education, we know that this is one of the main ways to provide skills to individuals. Verifying if immigrants and non-immigrant have the same possibilities to spend time on education means observe if all individuals can improve equally their social conditions. To do so, we will observe how the distribution of time spent on education changes when the three different categories are taken into consideration and we will try to explain which factors originate this through a regression.

CHAPTER 1: DEFINITION, MAIN DRIVERS AND HISTORY OF SOCIAL MOBILITY

1.1 Definition of social mobility

Since the second half of the 19th Century economics, sociology and demography have tried to give an explanation about the reasons why individuals shift from a social position to another. This theme introduced a new subject of study called *Social Mobility*. The widely accepted definition of social mobility is “a movement of individuals, families, or groups through a system of social hierarchy or stratification”¹.

These movements need to be assessed in an Open Stratification System. This last concept has been defined Ralph Linton as “a system where a social position is acquired on the basis of merit and is earned or chosen”².

This assumption is not superfluous since analysing social mobility in a closed class system would be meaningless. For instance, if we considered pre-industrial societies where people were defined by the ancestral occupation (and so the social category defined by status as birth), it would be impossible for them to improve in the social hierarchy.

Concepts defining social mobility are incredibly vast and so modern literature defined six different dimensions through which define social mobility:

- Intragenerational mobility
- Intergenerational mobility
- Absolute mobility
- Relative mobility
- Vertical mobility
- Horizontal mobility

The first two are characterized by the different time frame analysed. Indeed, while the first one refers to the change in the social status over a person’s lifetime, the second refers to changes that occur between generations. Clearly, intergenerational mobility can be used to assess if the key characteristics and outcomes of individuals differ from those of

¹ Definition given by the following source: <https://www.britannica.com/topic/social-mobility>

² Definition given by the following source: https://en.wikipedia.org/wiki/Achieved_status

their parents while intragenerational mobility can be used to observe whether single events (e.g., the change to another profession) during the lifetime have produced some changes in the position of the individual in the social hierarchy. These two aspects are strictly correlated to each other. For instance, if we assume that the society analysed is immobile it will produce a low intragenerational mobility. Assuming that the society still remains immobile in the generation of sons and daughters, this will be reflected into a low intergenerational mobility too.

The second distinction is between absolute and relative mobility. In this case the criterion is given by the social classes considered. While in the absolute mobility is assessed the total observed movement of people between classes, in the case of relative mobility it is estimated the possibility of upward (or downward) movement of an individual from a specific social class to another one.

Finally, the last distinction is between vertical and horizontal mobility. In the first case there is a shift of an individual from a socio-economic condition to another (due for instance to a change in the job prestige or to a marriage). On the other hand, horizontal mobility refers to movement from a position to another one that does not cause any change in the social level (like a change in an equal prestigious occupation).

The main typologies of mobility we will deal with are intergenerational and relative mobility. Indeed, what we will analyse through this dissertation is not only how mobility changed through generations, but we will also deepen which are, for each social category, the statistical marginal probabilities to shift to another one regardless family background or any other external factor that may influence the social position of the individual.

Theoretically, the main goal of each country should be reach what is called the Perfect mobile society. We can define this as “a society in which the probability of entering in a particular class is independent of the class of one’s father”³. However, as some sociologists affirmed⁴ reaching the perfect mobility society is difficult to reach since it is practically impossible delete the influence of the families in individuals’ social classes.

³ Definition given by Prais (1955)

⁴ We refer to paper produced by sociologist Adam Swift (source: <https://doi.org/10.1093/esr/20.1.1>)

Moreover, according to them the condition of equality of opportunities does not require that it exists perfect mobility and, consequently, if the goal of countries was to reach social justice it would not require to complete equality of opportunities.

The systems of values on which each country is based influence their own mobility structure. Indeed, economic factors like person's financial and wealth, human capital such as the education and competences, social factors like the neighbourhood and religion and other non-economic factors can mix in different ways leading to different mobility values around countries. Consequently, western capitalist countries, given the wider access to education, the more developed economic and welfare systems tend to have a higher position in terms of mobility than the developing countries where the access to higher educational system is reduced and social factor as the religion negatively influence mobility. However, this is not a general law since great discrepancies develop not only through countries but also inside of them. Indeed, some other factors like neighbourhood create great differences.

In the figure 1 we can observe this phenomenon at a glance since the most mobile countries (in the table the bluest ones) match with the most developed countries.

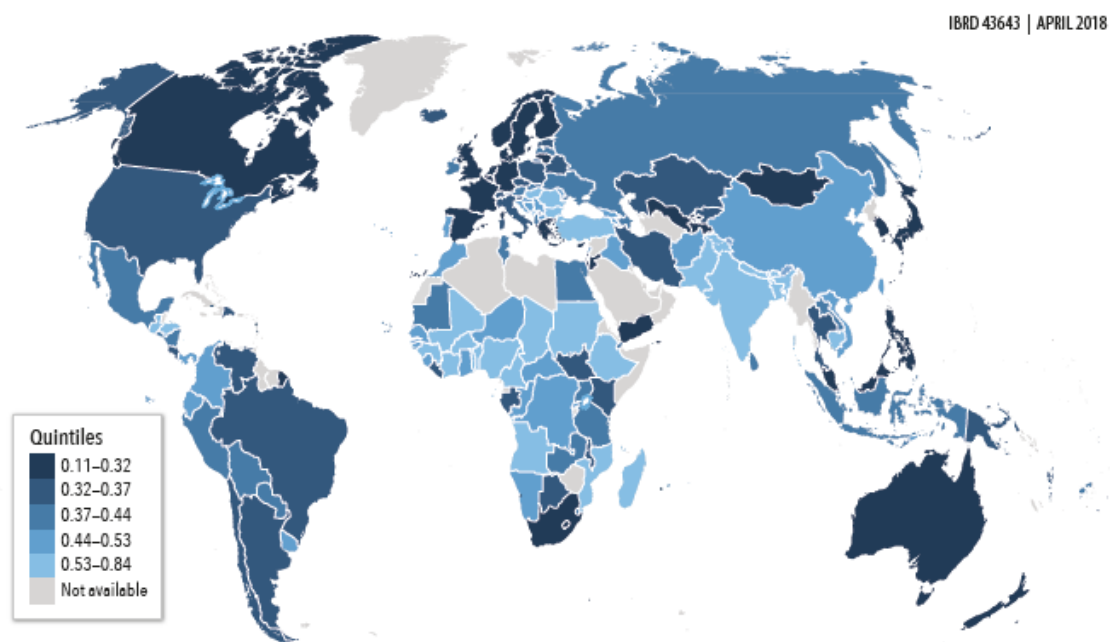


Figure 1: educational mobility around the world, the darker colours mean a higher mobility and vice versa (Source: <https://voxeu.org/article/intergenerational-mobility-across-world>)

The importance of intergenerational mobility is due to two main consequences that make it one the main goals of a public policy: fairness and economic efficiency. Indeed, if a

low mobility is detected then individual's chances of success are largely pre-ordained. Consequently, this concept goes against to any definition of fairness. Moreover, a low mobility can lead also to an unrealized human capital allocation and, consequently to an economic inefficiency. This is due to the fact that a misallocation of resources happens when an individual from a disadvantaged family is excluded from opportunities that favour those in higher social status instead of those with a greater potential. Countries understood the advantages of a mobile population and implemented policies to increase mobility. In particular, since the major waste of human capital is more likely in the bottom of the wealth distribution, countries policies focused deeply on this side of population.

1.2 Some notions of intergenerational mobility around Europe

As argued in the previous paragraph, the definition of mobility requires the assumption of an open class society. Consequently, analysing social mobility in the medieval period would be meaningless. Indeed, society in that period was characterized by a rigid caste system.

This concept can be widely confirmed by a study of Barone e Mocetti who analysed social mobility in the city-state of Florence from the renaissance (1427) to 2011. Although the correlation of incomes between 1427 and 2011 is incredibly close to zero (0.04), it turned out that the first generation considered (in 1427) showed an income persistence nearly close to 1 (0.89). Moreover, trying to give an explanation about the main causes of the immobility in Florence during renaissance, Barone e Mocetti discovered that the top earners' jobs in 1427 matched the ones of these years. This clearly proves that professions can be considered a vehicle of social and economic status.

However, few extraordinary individuals managed to step forward in the social hierarchy also in the preindustrial epoque. Let's take for instance Alfonso de Borgia, he was of the sons a small landowner in Spain and managed to become firstly a university professor and then pope in 1455 but clearly this was an isolated case.

The literature agrees that social mobility is a recent concept and divided its historical development into three phases: the first was the era of industrial revolution then it started the period of the organized capitalism and finally the post-industrial society.

At the beginning of the 19th century upward mobility became a wider phenomenon. This is due to the social background was completely changed: firstly, the enlightenment during

'700 led to new concepts of progress and equality of humans. Moreover, the romantic movement had led to a particular attention on individuals and their feelings and, consequently, revolutionary movements against the aristocracy and the status quo happened. This Period however, although its importance conceptually for mobility, did not lead to huge increase in real terms. Firstly, because according to some statistics the occupational change from agricultural jobs to the industrial one was not huge as we might think. In Prussia for instance industry workers passed from the 3% in 1821 to the 7% in 1861, In France it was only the 16% in 1866 and in Belgium it was the 23% in 1846. Moreover, the liberation from feudal restrictions on immigration and the improvement transportation system led to new educational and working possibilities for migrants. However, states were not ready to offer to all migrants a good welfare in terms of health systems, social benefits and housing systems and so possibilities of upswing shifts for them were limited. Finally, the mentality in the population was still not ready for meritocratic mentalities especially in the lower and in the middle class. Indeed, there was still the habit to transmit land, properties and artisan workshops from father to son and the possibility to access to credit in that period was way more difficult than later stages.

It was only during the period of organized capitalism that a great upward happened. Historians do not totally agree on what was the precise time span, however we can collocate this period between the end of '800 and the first decades of '900. In UK the middle class understood the potential of the steam powers and miner leading to the building of big industries around the country. In addition, agricultural worker started to work for industries and to upgrade their social position. It is estimated that during this century 54.3% sons of unskilled workers improved their social status respect to their fathers. Similarly, outside Europe, in US this was a period of incredible opportunities, even greater than the UK case. Joseph P. Ferrie, professor at the North-western University, after analysing the data of US Bureau of statistics affirmed that during that century the possibilities of an unskilled worker to improve its social status were of 81.4%.⁵ This exploit can be explained by a series of causes: firstly, access to the capital was not anymore a fundamental factor for upper social categories. Moreover, in this period capital became less fundamental in order to manage a company since it started the division between the property and the management like the current companies. Secondly, during this period it developed different families' sizes due to better life expectancy and

⁵ Source of the data: <https://www.jstor.org/stable/pdf/23469614.pdf>

health conditions which implied a weaker relation of the father-son transmission of jobs. Finally, a third point that improved social mobility is given by the better life standards caused by a public social insurance system and the increased job security implying a greater chances of planning vocational training and occupational careers over longer periods. However, it is important to highlight that the impact of great shocks like the two world wars and the great depression created a limit to all those new positive factors limiting the possibilities to upward mobility.

The last historical period is defined as the post-industrial one. As previous historical periods it is not clear the precise time span of it but it is generally defined as the post war period. During this period, as the name might suggest, there was a huge increase not in the industrial area but mostly in the service sector in all countries of Europe. Indeed, it is estimated that from 1960 to 1980 the services sector grew from 37% to 50%. Therefore, in this period it happened a decrease in the agricultural sector. This is important since the shift from the agricultural sector to others implied an increased mobility. Moreover, a second factor fundamental in this period was the expansion in the request of high skilled professions. This process was already started between the end of the 19th and the 20th century, but it was only after the Second World War that it became a mass phenomenon. According to some sociologists this process was a crucial point since it brought to a change in the social stratification since new ruling classes were born. This aspect, together with the first one, led to a completely changed social structure and consequently to a period of new opportunities for everyone. A final aspect to consider is the political one, indeed, after the wars totalitarianism in Europe disappeared and the modern tripartite power systems were rebuilt. The themes of equal opportunities, education, family and became one of the main interests of all liberal, conservator and labour governments. This led to implementations in the welfare systems like payments in case of diseases or unemployment, scholarships for students who could not afford the access to the educational system and old age pensions. Some of them were already implemented in the pre-war context but it was only after that that these measures became significant.

In conclusion, we can sum up that social mobility is a recent event that is born as concept only after the enlightenment and has been developed progressively between the 19th century and the 20th century. The first preindustrial period was not so important for intergenerational mobility in real terms, but it was for the new concepts that it brought. The real growth started during the industrial period and mostly during the post-industrial

one. Social mobility during all these periods grew constantly but without any extreme momentum. Factors like the government intervention, the family structure, migration, changes in the economic structure and in the mentalities led through time to increment somehow social mobility. However, given the lack of data especially for earlier periods, it is difficult to define how much these factors impacted on social mobility overall.

1.3 Main factors that influence the intergenerational mobility

The economic literature recognises several factors which may influence positively or negatively the persistence between generations. In this paragraph a division between four main factors is made.

The first factors that will be analysed are non-economic factors such as genetic and social factors like family and the local community. These have a great impact in the individual mobility since children can be influenced in many ways. An example of this can be given by the many documentations demonstrating that children coming from well-educated environments show higher educational performances and educational levels than those coming from lower educated areas.

Institutional factors constitute the second group analysed. A fundamental element that will be analysed is education which plays an essential role since, depending on the amount and on the quality of the education reached, individual will obtain different skills and so different wages. Consequently, improving the educational possibilities means boost the possibilities to increment their social position.

Thirdly, another factor which influence intergenerational mobility is related to economy. In particular, it has been analysed how liquidity constraints may hamper social improvements. Indeed, according to some model that will be lately explained a human capital investment is done only when it exists a sufficient return to justify it. However, state intervention can reduce costs connected to human capital especially for low social classes where the family background is more negatively influenced by capital constraints.

Finally, in the last part of this section we will observe how economic and non-economic factors are related to each other in real world. Indeed, the job market seems to be the place where economic and social factors are closely related. Some studies will show that social connections can positively impact reducing the entry barriers in the labour market but, on the other hand, may lead to market bias like events of nepotism.

1.3.1 Non-economic factors

In this section it is analysed how non-economic factors can have a causal link in the intergenerational transmission. When we are dealing with non-economic factors, we mean the impact of parental background on the sons' and daughters' future through genetic and social aspects. Firstly, a necessary distinction must be done between these two. The genetic aspects can be expressed as cognitive skills, abilities and talents, but the main characteristic that characterizes them is that they are passed from parents to children without any conscious control. On the other hand, social factors are related to the impact of family and local community on individual. This impact, given by the community and the family, is expressed in terms of wealth, education and occupation.

Looking at genetic factors, according to Emran and Shilpi, the transmission through generations of skills should be considered as factor when social policies are considered. However, according to Checchi, this kind of factor is difficult to identify since it is difficult to observe. This makes it a controversial factor and consequently difficult to adopt in the policy implementation. To support this thesis, analysing the relative contribute of genetics to intertemporal persistence, he observed that this persistence is not statistically significant.

Thus, the main aspect to consider when non-economic factors are considered are mostly the social ones. As written before there are two spheres through which it is intended. The first one it is the familiar sphere. Indeed, according to some sources, family's characteristics such as birth order, gender and families' dimensions influence the individual's mobility.

The impact of family can be seen in many areas. Firstly, according to Hill et al, stable parental relations without intra-household violence, conflict or periods of parental absence can impact positively in children's behaviour at school and, consequently, in their educational performance.

Secondly, parental education, mental health and well-being are important influences on children's outcomes. Indeed, according to Feinstein et Al., parents' education can have an influence on children's mobility. This is due to the fact that well-educated families acquire in the familiar context a wider cultural capital that makes children to perform better. Moreover, according to D'Addio the parental culture leads children to require more cultural goods and services such as books, cultural visits and computers.

Thirdly, the familiar size can influence negatively social mobility. Feinstein affirmed in support of this that there is a negative relation between family size and mobility. According to Becker and Tomes this happens since for every additional child there is a relatively lower financial support from parents. Moreover, Bayard analysing UK and USA data, detected that children from small families achieve higher educational levels than those from wider families. Trying to give an explanation to this phenomenon, some scientist analysed the correlation between family number and parents' education and they found a negative correlation but still too weak to explain a causal effect.

The second social sphere which influence the individual is given by the sociocultural environment in a broad sense. In particular, this aspect is defined by Benabou as “the non-fiscal channels through which the young's acquisition of skills is affected by the social mix of neighbouring families”.

When we look at this aspect, factors such as wealth, educational level, economic success and cognitive capacity play an important rule. Consequently, uneducated environments transmit less ambition and taste for economic success in comparison to those where the education reaches higher levels. In support of this, Chetty et al, discovered that moving from poorer areas to richer ones leads to a higher probability of college attendance and earnings but also that Neighbourhoods have different impacts during the life cycle. Indeed, if this happens before the age of 13 the positive effects earlier described are more relevant. On the other hand, if this happens later the impact seems to be negative because of disruption effects. Bingley has a similar view since, analysing the administrative data of Denmark, discovered that the effects of moving to a better area can have great effects on earnings inequality until the age of 30 while after that age beneficial effects seems to be residual.

One of the main reasons for this can be related to education, especially if the education system is funded through local taxes. This brings that schools in disadvantaged areas may be less founded. In support of this Chetty affirmed that there is a close correlation between areas where local taxes are higher and the upward mobility. Consequently, national policies should not only assess the quality of schools in disadvantage areas but also give sufficient funds to help them to rich similar standards to those in wealthier areas.

However, the biggest obstacle for intergenerational mobility related to neighbourhood is the residential segregation. Indeed, in some countries there is the tendency to polarize the

societies into urban areas and, consequently, to a segregation into homogeneous communities characterized by similar wealth. As we might suspect, given what we said in the previous lines, it is observed that socioeconomic segregation makes inequality more persistent. A child from poor family will be more likely to attend lower level and quality education respect the ones coming from a higher level.

According to a study about France⁶, for an individual who grows up in a neighbourhood where there is a high concentration of immigrants there is a low likelihood to improve in his or her social condition. This probability is even lower in some categories when an ethnicity criterion is applied. More deeply, those appertaining to the bottom quartile (in terms of income) will remain in in that quartile with a relative high probability of 46% for French, 64% for Africans and 95% for Asians/Turks. Moreover, looking to upper quartiles, the probability for those who are in a disadvantaged area to shift to a lower quartile over the lifetime is more than half (58%).

In conclusion, literature highlighted the importance of non-economic factors that can help an individual's mobility. These factors can be divided between genetical (so abilities and skill transmitted from parent in an uncontrolled way) or social (like the family and the neighbourhood). Although non-economic factors tend to be less considered when mobility is analysed, they are fundamental for the individual's mobility since families and neighbourhood are the key to offer a higher education quality and solve social issues like segregation. In addition, parents are fundamental for the educational performance and choices of a child and can improve their request of cultural goods. This proves, as we will see, that intergenerational mobility's factors are related to each other in some measure.

1.3.2 Institutional factors

It is widely demonstrated that the education system is one of the main drivers of intergenerational mobility. This is due to the fact that implementing a certain level of education imply a specific remuneration for the human capital investment. In modern societies education system is essential not only since it is the primary mechanism trough which people acquire skills to perform specific jobs but also because it can intervene to reduce the consequence of critical social and economic backgrounds.

⁶Source of the data: <https://read.dukeupress.edu/demography/article/55/4/1507/167910/How-Durable-Are-Ethnoracial-Segregation-and>

The perfect result of education would be reaching an education-based meritocracy society where the achievement of a specific economic position would depend only on the education and not biased by any particular social category. However, the reality is different from this since the positive correlation of the educational choices between parents and children (dealt in the previous paragraph) prove that family still play an important rule for individuals. Indeed, immobility in society is strictly related to the correlation of the educational choices between parents and children since if the father's occupation requires a particular educational level the occupational immobility will be preceded by an education immobility.

In addition, according to Ishida et al, the role played by education changes in relation to the occupation sector. Indeed, some categories such as small businesses, farmers and self-employed are less influenced by education in terms of mobility. This is due to the fact that in those sectors the familiar training may be sufficient.

The phenomenon causing intergenerational immobility is the under-education trap. The under-education trap is a situation in which some individuals remain in a low educational status from a generation to another. Several reasons like imperfect market conditions or the local externalities can explain this, but the most important ones directly related to the education. Indeed, factors such as the fixed educational costs, the s-shaped educational function and the educational structures have a causal link to the under-education trap.

Firstly, according to the literature, fixed costs are a factor causing under-education traps. In particular, according to Galor, Zeira and Barham, it exists a model to explain this where the net income I_{it} is defined as:

$$I_{it} = (1 - \widehat{S}_{it})(1 + \delta \widehat{S}_{it}^{\varepsilon} h_{it-1}^{\eta}) - \bar{K}$$

where \widehat{S}_{it} represents the optimal choice of education and h_{it-1}^{η} represents the parents human capital. Consequently, the individual will choose to get an education only if

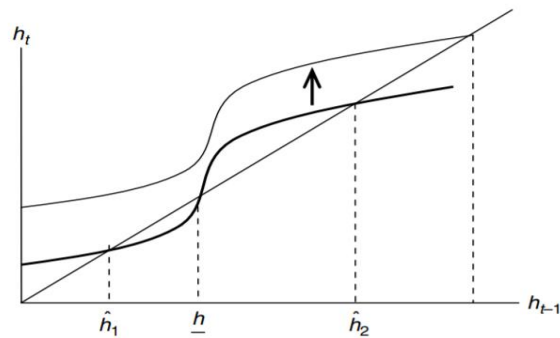
$$(1 - \widehat{S}_{it})\delta \widehat{S}_{it}^{\varepsilon} h_{it-1}^{\eta} - \widehat{S}_{it} > \bar{K}$$

and so, if the parental human capital is sufficiently high respect fixed costs \bar{K} , the individual chooses to get an education. Thus, if at the beginning of a generation it has been decided to not be educated this leads that all the following dynasty chooses to not

be educated while, vice versa, those whose parents have an initial human capital high will converge to a steady-state human capital equal to

$$\hat{h} = (\delta \hat{s}^\varepsilon)^{1/(1-\eta)}$$

Secondly, another factor which explains this phenomenon is the s-shape education shape. This was studied by Galor and Tsiddon and describes the relation between parents' and siblings' human capital. The s-shaped curve can be observed in the graph 1:



Graph 1: relation between parents' and siblings' human capital.

(Source: https://link.springer.com/content/pdf/10.1057%2F9781137283306_9.pdf)

As the picture suggests, three intervals can be defined. Under the value \hat{h}_1 and over \hat{h}_2 there are situations of constant requirement of human capital while between them it exists possibilities for a change in the acquisition of human capital. An essential point is given by \underline{h} since all values above it will converge to a steady state \hat{h}_2 while all those below it will tend to the under-education trap.

Finally, another important aspect to consider when it is accessed how education is linked with intergenerational mobility is the structure of education systems.

According to Chusseau and Hellier, an intergenerational model with three educational cycles (compulsory education, university and vocational study) can generate intergenerational mobility in relation to factors such as different levels of public funding, the severity of the selection of the procedure and the distribution of human between dynasties.

The public expenditure of countries is an essential element for the increase of the intergenerational mobility since, as we will see more in details in the following chapters, there is a strong correlation between educational expenditure and intergenerational mobility. An example of this can be the French one where the increased public

expenditure between 1993 and 2003 led to an improvement in the educational elasticity⁷ passing from 0.67 to 0.25.

It has been observed that early track choices⁸ could be harmful for children's future. An example of this is given by the Finnish school system reform. Indeed, The Finnish school reform took place between 1972 and 1977 and transformed a two-track school system into a single comprehensive school. This decision led to a shift in the age of the track choice from 11 to 16 and consequently to improve the educational elasticity from 0.30 to 0.23. Following to this, Sweden and Germany changed their scholastic system to delay the track choice and improved their own intergenerational mobility too.

Finally, in the table 1 we can observe how education influence intergenerational mobility across countries. Hertz made a cross-country comparison and, through a regression of the children' education on the fathers' ones, obtained the intergenerational education elasticities and correlations. Across Europe we can notice that Italy shows a correlation incredibly high (0.54), while the countries of northern Europe this value is around 0.30 and 0.40. Moreover, the average value in western Europe is comparable to the one in Eastern Europe, this is due to the great effort of the ex-communist countries to raise the educational level of the children of working-class parents.

To sum up, education has an essential impact in influencing the intergenerational mobility but with different magnitudes across countries. Moreover, the parental education can increase or reduce the impact of education in the intergenerational mobility of individuals. Extremely high and extremely low parental education may lead to low education mobility and, while for the first case this phenomenon is not worrying, in the latter case it is since low levels of education are translated into low possibilities to increase the own social conditions. Finally, countries increasing the expenditure on education and creating better educational system can improve the educational outcomes and, consequently, intergenerational mobility.

⁷ Educational elasticity is a value between 0 and 1 which expresses how the educational level changes between generations. The closer this value is to 0, the higher the difference in education between the two generations

⁸ early track choice means the separation of children by ability into different school tracks.

Country	Elasticity coefficient	Correlation coefficient
Netherlands	0.58	0.36
Ireland	0.70	0.46
Finland	0.48	0.33
Denmark	0.49	0.30
Switzerland	0.49	0.46
Northern Ireland	0.59	0.32
Sweden	0.58	0.40
Italy	0.67	0.54
Norway	0.40	0.35
Belgium	0.41	0.40
United Kingdom	0.71	0.31
Regional average	0.55	0.38
Slovenia	0.54	0.53
Estonia	0.54	0.40
Poland	0.48	0.43
Slovakia	0.61	0.37
Hungary	0.61	0.49
Ukraine	0.37	0.39
Czech Republic	0.44	0.37
Regional average	0.51	0.43

Table 1: table showing educational mobility in terms of elasticity coefficients and correlation coefficients in western Europe (in the first part) and in eastern Europe (in the second part). (source: https://www.researchgate.net/publication/4908239_The_Inheritance_of_Educational_Inequality_International_Comparisons_and_Fifty-Year_Trends)

1.3.3 Economic factors

Wages represent one of the most important factors when intergenerational mobility is evaluated. Indeed, in all the OECD countries it persists a correlation between the earnings of fathers and sons. This correlation, also called intergenerational earning elasticity, is widely widespread in all countries but with some differences. Indeed, while in countries like UK and Italy the likelihood that high-earnings fathers transmit to their own sons that economic advantage is of 40%, in northern European countries like Denmark and Norway it is of almost 20%.

All the literature agrees with the view of a correlation between fathers' and sons' earnings, however with different positions about the magnitudes of this phenomenon. According to Becker and Tomes, two economists famous for the implementation of a model about human capital, a 10% increase in the father's earnings can lead to an increase in the son's

earnings of 2%. However, this data seems a bit underestimated since a single-year analysis was considered and, consequently, leading to inconsistent result. Solon tried to overcome this issue analysing the regression of sons' log-earning on father's ones in a wider time frame and found an elasticity estimate of 0.3. Another issue is related to the lifecycle earnings since comparing wages of a son at the beginning of the working life and a father who is already working experience can be misleading. To overcome this issue, Reville in 1995 estimated the regression of a five-year average. This led to obtain a realistic estimate close to 0.5. Many other studies then happened but all the estimates of intergenerational earnings elasticity revealed a consistent correlation between 0.3 and 0.5.

Analysing this, OECD discovered that individuals whose father owns a tertiary education have a greater probability to earn more than those whose fathers got an upper secondary education. This aspect, in some countries like Italy, Finland and UK, can have a great impact since father's tertiary education raises of at least 20% the son's wages. However, they found also that the magnitude of the wage persistence is slightly lower when daughters are considered in place of sons.

Given these aspects, we should consider when an investment in human capital is a good investment. According to economic theories, a human capital acquisition can be considered as an investment problem in which the investment is taken if the return is positive (and consequently if the future potential earning of the child could be higher). Given this definition, for an individual with a great potential but with a poor family should be worthy invest in human capital but that is not what happens in the reality. The main explanation for this is given by market constraints. Indeed, assuming that there is no state intervention, since markets are imperfect low-income families would not be able to obtain funds for their children future. Consequently, it is not surprising that in countries where there is no state intervention (like UK or US) in education the intergenerational mobility is lower. However, the existence of empirical evidence in literature about the existence of credit constraints in developed countries is still weak since it is difficult to observe whether families have access to credit or not.

The importance of liquidity constraints and of returns in education brought Becker and Tomes to formulate an economic relation in which human capital investment has economic consequences in the individual's income. In their model they assumed (unrealistically) that markets are perfect meaning that the family can borrow any amount

they desire. This implies that future earnings are determined in the one hand by internal factors such as the capital investment and the non-economic variable like genetic factors, and in the other hand external factors like the government expenditure in education. Consequently, we can rewrite this relation as:

$$H_{t+1} = H(X_t, E_{t+i}) + w_t$$

Where H_{t+1} represent the return to human capital (the expected earning), X_t is the expenditure of parents in siblings' education (but it can be substitute with public expenditure), E_{t+i} is the inherited children endowment and w_t is the white noise value called market luck. From this model we can understand that when it exists an intelligent child (and so where the marginal return is higher) the request of human capital will be consequently higher given the fact that it is assumed that there is no limit in capital request. However, we know that the reality is different since market constraints exist. Indeed, the market failure is due to the fact that human capital cannot be resold and, consequently, it cannot be used as collateral for poor families who may find difficulties to receive sufficient capital.

Looking at the investment in human capital, as the previous model explained, it is undertaken if there are sufficient expectations about the future earnings and, related to this, employability. Moreover, we must think that, since education is a cost, the return must be sufficiently high to cover the educational costs. According to a paper from Trostel, Walker and Woolley, the return varies across countries. The return in countries like UK, Ireland, Poland and Slovenia seems to be higher than other European countries. Moreover, it has been founded that it exists a correlation between the rate of return and the per capita income. in particular, greater returns have been detected in those countries which are the richest and the poorest ones and, on the other hand a lower return in those countries which are in the middle of the richness per capita level. Moreover, it seems to exist a slightly relation between the return and the percentage of GNP⁹ spent on education.

In conclusion, all the literature agrees that there are economic factors which hamper intergenerational mobility. Firstly, we can observe that it exists a predictability in the siblings' earnings given the parental ones. Again, education is a way through reduce this

⁹ GNP stands for gross national product and it consists in "total market value of the final goods and services produced by a nation's economy during a specific period of time (usually a year), computed before allowance is made for the depreciation or consumption of capital used in the process of production" (source: <https://www.britannica.com/topic/gross-national-product>)

correlation with the parental earnings but also this factor can be considered an economical decision. Indeed, according to the model analysed, human capital is taken only if it can guarantee an adequate return. Moreover, capital constraints represent an obstacle for the optimal human capital that can be overcome through the state intervention.

As it will be deeply analysed in the following paragraph, economic and non-economic factors are closely related to each other. The way through which they cause intergenerational mobility will be now deepened.

1.3.4 Interactions between economic and social factors

The last paragraph explains how the previously described factors such as economic and social factors are related to each other and impact on intergenerational mobility. We know that one of the main ways through which intergenerational mobility is given is by wages. Consequently, the labour market can be considered a place where intergenerational mobility can be developed. There are two ways to find employment: one is formal which implies the use of employment agencies, newspaper agencies or also the career service of universities, the other is non-formal and implies social ties between job seeker and current workers or letters of reference.

Given these two definitions, we can clearly understand that both social and economic factors are linked together in the job market. According to Mauro Sylos Labini, social contacts play a fundamental role for graduated individuals looking for their first job. Indeed, in countries like Italy and Spain almost one third of students obtained their first occupation through social contacts. On the other hand, in northern European countries such as Finland, Sweden and Norway this represents a marginal channel (less than 7%).

Both two methodologies have positive and negative aspects. Analysing the informal one, Montgomery stated that it is useful to reduce social barriers between the company and the future employer. Moreover, he affirmed that it is an advantage for companies since in that way they can reduce advertisement costs. However, as we might suspect, an informal job market would lead to immobility and to inefficient job allocation. On the other hand, a formal job market would produce a more efficient market, since there would be more efficiencies due to the fact that employees would fit better for the job position but it is also more time-expansive. Thus, the comparison between a formal and informal job market constitutes a trade-off between an efficient job allocation and a time-saving procedure.

According to Merlino, the substitutability of formal and informal job search can lead to situations of multiple equilibria that are pareto remarkable. An equilibrium of formal and informal solutions in the job market depends on two conditions. The first one is given when, in formal research, the marginal costs of research are equal to the marginal returns. This condition is related to the informal research since marginal return in formal research decrease with the networking matching rate. Moreover, a second necessary condition is when, in informal research, the marginal costs of socialization equate the marginal benefits of networking. The combination of these two conditions determines the equilibrium between informal and formal research.

However, when links between social and economic factors are involved, favouritism practices appear and influence both public and private sectors. Family can have an essential role in this, indeed, we can talk about nepotism when an individual is assisted by relatives through the recruitment process.

According to Alesina and Giuliano, strong families' ties imply more reliance on the family as economic unit and less on the market. In particular, they discovered that in southern Europe countries this phenomenon has a great impact. In Italy for instance, a clear symbol of nepotism can be seen in the public sector. Indeed, according to Scoppa, if a father is employed in the public sector, it will exist a 44% more likelihood that the son will work in the same sector. Moreover, looking at the private sectors, some companies like Anas or Rai provide some guarantees of siblings in the recruitment process. These preferred channels are disposed not only in case of retirement, but also in case of injury or premature death of the worker. Nepotism in Italy is not an isolated case, since already in the licensing exam of some liberal professions it exists an 8,1% more of chance in passing it for those whose father is doing the same job¹⁰ and this advantage is reflected in the occupation since there is a 12.5% higher probability for sons to work in the same liberal profession of fathers.

In conclusion, social and economic factors are strictly related in the job market. The inclusion of social factors in the job search can have positive aspects since it is more time saving and reduces advertisement costs. However, some distort effects of this may lead to nepotism events where individuals are not chosen for their merits but for their

¹⁰ Source of the data:
<https://www.york.ac.uk/media/economics/documents/discussionpapers/2014/1414.pdf>

connections. Social contacts and families' ties are causes of mismatch in the job market and, consequently, they can hamper the return on human capital investments. As we saw in the previous paragraph, a not incentivized human capital investment can be a threat for intergenerational mobility. A potential solution for these issues may be given by the reduction in the entry barriers that might be too costly for children. Thus, state intervention to support financially education and reduced barriers for liberal professions may support them in obtaining those occupations.

1.4 How intergenerational mobility can be assessed

Intergenerational mobility is a complex phenomenon that makes difficult not only to access the main causes but also to measure it. Firstly, it is difficult to determine what should be measured. Indeed, there are different ways to observe intergenerational mobility. The first one is related to the socio-economic status and so analysing if individuals have increase or lower their social status respect to the one of parents. A second way is to analyse the equality of opportunities. This because equality is strictly correlated to mobility and, consequently, it is sometimes used as proxy to detect intergenerational mobility. However, literature through ages has preferred deepen the first way analysing in details associations related to the social-economic status than using an inequality approach.

A second kind of problem when intergenerational mobility is assessed is related to the lack of data which can be used to assess it. This is due to the fact that the measurement of intergenerational requires data from a long timeframe since it needs information of at least two generations. Consequently, dataset may not be completed or too small and so operate on them could lead to misleading or not significant results.

A third issue is related to the different methodologies to measure intergenerational mobility. Indeed, it can be used three different measures: incomes, occupational classes and educational outcomes. All these methodologies, as we will see, have different positive and negative aspects and can lead to different outcomes.

The most widely used measure is Income mobility. As the name might suggest, it is the measure of mobility using income as independent variable. This measure, respect to others has an inherent scale that makes simpler the comparison across countries or through time.

However, we might think that it could exist some difficulties in measuring income. Firstly, this process would require measuring the lifetime income for both parents and children in order to have coherent measures and not only snapshots of precise time intervals.

Moreover, there would be also another issue related to the different level of income during the life cycle. In particular, it is estimated that during life, income in an early stage tend to be smaller than in the middle or in the latest part of life. However, to overcome this last problem, current literature tends to measure income through averages in the middle of life of individuals.

The measure produced when income is used is the intergenerational income elasticity (also called briefly IGE). This measure is a slope coefficient obtained through a regression and it expresses the connection between parents' and children's income. A high value of IGE means a strong correlation between the two incomes analysed and vice versa. A general model through which it can be obtained the IGE parameter is the following:

$$Y_{i, \text{child}} = \alpha + \beta Y_{i, \text{parent}} + \mu_i$$

β is the parameter of IGE and is obtained through the OLS estimation. This means that we are using a method to estimate a parameter in a linear regression model which is able to guarantee the minimum variance between the observed responses of the dataset and the linear approximation. However, since we are dealing with parameters of a linear regression this method could not be able to describe relations which might be nonlinear or when the errors are not IID¹¹

A second solution for income mobility can be the intergenerational correlation (or, briefly, IGC). In this case the parameter will be the Pearson correlation coefficient¹² between child's and parent's income. Here, when the correlation coefficient is close to one it means that there is a high correlation between the incomes of parents and children and, consequently, it is symbol of a perfectly immobility society. Differentially from the

¹¹ When we use the OLS we must assume that the residuals error term is IID which means that the expected value is equal to μ , the variance is constant and it does not exist autocorrelation. Often samples do not have these characteristics necessary to apply OLS estimation.

¹² The Pearson correlation index is a measure between -1 and 1 which is equal to the ratio between the covariance of two variables and the product between the standard deviation of them.

IGE, IGC abstracts from the distribution of incomes and, consequently, a possible increase in the variance of income will lead an increase in IGE while in IGC not.

Another way to observe intergenerational mobility is through the education. As we saw in the paragraph 1.3.2, education represents one of the best ways to eliminate social immobility since it gives to individuals the possibility to improve their social position beyond any social status of origin. Consequently, educational outcomes can be used as measurement of intergenerational mobility since it can be considered a proxy for income and occupational success.

Respect to other socio-economic measures, educational mobility can be obtained more easily and, differently from the income mobility, is less dependent from external factors like inflation or the different values of income during the life cycle.

The educational mobility is, similarly to income mobility, obtained through a regression between the children's and parents' educational outcomes or through a correlation coefficient. The data for the regression can be measured considering the number of years required to obtain the qualification or transforming the educational outcomes into ordinal rankings, for instance by ranking degrees. The model that can be used is the following:

$$S_1 = \alpha + \beta S_0 + \varepsilon$$

On the other hand, another way to access it is the correlation coefficient which measures the correlation between the parents' and children's educational outcome through the Pearson index. This value is more suitable than the first one when different countries or ages are compared. This is due to the fact that, similarly to income mobility, parents' and siblings' distributions change greatly between countries and time and this change may lead to a change to the regression parameter while this is not possible in the correlation parameter for definition¹³.

However, also this measure presents some critic points. A first issue is related to the input data since they might be difficult to interpret. This because creating a ranking for degrees would be meaningless due to different school system through ages or in countries. A solution to overcome this might be the use of the number of educational years but still the problem will exist in the data. Moreover, a second issue is related to the fact that past data

¹³ By definition, a change in the correlation parameter must come from a change in how strong children's education is related to parents' one.

might not be reliable since back in time not all the educational achievement were systematically registered or also because there were also different educational schemes outside the school system. This clearly implies that data might be not precise.

Finally, a third measure is related to occupational outcomes. These values can be transformed into variables such as occupational prestige or into social classes¹⁴. This is an essential step to make occupation rankable somehow.

A way to rank occupations is given by the International standard classification of occupations (or, briefly, ISCO). It is a standard adopted by united nations where occupations are ranked, according to similar skills level and skills specialization required for the job, into 10 major groups as shown in table 2:

MAJOR GROUPS

- 1 Managers
- 2 Professionals
- 3 Technicians and Associate Professionals
- 4 Clerical Support Workers
- 5 Services and Sales Workers
- 6 Skilled Agricultural, Forestry and Fishery Workers
- 7 Craft and Related Trades Workers
- 8 Plant and Machine Operators and Assemblers
- 9 Elementary Occupations
- 0 Armed Forces Occupations

Table 2: The ISCO occupations' major groups. (Source:<https://www.cbs.nl/-/media/imported/onze-diensten/methoden/classificaties/documents/2014/05/isco-08.pdf?la=nl-nl>)

Similarly to income and education mobility, occupational mobility can be obtained through a regression. The regression model can be the following:

$$S = \alpha + \beta F + \varepsilon$$

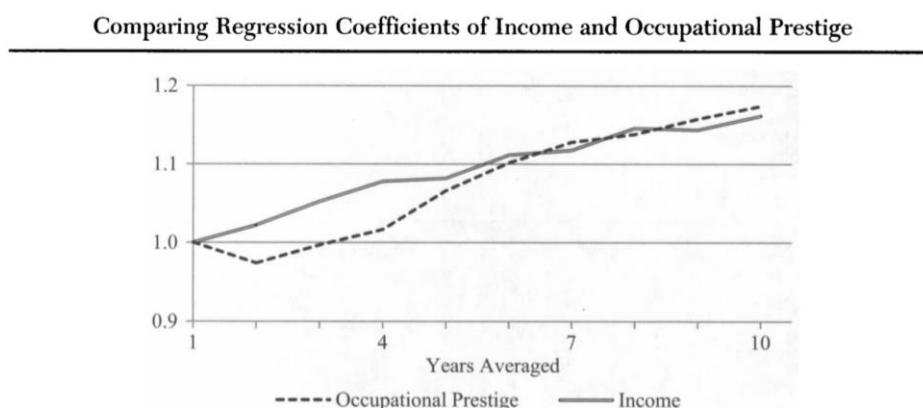
where S represents the measure of son's occupational status, F represents the corresponding measure of the father and ε represents the error term. The occupational mobility is given by the parameter β and can be obtained through a OLS estimation.

Occupational mobility has some positive characteristic like the availability of historical data (as we saw, for instance, in the paragraph 1.2 it has been possible obtaining

¹⁴ A social class can be defined as a group of individuals which have similar socio-economic conditions according to an occupation basis.

occupational mobility from 15th century given the occupational data in Florence) but still it remains the negative aspect that occupations are not inherent data and, consequently, it might be not comparable in time or across countries.

A positive aspect about occupational mobility is related to the fact that it is more accurate than income mobility. Indeed, part of literature affirmed that this is due to the fact that occupations are less volatile than incomes and consequently they produce more accurate results. However, according to Mazumder and Acosta, differences between occupational and income mobility exist only when using single year periods or short-term averages while in case of 10-year averages both techniques reveal similar values as showed in the graph 2.



Graph 2: comparison between occupational and income elasticities.

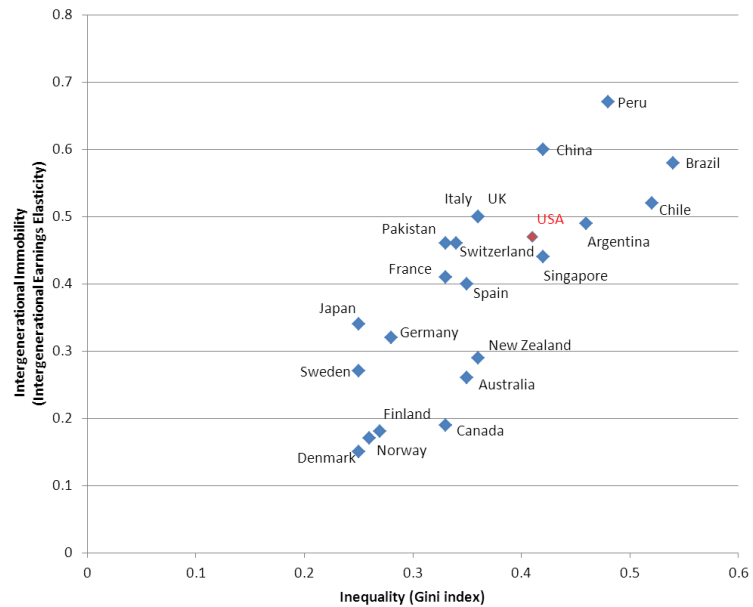
(source: <https://journals.sagepub.com/doi/pdf/10.1177/0002716214552056>)

However, as we said at the beginning of the paragraph, socio-economic measures are not the only ones that can be used to express intergenerational mobility. Another way to intend intergenerational mobility is related to the different inequality of incomes. Consequently, academics and policymakers are always more interested in measuring inequities and a possible solution might be given by the Gini Index. This index measures the dispersion in the income distribution of a nation and, consequently, it can be used to explain how much a nation's income is concentrated among the wealthy part of population. The index outcome is a value between 0 and 1 where values close to 0 represent a perfect income equality and those close to 1 a perfect income inequality.

OECD analysing the issue of inequality observed that it exists a relation between the income inequalities and wage persistence across generations. This is an important aspect since a policy intervention capable in reducing income inequality can lead to a reduction

in the wage persistence across generations. Similarly, Corak observed that the growth of inequalities in high income countries leads to limit income intergenerational mobility. Consequently, he described this relation through a curve that following would have been named as the great Gatsby curve.

The Great Gatsby curve links the inequality in the x axis (measured through the Gini index) to the intergenerational immobility in the y axis (expressed in terms of earning elasticity). Corak observed that it exists a positive relation between these two variables and, more deeply, that increasing the inequality leads to an increase in terms of intergenerational immobility. However, he also stated that the curve can demonstrate a



Graph 3: The relationship of intergenerational earnings elasticity and income inequality. (source: https://en.wikipedia.org/wiki/Great_Gatsby_curve#/media/File:The_Great_Gatsby_Curve.png)

correlation between the two factors but the causal relation is still to be proved. As we can see from the graph 3, European countries such as Denmark, Norway and Finland are placed in the bottom of the curve while Italy and UK are placed on the bottom of it.

To conclude we must give some considerations about both equality and socio-economic status measures. We know that the equality measures are able to perfectly describe the distribution of income between individuals in a certain country. This is perfect to analyse the equality in a country but it is also a limit since it does not say anything about the internal shifts of the population in the social hierarchy of a country. On the other hand, socio-economic status measures like income mobility, educational mobility and occupational mobility allow to do that. Now, since the aim of this research is to analyse how is changed the social structure in Europe across generations we will now on only refer to this last aspect.

CHAPTER 2: IMPLEMENTATION OF POLICIES TO INCREASE INTERGENERATIONAL MOBILITY

2.1 Why implementing a policy to increase the mobility is a good choice

In the previous chapter we have seen that intergenerational mobility implies a movement of an individual in the social hierarchy. This movement in the social ladder is not random but it is complex and influenced by several factors. Indeed, economy, education, social aspects and other non-economic factors like the neighbourhood or the family play an important role in the definition of the individual in the society.

Some of these factors are difficult to control. If we consider for instance some elements like the cognitive skills or the social connections, we can clearly understand that an external intervention in these is not feasible. On the other hand, some other factors can be shaped by an external intervention. Let's assume for instance education, in this case a government intervention on it could improve the education of individuals and, consequently, give them the possibility to improve the social ladder.

Therefore, we should firstly try to understand when the external intervention of countries is possible and secondly how policies should be shaped in order to produce results in the national context. Let's consider for instance the segregation problem. As we have seen in the previous chapter this can create a reduction in intergenerational mobility. Thus, since it is a phenomenon that clearly can be somehow influenced by an adequate policy we should understand if this kind of intervention could work in countries where it exists a high level of immigration like France or Belgium respect to Poland and Romania where this phenomenon is residual.

It is in countries' interest to implement intergenerational mobility because of the beneficial implications in both economic and social aspects. Indeed, a lack of upward mobility can cause various damages in countries. For instance, if that happened it would mean that many potential talents are missed out or remain under-developed. Consequently, this would lead to a lack of exploitation of potential business and to a reduction in terms of productivity and economic growth.

Moreover, upward mobility has positive aspects in terms of equity, life satisfaction and in the well-being of people. Contrarily, social inequalities and the absence of social cohesion caused by immobility can mine the trust in the political systems (which may lead in the more serious cases to political extremism and populism) and cause violence

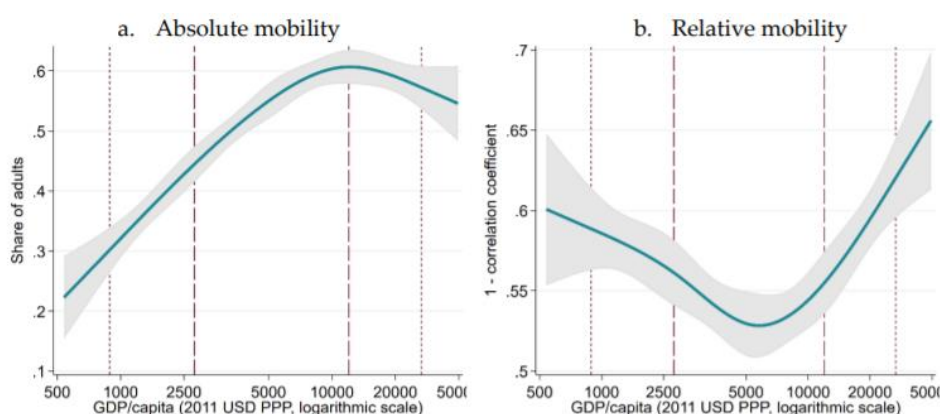
and critical health condition in the low strata of the society. All these aspects will be deeply analysed in the following subparagraphs.

2.1.1. Positive effects in the economy

The definition of social mobility requires that it exists a movement in the social hierarchy for the individual *per se* (in case of intra-generational mobility) or respect to the social position of parents (in case of intergenerational mobility). In this last case, as we have seen in the previous chapter, one of the ways to observe this change is through a regression between the individual's income and the parental one. This could lead us to wonder what the implications on the economy could be if it existed an improvement in intergenerational mobility in an aggregate level.

Many studies have found a positive correlation between the social mobility and the economic growth. This aspect is clearly important for countries since implementing a policy to interrupt immobility may lead to a growth in the country's economy and, consequently, to a higher tax revenue. This can produce positive implications in terms of supply of public goods and services (like, for instance, public transports and health systems), in incomes and, more general, in the wellbeing of people.

The positive correlation between economic growth (in terms of GDP/capita) and intergenerational mobility has been found by Van der Weide et Al., although with some differences. Indeed, these relationships follow a U-curve for relative mobility and an inverse U-curve for absolute mobility as described in the graph 4.



Graph 4: two graphs showing the link between GDP and absolute and relative mobility. (Source: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3981372)

The behaviours here shown are due to different causes. In the case of absolute mobility, the lowest rates of absolute mobility are located where there are in the lowest and the

highest levels of GDP/capital. The reading key here is that in the poorest countries population has many difficulties to obtain education (as we saw in the first chapter, this is due to the phenomenon called poverty trap) leading children to have the same conditions of parents. In the opposite case, in the richest countries the possibilities of increasing absolute mobility are reduced since similar levels of education and incomes between children and parents are more likely to happen.

On the other hand, in the relative mobility's case (where it is not observed the difference between children and parents in terms of incomes but it is considered the child position in the distribution of incomes respect to the one of parents), in the poorest countries there is a higher relative mobility since the large majority of parents are equally deprived and consequently it is more likely a shift in the distribution respect to the one of their parents. Similarly, in the richest countries it exists a great level of mobility due to the opposite reason (given the fact that people are similarly wealthy, the likelihood to shift to a lower quantile of income's distribution is higher). Moreover, in this last case, there are more resources that can be used to increment the public intervention through an adequate fiscal policy and, consequently, give children who grow in disadvantaged backgrounds opportunities to fulfil their potential.

As discussed above, the fiscal policies are a way through which nations can intervene to equalize opportunities and consequently increase mobility. Indeed, it has been found that increasing public expenditure in some factors (e.g., education) can consequently increase the mobility with a strong and always positive relation. Consequently, an increase in GDP can indirectly mean an increase in mobility since there are more possibilities to finance interventions helping children from poorer families to achieve better educational and employment outcomes.

The investment in human capital of countries is a win-win strategy, not only because it is capable to increase mobility but also because it is one of the main factors which can improve the productivity and consequently the aggregate output. In particular, labour productivity measure (which defined as the amount of GDP per hour of labour) is influenced through factors such as human capital, technologies and investments in physical capital. Consequently, if governments increased the education of their citizen it would lead to improve the number of individuals with a higher level of skills which would determine a greater capability to contribute to production than those who got a lower

instruction level. This has been confirmed by Checchi who, after analysing data about labour market in Greece, Germany, UK, USA, and Italy, discovered that labour market participation increases significantly from compulsory to secondary education.

However, the link between policies which implement intergenerational mobility and the economic growth is not unanimously accepted. Indeed, while some academics like Piketty state that an adequate corrective policy can have a beneficial effect in both equality and efficiency, on the other hand, some other authors like Okun affirmed that it exists a trade-off between equality and efficiency because policies promoting equality are rarely costless and are paid in terms of efficiency. With the same view, OECD warned about the possibility that policies with the goal to implement intergenerational mobility, if not correctly weighted, may produce potential output losses by affecting other drivers of growth. For instance, a redistribution policy such as the progressive labour taxation if not correctly weighted may lead to labour inefficiency.

The point here is to understand what we mean with efficiency. The efficiency (or, more precisely, the pareto efficiency) can be defined as a state where every resource is allocated optimally such that each individual can reach the maximum possible utility. Now, in relation to social mobility, equality would mean that individuals occupy the same position in the social hierarchy and this would imply an increased utility for those who occupy lower half positions in the social ladder but also a lower utility who stay in the upper half. This clearly denotes that any measure regarding social mobility which has the goal to improve equality cannot be considered pareto efficient.

For this reason, part of the literature does not agree with the definition of pareto efficiency when equality is considered. Roemer, for instance, states that mobility measures can have a such great impact on equality that the small reduction in terms of GDP per capita that these measures could have cannot justify the decision to not undertake them.

From the institutional point of view, according to the world bank, the trade-off between equality and efficiency when social measure are undertaken may exist but only in the short term. In the long term instead, mobility is perceived as complementary to the long-term economic prosperity since greater mobility implies a more efficient economic functioning, reduced social conflicts and better institutions and consequently more possibilities for investment and growth. Analogously, according to OECD, it exists a beneficial impact of social policies that increases not only intergenerational mobility (and,

consequently, develops equality of opportunities) but also economic growth (since thanks to mobility there is an allocation of human resources to their best use).

Finally, looking at the European point of view, the council of Europe in 2013 stated that intergenerational inequality has a causal link with inefficiencies. The European institution gave as explanation of the importance of intergenerational mobility declaring that firstly a mobile society would lead to a more equal society (and, consequently, to respect the principle of equality, one of the bases of the European union). Moreover, it argued that an immobile society can causes a divided society and, consequently, hampers the economic growth.

The fact that social mobility measure can improve the social cohesion is important because social cohesion is considered one of the factors which favours economic growth. More deeply, according to the German development institute, it would exist a “potential feedback loop from growth to cohesion”¹⁵. The institution indeed explains that relation as follow: “if there is an economic growth then there are possibilities for policies reforms intervening on taxation and social protection. This aspect would increase possibilities to have better education system, a more equal society and better job market, which would improve both social cohesion and growth. On the other hand, if it exists social cohesion in society, then it exists a better link with institutions which would lead firstly to a less polarized society and then, through the channel of reduced rent seeking and improved provision of public goods, to an economic growth”. We can sum up all these concepts in the figure 2.

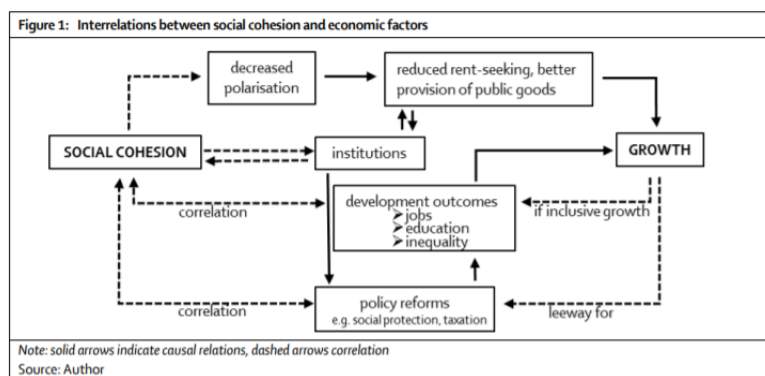


Figure 2: the link between social cohesion, growth, and policy reforms (source: <https://www.econstor.eu/bitstream/10419/206857/1/bp-16-2019.pdf>)

¹⁵ Source of the quote: <https://www.econstor.eu/bitstream/10419/206857/1/bp-16-2019.pdf>

2.1.2. Positive effects on equality

The great Gatsby curve analysed in the first chapter has established a relation between inequality (measured through the Gini Index) and intergenerational mobility (through the intergenerational earning elasticity). This curve has shown a strict correlation between these two factors and, given this, we could think that a social policy with the aim to reduce inequality does not only produce improvement in this but it can also produce positive consequences in intergenerational mobility. Indeed, if we consider that Gini index expresses the homogeneity of incomes (or earnings) of individuals in a country we can clearly understand that an improvement in the heterogeneity of incomes can produce a subsequent change in social hierarchy of individuals and consequently improve the social mobility of that country. However, although overall academics agree in the correlation between intergenerational mobility and income equality, some researchers do not totally agree on the causal relation between them.

To deeply understand this phenomenon, it is necessary to define what is meant by inequality of incomes. A definition given by the OECD is the following one: “economic inequality is the difference in how assets, wealth, or income are distributed among individuals and/or populations”¹⁶. The interest in this argument has been increasing from 1980 since when it has been observed a positive relation between equality and intergenerational mobility.

The United Nations recognized the importance of fighting inequalities to obtain a better and more sustainable future for everyone and it defined that as one of the seventeen Sustainable development goals¹⁷. To reach equality the UN organization has defined ten important elements in which operate. Seven of them are outcome goals which are fundamental to obtain greater equality like achieving and sustaining the income growth of the bottom 40% of the population, improving the regulation and monitoring of global financial markets or the adoption of policies related to the growth of wages and social protection. On the other hand, the other three targets are referred as tools to achieve those targets such as the reduction to less than 3% the transaction costs of migrant remittances or to assist and finance the less developed countries.

¹⁶ Source of the quote: https://www.oecd-ilibrary.org/social-issues-migration-health/income-inequality/indicator/english_459aa7f1-en

¹⁷ The Sustainable development goals (or also SDG) represent a series of goals to reach in 2030 to improve the social and economic conditions worldwide.

In this respect, the European commission recognised the extremely importance of the inequality's reduction asserting that "Reducing these social and economic inequalities within and among countries is not only key to ensuring that no one is left behind, it is also a necessary condition for sustainable poverty reduction and social cohesion"¹⁸. Moreover, the EU declared its intentions to overcome this issue following a multi-dimensional approach like the creation of opportunities for both youth, women and disadvantaged communities, the facilitation of safe immigration and mobility, the increase economic inclusion and the creation of pro-poor fiscal policies. It is important to notice that all these aspects declared by the European Union are strictly related to factors which can have a positive impact on intergenerational mobility too and, consequently, it let us appreciate the link between intergenerational mobility and equality.

We should now evaluate the key drivers where the inequality conditions can produce problems for intergenerational mobility and, consequently, how countries should operate through adequate social policies in order to favour both intergenerational mobility and equality.

A first aspect to consider is related to segregation. Indeed, there is a link between poverty and segregation and, as analysed in the first chapter, segregation is one of the main social factors which hamper intergenerational mobility. Durlauf in his paper explained the link between all these factors asserting that it exists a tendency in families to segregate themselves into economically homogeneous neighbourhoods. Moreover, he proved that, if this stratification is strong enough, inequalities are persistent in time leading to future generations to have the same economic conditions of the previous ones.

Looking at the policies contrasting segregation, according to Andersson et Al, countries can intervene to reduce this phenomenon. It has been established that problems connected to this phenomenon are related to the social mix in the high-density neighbourhood. Indeed, Andersson making a cross comparison between Belgium, Sweden, Denmark, and Nederland, affirmed that where it exists a high level of density, negative neighbourhood effects (like the lack job opportunities) might emerge. To solve this issue Sweden, Denmark and Nederland prevent segregation by stimulating the mix between different

¹⁸ Source of the quote: https://ec.europa.eu/international-partnerships/sdg/reducing-inequality_en

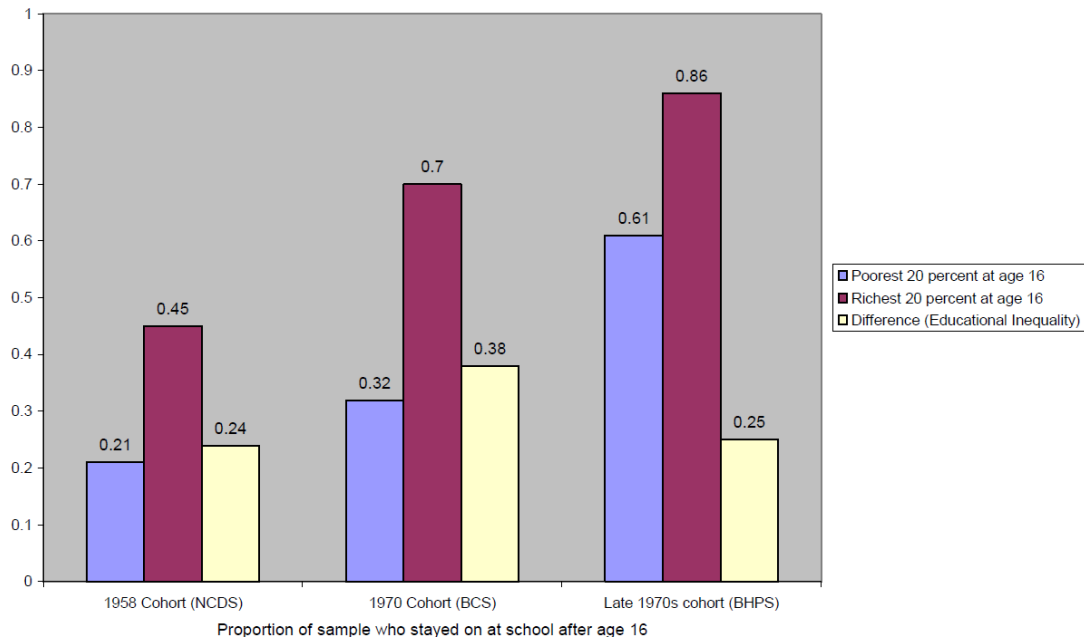
socio-categories. Indeed, public housing has not been only offered to the poorest categories but also to the middle-income categories.

Moreover, it is essential to intervene with policies not only to favour the mix between social categories but also to guarantee that this happens in a significant way. This means that public housing offer should be proportioned to the size of the population. For instance, while in Belgium (which produced the worst results in the sample) this sector represents only the 6.9% in Netherland (which, on the other hand, produced one of the best results in the fight to segregation) the share is the 44%. Consequently, we can conclude that public housing policies are not only essential to guarantee a house to all the families eligible for public rental housing but also to reduce possible segregations by mixing different social classes.

A second driver is related to education, if inequality existed in education this would produce less educational outcomes in those individuals who live in the bottom quantiles of the income distribution. Blanden tested this hypothesis analysing the impact of family income on education (that, as we saw in the first chapter, can be considered a benchmark to measure intergenerational mobility). What it resulted is a reduction between the 3% and 4% in the probability of achieving a degree between the wealthiest and the poorest families. In addition he proved that there are always significant results in the causality impact of the different levels of income on education. Consequently, policies that focus on the education of poor children can have a beneficial effect in both intergenerational mobility and equality.

Governments can intervene through adequate education policies in order to reduce both intergenerational mobility and inequities. Literature indicates different strategies in order to implement it. According to Mitnik, this phenomenon would be further reduced if it existed a mass tertiary education, giving the possibility to all poor children to get a tertiary degree. In this sense, we must remind that it exists a positive correlation between educational investments and the wealth of a family. Indeed, as illustrated in the graph 5 by Blanden, it still exists a great difference between the poorest 20% percentile and the richest 20% percentile in the decision to undertake a tertiary education.

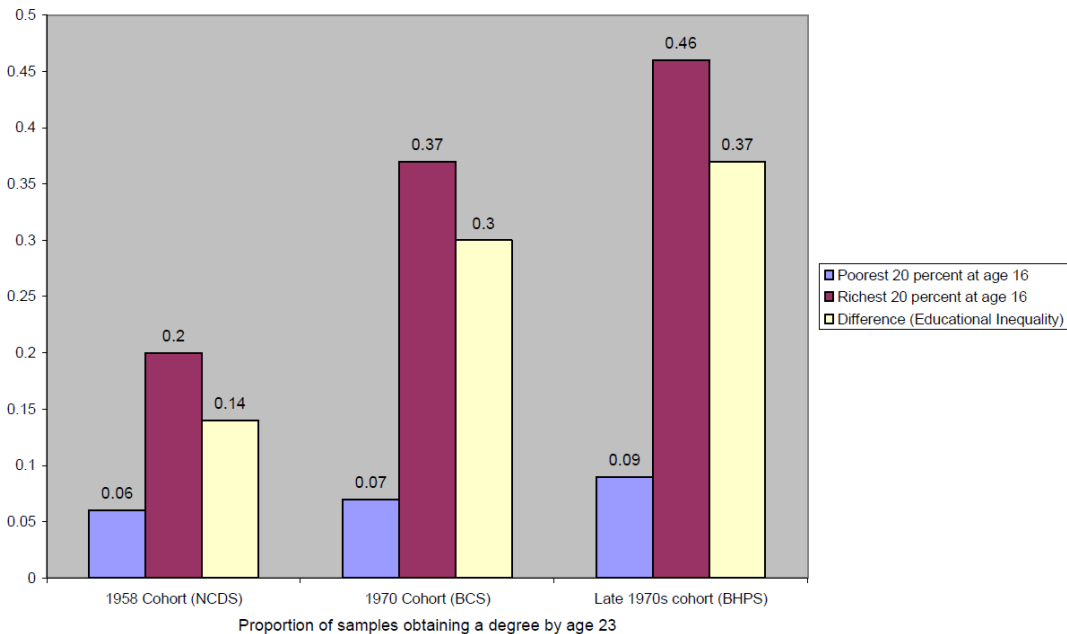
Figure 1: Staying on Rates (Proportions) by Parental Income Group



Graph 5: The graph compares the percentages of those who undertake a tertiary education according to an income criterion (violet and red lines) and the difference between them (yellow line). (Source: https://www.academia.edu/7355397/Case_Study_Intergenerational_Mobility)

In addition, the difference between the richest share of the population and the poorest one is even larger when degree's completion is considered (as the graph 6 shows).

Figure 2: Degree Completion by Age 23 by Parental Income Group



Graph 6: The graph compares the percentages of those who concluded a tertiary education according to an income criterion (violet and red lines) and the difference between them (yellow line). (Source: https://www.academia.edu/7355397/Case_Study_Intergenerational_Mobility)

Countries can intervene to solve this issue also through tax expenditure on education. According to the European union, this kind of expenditure is not only considered a good investment at the macroeconomic level because it increases the economic growth but also because an investment in education leads to lower rates of unemployment, higher wages and non-economic benefits to the society. However, this tax expenditure must be sized properly since also an excessive investment in education can have a negative consequence in terms of public revenues. The optimal country investment is justified only when it is necessary to offset possible underinvestment in education and, consequently, improving social equity.

Moreover, also education is closely related to segregation phenomenon. Durlauf under this aspect explained that it exists an incentive for wealthiest families to isolate themselves in order to provide their children a better-quality education with a lower cost leading, as consequence, poor families to receive low education quality and to undertake lower level of human capital investments.

The council of Europe agrees with this view and declared that increasing social mix within schools may increase the performance of disadvantage students and the overall performances. Consequently, the European institution suggested that policies aimed at encouraging the reduction of segregation can play an essential rule in the reduction of inequalities.

One last aspect regards fiscal policies in the reduction of poverty. In one of its documents the European Commission defined the tax expenditure as a means to influence the allocation of resources in some direction in order to achieve specific social aims like the fight against poverty or the reduction of income inequalities. Each policy must follow criteria not only to promote economic efficiency (which corresponds to the use of resource in order to maximising the production of good and services) but also to meet social and strategic objectives defined by governments.

The governmental interventions to reduce income poverty seems to be efficacious. Indeed, on average, in EU the at-risk-of-poverty rate¹⁹ without any social transfer and taxes would be the 26% while the impact (expressed as at-risk-of-poverty rate after social

¹⁹ At-risk-of-poverty rate before social transfers: “the share of persons with an equivalized disposable income, before social transfers, below the risk-of-poverty threshold, which is set at 60 percent of the national median equivalized disposable income (after social transfers)”. (Source: https://mpra.ub.uni-muenchen.de/20167/1/MPRA_paper_20167.pdf)

transfers²⁰) considering those interventions is the 16%. The impact is different when different countries are considered, indeed, antipoverty policies seem to have a greater impact in northern Europe, Belgium and Germany while in countries of southern Europe like Spain, Italy and Greece it seems to be reduced. Moreover, the effects of these policies are different when EU15 countries and non-EU-countries are considered. Indeed, in the first case the average poorness reduction is of 20.3% while in the latter it is only of 13%.

Finally, analysing the impact of public policies on vulnerable groups we can notice that these have different outcomes when children and elderly population are considered. For children it has been found a significant negative relationship between social expenditure and poverty rates. Moreover, this kind of policy seems to produce more consistent results in young individuals rather than elderly ones. Indeed, it has been measured that this kind of measures produces a R squared²¹ equal to 0.285 in children (but some differences have been detected between EU15 countries and non-EU15 countries). However, differently to what we saw before, policies related to children in the eastern Europe countries (where the R square there is equal to 0,469) are more successful than in western Europe (the R squared is 0.163). On the other hand, social expenditure on old age programmes seems to have an ambiguous behave. The relationship in this case between social expenditure and poorness rates is weaker (the R squared is 0.103) and no difference between EU15 and non-EU15 has been detected.

2.2 Main drivers through which implement a mobility policy

As we have seen previously implementing a policy to increase intergenerational mobility has a beneficial impact not only for individuals *per se* but also for the public interest of countries because of the positive impact on both social (increasing equality and social cohesion) and economic factors (reducing economic inefficiencies due to the misallocation of talents). Consequently, we can clearly understand that it is in interest of countries building efficient policies to facilitate intergenerational mobility.

²⁰ At-risk-of-poverty rate after social transfers: “the share of persons with an equivalized disposable income below the risk-of-poverty threshold, which is set at 60 percent of the national median equivalized disposable income”. (Source: https://mpr.aub.uni-muenchen.de/20167/1/MPRA_paper_20167.pdf)

²¹ R-squared (R²) is “a statistical measure that that determines the proportion of variance in the dependent variable that can be explained by the independent variable in a regression model”. (Source: <https://corporatefinanceinstitute.com/resources/knowledge/other/r-squared/>)

Policies can intervene following two approaches: the first one consists in the creation of opportunities for moving up in the social ladder. An example of this is the intervention through public scholarships to facilitate the access to higher educational levels. On the other hand, another approach consists in the state involvement to protect families from economic shocks. Indeed, it has been established that temporary and permanent shocks can create damages to the social mobility and, consequently, intervening for instance in unemployment through forms of unemployment incomes can help to reduce those negative effects.

Moreover, policies can be referred directly to individuals or indirectly through other individuals. For example, parental background is essential for children's outcomes so working on parental incomes can create a beneficial impact in both parents and son's mobility. Similarly, working on segregation in disadvantaged areas has a positive indirect effect in children too.

In this paragraph it is analysed how policies can intervene in mobility factors through policies related to family and health, education, labour, taxation and fiscal transfer and informational friction. These policies can intervene improving children outcome and helping the less advantaged families to guarantee or improve their incomes and financial security.

2.2.1 Health and family policies

Although it might seem a topic distant from intergenerational mobility, intervening on health issues represent one way to increase it. Indeed, sickness can represent an obstacle for employability and improvement of careers. This, consequently, could mine intergenerational mobility so public investment in health represents a boost not only to improve life conditions but also to increase social mobility.

A first example of this is the intervention on sickness and disability insurances for all household. This measure is essential to avoid long-term effects of adverse healthiness on income trajectory and, consequently, to affect negatively on children's outcomes. This aspect is important especially for emerging economies where an out-of-pocket expenditure can lead families into problems. Therefore, some governments of emerging countries like China have increased health insurance coverage from 15% to 90% reducing the impact of health problems on family budgets.

Secondly, we must consider that the poorest segment in the population has the highest likelihood to have bad health outcomes and, at the same time, they are the less covered by health insurances. This mismatch can create situations of vulnerability for these people especially if we think that poorest groups are less proactive to seek health services. Looking at the causes of this behavior, the absence of a universal health coverage, the absence of a public screening programmes and possible out-of-pocket health expenditures are all factors that can cause it. This requires governments to redesign health insurances in order to protect these disadvantaged categories from problems related to diseases and from possible downdraws in the intra-generational mobility. Consequently, to solve this issue the some governments like the French one have decided, through an act called *Couverture Maladie Universelle*, to guarantee to all legal residents in France (the 99.9% of the population) a social health insurance.

Another aspect to consider is related to harmful behaviours that may increase health inequalities and consequently block social mobility. These behaviours like the lack of physical activity, smoking, the abuse of alcohol and poor diet may hamper social mobility and are majorly related to the poor social groups. Because of this, governments have tried to intervene promoting the culture of healthy eating and active living. These measures have been applied starting from the beginning of life cycle through school initiatives like improving the food quality in canteens (and so making meals rich of fruit and vegetables and avoiding junk food) or increasing physical activities at school. Governments did not stop here but they intervened also in the public communications through messages of health promotion to a variety of population groups.

Another category of policies strictly related to health policies are family policies. These policies work in common not only to improve people's welfare but also intergenerational mobility. Indeed, family policies like work and family balance, early education and care policies can help children through a compensation of the disadvantages at home and avoiding the transmission of them to children.

Both the health and family policies seem to increase children's mobility only when the expenditure in those policies is sufficiently high. According to Crettaz and Jacot, the expenditure on family policies reduces the gap between individuals whose parents are well educated and those who have a worse parental background in terms of likelihood of university's attendance. In particular, they found that a 1% of GDP expenditure in family

benefits would lead to a ratio between advantaged children and disadvantaged children in university attendance equal to 96 times. On the other hand, if the percentage of GDP expenditure increased to the 2% the same ratio would be of 35 times. Clearly, differences in terms of familiar background would still exist but doubling the GDP expenditure would reduce of 3 times the differences when university attendance is considered.

There are several ways through which family policies can be implemented. A first example of family policy is the one related to work and family balance. The main goal of this kind of policies is to reduce possible income shocks which may hamper intergenerational mobility through an incentive for parents (especially women) who decide to continue working after the child's birth. This kind of policy is born because the miss of labour-market opportunities during the maternal leave can create phenomena of unpaid work for those who decide to return in the workplace after it. To reduce this, public policies can support the participation of mothers in the labour market and delete the disproportions in the work pay respect to men.

We retain that the participation in the labour market is a necessary but not sufficient condition to favour social mobility. Let's consider, for instance, a mother who re-enter in the job market after the maternal leave. If she obtained a job in which her salary is lower than the one before the maternity leave that would mean not only a worsening in her intragenerational mobility but also less possibilities for her children. Following we retain that it is necessary to ensure that working mothers could improve in their careers in decision-making positions. Several European countries like Italy, Norway, Germany, France, UK and Austria have decided to introduce mandatory gender quotas in the companies' board. This led companies to increase the gender diversity in their boards with successful results. UK for instance increase the percentage of women on boards from 13% in 2010 to the 27% in 2016.

However, guarantee a certain income level is only an initial step in order to improve intergenerational mobility. Indeed, the impossibility to combine work and childcare could be harmful to the improvements of children. The balance between work and family is essential. To prove this, Ruhm and Waldfogel observed maternity leave during the early weeks following birth and certificated that this has a good impact in child development. With the same view, Carneiro et Al. observed that in Norway increasing the maternity leave period from 0 to 4 month led to a positive educational outcome and to a reduced

percentage of high school dropouts. With the goal to improve the equilibrium between work and families, Nordic countries offer solutions like parental leave, out-of-school-hours care and flexible working arrangements during the early years of the child's life. Consequently, this solution brought to a high female employment and at the same time high fertility rates.

A second family policy is related to the implementation of early education and childcare. Indeed, many studies have indicated a positive impact of childcare programmes on children's performances and outcomes. The importance of this kind of intervention in intergenerational mobility is related to two aspects. Firstly, investments in human capital are an essential ingredient to favour mobility but this may be reduced because of liquidity constraints (if there is no state intervention) that poorest families might have. Secondly, an intervention in a pre-educational period is essential in order to facilitate learning at later stages.

Countries have understood the importance of childcare, especially for low-income families. Norway, for example, increased the number of free childcare hours for children from 3 to 5 years old coming from disadvantaged families. According to Havnes et Al., this choice led to a gain in the expected earnings of children from low-income families and a decreased expected income for those who come from the richest families, however, the overall impact has been positive.

In France, Dumas and Lefranc analysed the impact of the expansion of preschool programmes between 1960 and 1970. In this period the share of the 4 years enrolled in a preschool passed from 60% to almost 100%. They discovered beneficial effects not only in terms of wages but also in high school graduation and grade repetition. Moreover, France implemented the possibility to enrol in a preschool at the age of 2 years old, this choice has led to a slight improvement in terms of both numerical and literacy comprehension in all French children but, more importantly, producing the largest positive effects in children of immigrants.

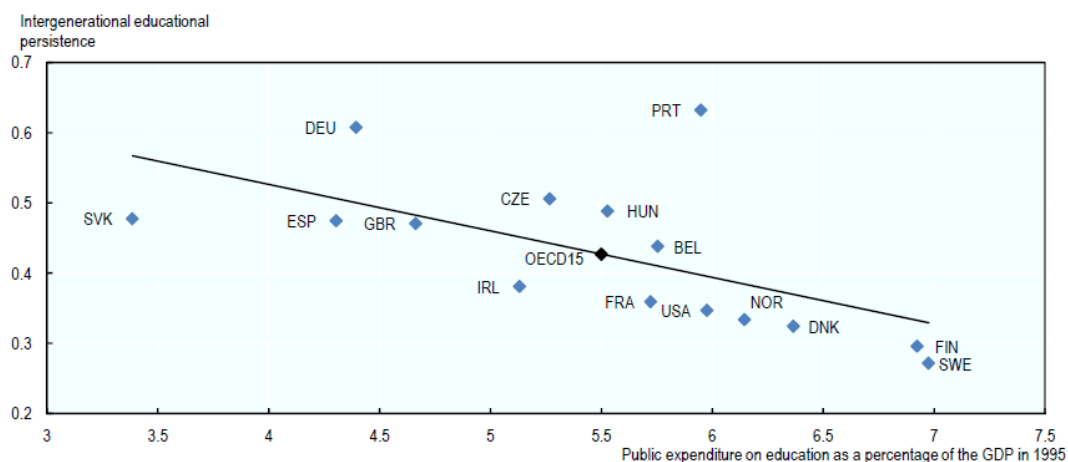
Finally, a last aspect to consider is the link between social expenditure and intergenerational mobility. Although this kind of relationship needs to be more deeply analysed, apparently it exists a relationship between additional expenditure on the child and the wellbeing of children, especially for those who live in low-income conditions. Indeed, short-term income shocks can have a negative impact in children's outcome,

especially during early stages of life. Consequently, policies intervening on income transfer may increase children’s school and cognitive outcomes. An example of this could be the Minnesota Family Investment Programme, where it has been allowed to families whose assets are upon 10000\$ to meet a financial stability through cash and food assistance for a limit period of 60 months. This support led to positive effects in the reduction of poverty (the 75% of the sample after 1 year of support had an income below the poverty line in place of the previous 85%) and an improvement in the educational outcomes of some subgroups of children (but this last aspect seems to be too week to express a consistent effect for the full sample).

2.2.2 Education policies

As observed in the previous chapters, education represents one of the biggest factors which can contribute to facilitate intergenerational mobility. As we have seen, this is due to two main reasons. Firstly, education guarantees the achievement of skills that allow the individual better occupation and incomes and, secondly, because this sector plays a compensation rule when other factors risk to maintain the individual coming from a disadvantaged background in a low position in the social hierarchy.

Education is a factor which perfectly performs with government policies. For this reason, countries are putting a great effort in policies to facilitate learning and consequently reduce gaps among children. This kind of public expenditure seems to be a winning choice since it has been observed a negative relationship between educational persistence and public expenditure.



Graph 7: the graph shows the relation between public expenditure on education and intergenerational educational persistence across countries (blue dots) and the regression line of it

(the black line). (Source: <https://www.oecd.org/social/broken-elevator-how-to-promote-social-mobility-9789264301085-en.htm>)

However, overall, there is still much to be done. Indeed, according to OECD, the 42% of people whose parents have a low level of education still remain low educated while this happens only in the 7% of cases where parents have high level of education.

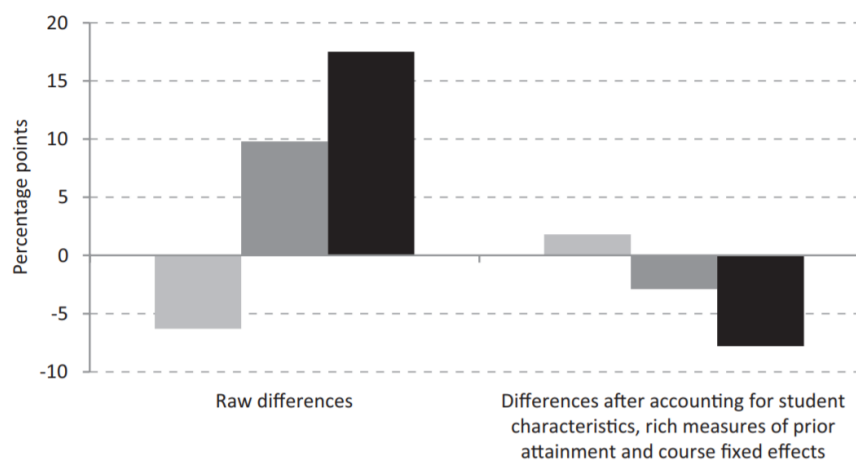
A first kind of policies related to education is related to the prevention of early school leaving (or more technically called Early drop-out). This aspect is important since maintain students at schools means reduce mobility barriers and inequalities. A first way to combat this phenomenon is by increasing the number of years of school attendance. For instance, The Netherlands government has introduced the obligation of school attendance until 18 years old. This temporal obligation is reduced to 16 only if you are owning a professional qualification. Moreover, through specific regional entities called RMC, it has encouraged people between 18 and 23 years old to obtain a certification and, consequently, improve their job possibilities. This policy, whose cost is 140 million euros annually, has paid off and reduced the number of school leavers in Netherland from 71000 in 2002 to 22948 in 2015. Another approach to solve this situation is the one related to the Danish school system. Denmark recognized the impact of school repetition in the risk of dropping out and implemented a youth guidance service in order to intervene in advantage in critical situations and avoid possible school repetitions. This system works firstly identifying students with low performance at the beginning of the school year and then providing an educational plan to them during the year which is not only addressed to students but also to their parents.

Parents indeed represent an essential aspect to consider when educational outcomes are considered. Families have an impact which is not only economically but also behaviourally important. As stated in the first chapter, a family which is supportive, and present has a beneficial impact on child's educational outcomes. Consequently, the lack of positive models at home represents a threat for intergenerational mobility which countries have tried to overcome through mentoring programmes. A mentoring programme involves a series of afterschool activities realized with a mentoring component. This kind of programme has resulted to be positive for the well-being, health and behaviours of students. An example of this policy is the EPIS programme of Portugal. In this, adolescents with high risk of early school leaving are followed by professional mentors through a model of training/empowerment. This policy, started in 2006, has led

to positive implications for students. Indeed between 2013 and 2017 the school success rates increased between 7.4% and 14.5%. Moreover, it has estimated by professor Martins that the presence in this programme increases of 10% the likelihood of non-retention respect to those who are not monitored by the programme.

Another approach is to involve parents in the school-students link. This allows to increase the students' outcomes through the involvement of parents on the school development plans. An example of this policy happens in France where parent discussion groups have been implemented increasing the adults' awareness of school structure and improving the students' behaviour.

However, the most important explanatory variable for intergenerational mobility related to education still remains the education quality. Indeed, one of the main reasons why poorer children produce lower educational outcomes respect to the richer ones is because of education's quality. Crawford et Al, comparing low-performance schools and high-performing schools in UK, have discovered that it exists a higher likelihood of drop out from students coming from lower quality schools. On contrary, they stated that those coming from lower quality schools perform better at university when similar backgrounds are considered as it can be seen from the graph 8.



Graph 8: (On the left) a comparison between the performances of students coming from low-performance schools (in light grey), high performance schools (in dark grey) and the difference between them (in black). (On the right) the same comparison but accounting student characteristics. (Source: <https://www.econstor.eu/handle/10419/119553>).

These results must be read carefully. They confirm that quality of education has a great impact on students' performances. The opposite trend obtained, when similar background contexts and grades are considered, reveals only that pupils coming from poorer schools

perform better than the ones coming from better schools non because of the educational system but because of their higher individual effort in learning.

Consequently, it is essential to implement policies in order to intervene in those countries where more socio-economically disadvantaged students have less resources than advantaged students. To solve this issue is essential to intervene in the capital allocation between schools and that can happen in different ways. Countries like Germany, Finland and Estonia have intervened increasing educational materials and implementing physical infrastructures to guarantee that disadvantaged schools have an increased amount of resources respect to that of more advantaged schools.

A second way to promote the redistribution of educational resources is through the financing of school activities. More deeply, governments can fund schools which operate in situations of socio-economic disadvantages increasing the teaching time or reducing the number of students per classes.

Finally, a third way is through the direct financing of teacher. Indeed, teacher quality is important to support the long-term success of children in disadvantaged areas leading them to reach higher ranked universities and better paid jobs. Consequently, incentivizing them to operate in disadvantaged areas (as it happens in France or in US) by increasing their salaries seems a winning strategy to favour intergenerational mobility. Nevertheless, the increase in teachers' wages is not the only way and should be combined with other policies to produce better result. For instance, possibilities to adapt the teaching pace to the learning one, as it happens in Finland, may be a solution in order to work properly in disadvantaged areas.

2.2.3 Labour market policies

Although education is one of the main factors through which generate intergenerational mobility it is not the place where this happens. More deeply, we can consider education as a key to give better occupation but it is only in the job market that intergenerational mobility concrete. Indeed, since intergenerational mobility can be measured as a difference in terms of occupations between generations, we can clearly understand the great impact of this in social mobility.

The link between education and labour market is related to the rate of return of human capital investment. Indeed, if human capital return is higher, it will imply that earnings in

the job market will be high too. High-income parents are generally more prone to invest in children education and, consequently, if human capital returns are high and if no state intervention is assumed, the wealthiness will be maintained across generations.

In this context we should now understand how countries can intervene in the labour market. Indeed, as economic theories have shown, labour market can be deeply influenced by national policies. From our point of view there are two main weaknesses in which policies should operate. Firstly, they should drive the process from the education to occupation in order to guarantee that students should achieve the skills required by the job market and, secondly, they should control that in the recruitment process no discrimination happen. This last aspect is essential in order to favour that individuals coming from the lower side of the social hierarchy could improve their condition.

In this context, labour market policies can intervene in order to promote intergenerational mobility. We must consider that, as we saw in the first chapter, low-skilled parents have higher risk to remain in lower social classes also in future generations. Targeted training can enrich their skills and, consequently, improve their careers and the possibilities for their sons. On the other hand, labour policies can support workers in situation where also high-skilled people may have some difficulties to enter in certain occupations due to their disadvantaged background. This safeguard can happen through an adequate employment protection legislation and active labour policies.

A first kind of policy is related to disadvantaged youth entering in the job market. As we saw, growing in disadvantaged areas increases the probabilities of early drop out in the educational system leading consequently to a lack of sufficient skills to enter in the labour market. As result of this situation there is a higher likelihood to become a NEET. The Eurofund defines NEET as young individuals between 15 and 29 who are not currently in employment, education or training. NEET is not an isolated phenomenon but it is broadly widespread, indeed, the institution has calculated that 14.2% of the European population between 15 and 29 years old is in this situation. As we can see from figure 3, in addition to the lack of education, other factors such as the parents' unemployment, household income, location and immigration represent risk factors for youth unemployment.



Figure 3: a list of risk factors which may cause the NEET phenomenon (Source: <https://www.eurofound.europa.eu/it/emcc/labourmarket/youthinfographic>)

To overcome this situation, we must consider that early school leavers, due to educational, personal or social factors, present some difficulties to reach educational outcomes. Consequently, they try to enter in the job market but they present some difficulties since they are poor of skills obtainable through education. Coming back to the education system would be a possible solution but, in reality, it has been shown only to increase the likelihood to reiterate dropouts if no additional action is taken.

Consequently, a first solution in order to enter properly in the job market is to reach those skills required through second-chances programmes. Those programmes have a duration from a few months to a year and their main goal is to obtain non only vocational skills but also numerical and literacy skills, career guidance and health support. An example of this is the French *École de la Deuxième Chance* where young people after 18 are provided formal education, counselling and coaching in social and life skills. A second type of policy to facilitate the shift from school to work is the apprenticeship training. This is a combination between learning and practice in a company and it concludes with a fully recognised diploma or a certification. The success of this policy is due to the fact that it guarantees the possibility to individual with disadvantaged background to improve their skills and, at the same time, to tackle entry barriers of the labour market. Consequently, apprenticeships can be a good strategy to improve the intergenerational mobility.

Moreover, countries can favourite apprenticeships through fiscal incentives for companies which hire workers in apprenticeship contracts. An example of this is the UK where it is offered 3000 pounds to employers who hire new apprentices.

The European union has recognised the problem of NEET and the possible consequences related to it. Indeed, we must think that the NEET phenomenon imply a loss for the European economy that the Eurofund has estimated to be 142 billion per year. Consequently, the European Commission has decided to intervene implementing policies. An example of this is the youth guarantee. This policy introduced in 2013 has the goal to offer to every young person below the age of 25 support through employment, continued education or apprenticeship within a period of 4 months after becoming unemployed or leaving education. This policy has produced some beneficial effects, indeed, the number of NEET decreased between 2013 and 2016 from 14 million to 12.6.

A second kind of policies is related to the barriers that those who come from disadvantaged areas must tackle. Here the issue is not related to the lack of skills that make a future worker difficult to access to the job market, but we are dealing with individuals who obtain an education and skills. They are disadvantaged respect to their peers because of external factors. Indeed, people from disadvantaged background must face two factors which may obstacle them: possible discriminations from employers (which may happen consciously or unconsciously) and the absence of informal behavioural codes that are necessary during the recruitment process.

Firstly, in order to facilitate the school to work process it is essential to give adequate information to more disadvantaged students about the steps required to build a career. Consequently, mentoring and career advice seem helpful tools to prepare disadvantaged students to the job market. UK government, for instance, has established the career and enterprises company in which employers support young people in the decision-making and in the career development. The goal is to give students the best support, advice and inspiration about the world of work.

A second example of barrier to social mobility is related to unpaid internships. This is an important issue since young people from low-income families cannot afford to work for free and may decide to start working in jobs which may not improve their skills and, consequently, support them in the social ladder improvement. Research from Sutton Trust confirmed this trend, and analysing the UK case, affirmed that about the 40% of UK

students refuse to work in an unpaid internship and the 39% who start an unpaid internship leave due to financial reasons. Moreover, internships in UK are mostly settled in London (the 58% of all internships) where the minimum monthly cost are assumed to be 1019 pounds per month. Consequently, it is estimated that the 78% of 18-34 years old could not afford an unpaid internship, especially those coming from low and middle income. Given the possibilities of the UK law to unpaid internships, to fill the gap left from the government, organizations like Sutton Trust and the Social mobility foundation created programmes in order to encourage young people from disadvantaged families to take up internships in top companies. On the other hand, countries like France have been recognised the importance of paid internship to promote social mobility. Consequently, internships lasting more than 2 months have to be paid at least 523.26 euros monthly and it has been set a maximum duration of them of 6 months.

Moreover, people coming from disadvantaged backgrounds may find some difficulties during the recruiting process due to discriminations which employers make consciously or unconsciously during this phase. This is due to the fact that employers tend to hire candidates with whom they identify themselves. A paper written by professor Simeone confirmed this trend. In particular, he analysed the reaction of employers to two resumes showing the same skills but differing only in the name. The test has revealed that a foreign name can have a significant impact in the hiring process in 6 of the 8 countries analysed (Belgium, Denmark, France, Germany, Netherlands, and Sweden).

A solution could be imposing anonymous resumes, but this solution seems to be ineffective since informal signals can always be detected. However, public administration can play a great role in improving intergenerational mobility by guaranteeing to individuals with an immigrant background or young women to access easily to careers in the public administration. An example in this way is Norway where public employers are obliged during the interview process to invite at least one qualified applicant from a disadvantaged background. Moreover, they have the possibility to hire the second-best candidate if this comes from an immigrant background rather than someone coming from an advantaged background. In addition, to promote the diversity in the public administration in France, students from disadvantaged background receive grants for their preparation to the exam to the ENA, the national school for the training of senior officials.

2.2.4 Tax and transfers systems

We have seen that the implementation of intergenerational mobility produces an improvement in terms of economic output which is translated into an increased tax revenues for countries. Given this, we should now deepen whether this relation holds vice versa which means analysing if the possible taxation system may produce beneficial consequences on intergenerational mobility and how the countries can implement this kind of policy.

To deeply understand their goals, we have to understand what a tax is. Britannica defines a tax as follow: “imposition of compulsory levies on individuals or entities by governments. Taxes are levied primarily to raise revenue for government expenditures, although they serve other purposes as well.”²² Given the goal of taxes to fund government, we should understand what the purposes of governments are. According to the economist Musgrave it exists three main purposes: resource allocation, income redistribution and economic stability. The resource allocation (for example the expenditure on education) or the income redistribution between individuals can have a beneficial impact on intergenerational mobility. Fiscal policies like the minimum wage, unemployment insurance and earned income tax credit are examples of policies where the goal is offering economic security to families and, consequently, have a beneficial impact on intergenerational mobility.

A first category of policies is related to wealth and savings taxation. The importance of wealth accumulation in intergenerational mobility is related to the fact that wealth resources can be used when income shocks happen and, consequently, reduce the negative consequences of them. Moreover, wealth is often used to guarantee an education to children or to maintain good health conditions (both aspects that are essential in the promotion of intergenerational mobility). On the other hand, according to the OECD, the lack of wealth is strictly related to low level of incomes and, consequently, the 68% who live at the bottom income quantile have also low levels of assets. So, this means that not only low-income families are not able to overcome adverse life events but also that the high-income individuals are more likely to inherit or receive wealth from family respect to those who are in the bottom of the income distribution.

²² Source of the definition: <https://www.britannica.com/topic/taxation>

To overcome this inheritance taxation plays an important role. It can take form of gift taxes when *intra vivos* transfers are considered, or also estate taxes imposed on the wealth left by the defunct in case of inheritance. Not all the countries adopt this kind of taxation (according to the OECD, only 26 of the 35 countries analysed by OECD have a tax system on wealth shifts) and, where this exists, often small rates are adopted (estimations of 2018 state that it is on average the 0.4%). A possible solution to promote intergenerational mobility could be redesigning the tax system on inheritances making it progressive and with adequate rates.

But this is not the only solution to favour the wealth accumulation in low-income families. Indeed, people who are incentivized to save through free saving accounts seem to accumulate more. For example, in Chile forms of free saving have increased the low-income families' wealth and reduced the request of short-term debt of 20%.

A second kind of policies relates to life-cycle incomes. Indeed, we must consider that incomes are not fixed but they are volatile during an individual's life. Blundell discovered that taxes, in poor categories, can play an insurance role in mitigating the effects of permanent income loss on consumption. In particular, he demonstrated through a regression that taxes can reduce to almost 50% the impact of a negative permanent shock in income and, consequently, confirmed the insurance rule of taxes. However, there are still some issues related to temporary shocks and volatility. In particular, tax systems may produce disparities when temporal shocks happen due to the temporal lag between the tax payment and the incomes received. If we consider some professions like artists or writers, we can understand that it might exist a volatility in their income during the year and, consequently, the amount of taxes required at the end of the year could not be capable to reflect the volatility in these professions. This is a problem especially for lower-income families where the volatility of incomes seems to be higher than the ones of higher-incomes families. Thus, tax policies can intervene considering taxes over a wider time horizon in order to capture income volatility. An example of this policy happens in Australia where income taxes related to authors, artists and athlete are not calculated on a yearly basis but on a multi-year horizon.

There are also other fiscal policies in order to prevent those shocks could cause a downward mobility. All these policies are linked to each other because they all work to ensure that low-income families can recover easily from shocks. As we have seen before,

all kinds of income shocks can impact intergenerational mobility of people especially in those who are still in the educational phase. These policies can take the form of unemployment insurance or, more extremely, as universal income.

Unemployment insurance policies reduce the earnings volatility guaranteeing an income in case of unemployment. Increasing the coverage of this measure can favour worker's protection, especially for non-standardized workers and those who are excluded from the labour market.

The amount and the duration of the measure must be set carefully because they must help people to overcome employment difficulties but, at the same time, incentivize people to enter in the labour market again. This led all European countries who adopted this measure to not set the benefit to the full income amount but there are wide differences across countries. Indeed, while in Luxemburg the replacement rate is the 80% in UK is only of the 17% (the European average value is of the 50%). Moreover, the duration of this support varies across countries passing from 120 weeks in case of Belgium to 24 weeks in Cyprus, Malta, Slovakia and Slovenia.

To improve intergenerational mobility we retain that it is necessary to implement fiscal policies with a special attention for the lower strata of society. Firstly, because low-income families are more likely to receive this kind of support and consequently a chronic low-income has negative effects in the long run for social mobility. Moreover, it is essential that unemployed people can easily access to this kind of programmes to reduce the impact of shocks. Countries like Italy and France have understood the importance of these measures and have favoured the access to them reducing the contribution requirement for unemployment benefits.

A more radical solution could be the introduction of a universal basic income. This solution has been widely discussed, especially because it could avoid issues related to the globalization and to the digital transformation. This kind of solution could improve the protection against shocks that the future automatization process could lead in the low-income workers and creating a positive incentive in the labour supply. Indeed, according to Malcom Thorry of the university of Essex, the implementation of a weekly 60 £ payment would produce a reduction of 16% of people under poverty and, in case of children in poverty conditions, by 13%.

Moreover, universal basic income could improve mental and physical health. For instance, in Finland studies related to the impact of the universal basic income have revealed higher values of life satisfaction, better health and a decrement of depression cases.

However, this measure could lead to negative aspect such as a high fiscal pressure or the negative impact in some categories of the population. For instance, Freaser and Allander, analysing costs of this income support in the Scotland system, revealed that this scheme would cost to the region 7 billion pounds (which would mean nearly the 3% of the Scotland GDP) and would require to pay 8% more in all the taxes to finance it.

Moreover, while some income groups who did not receive any social benefit will improve their conditions, those who have received social benefit already would worsen their living conditions. A possible answer could be given by intermediate solutions of basic universal incomes like the use of this measures under a certain minimum value while keeping the existing benefits in case of incomes above that level but effects are still unclear.

2.2.5 Informational friction policies

Social aspects represent one of the factors which influence intergenerational mobility. We have seen, for instance, that social connections influence the job market leading to the more connected individuals to outperform the less connected ones in the time required to find a first job. In this case what makes more individuals more competitive in the job market it is not the absence of skills but the reduced number of information respect to the competitors. That is nothing new, the asymmetry or information between individuals is one of the main causes of market failures.

Given this we should ask ourselves what the consequence of an absence (or a reduced number) of information could bring in a decision of human capital investment where it exists a capital constrain. Indeed, as we have seen previously it exists a link between investments (in human capital) and education. These two factors are influenced by capital constraints that in low-income families can cause a reduction in terms of educational investment and, consequently, reduce intergenerational mobility but it is not only about that. Indeed, informational frictions and beliefs can create a bias that makes parents less likely to invest in human capital of sons. All literature agrees with that, Jensen for instance has observed that students in Dominican Republic underestimate the returns to secondary education. Moreover, Abbiati and Barone state that in Italy students tend to overestimate

costs of a tertiary education and the possibilities of dropouts while, at the same time, underestimate possible returns of university studies.

Thus, we should deepen if policies intervening in parent's belief (which means giving them adequate and correct information about the possible returns in education) can play an important role improving investments on education and children outcomes.

Analysing data from studies about rural China, it has been revealed that activities like counselling can have a positive impact in the willingness to go to higher levels of education (but negative results in terms of outcomes and dropouts). In Italy, the analysis about counselling have revealed that no effects in terms of incentives to undertake higher education are produced (although it has brought some student to go for higher rewardable courses in terms of income).

So, this kind of policy does not seem to impact possible educational decisions since few results up to now have been produced. This lead us to produce some considerations: firstly that social aspects could influence intergenerational mobility in a way that is difficult to control by external entities like governments (which imply an inefficacious policy measure under this field) and, secondly, that informational beliefs may impact less respect to other factors like credit constraints of families or the public expenditure of education.

CHAPTER 3: AN EMPIRICAL ANALYSIS ON INTERGENERATIONAL MOBILITY OF IMMIGRANTS IN EUROPE

3.1 Aim, data and sample

As we have seen in the previous chapters, intergenerational mobility can be influenced by several factors and through adequate policies can be incremented. One of the main social categories which are more affected in terms of social mobility by those factors and policies are immigrants. In particular, analysing children whose parents have immigrated in another country it can be detected a positive impact on their social conditions. Abramitzky et al., analysing the impact in US, discovered that son and daughters of immigrants can reach from 5 to 8 percentiles higher in the income distribution than those who are local despite the different countries of origin, initial income level and the immigration policy (in this case the US policies). However, as proved in the first chapter, they are also more sensible to segregation or familiar factors which may hamper their mobility. Following this, we decided to analyse if immigration can lead to a beneficial impact in intergenerational mobility of European union countries.

To measure we decided to use Survey of health, ageing and retirement in Europe (or, more briefly, SHARE) data. This is a multidisciplinary and cross-national database born in 2004 used to deepen the effects of health, social, economic and environmental policies over the 27 countries of EU (and Israel) after the request from the European Commission to establish a European longitudinal survey. Share data are organized according to a wave criterion in which a sample of people older than fifty years old are analysed every two years.

The waves we decided to analyse are the third and the seventh one. The main reason for this decision is related to the fact that these are the ones related to SHARELIFE. SHARELIFE links microdata of individuals to the microdata on the welfare state which allows to assess the impact of policies on the life of individuals. Moreover, SHARELIFE data contain additional information about partners, children, housing and work history which are fundamental aspects to consider when intergenerational mobility is assessed. This explain the reason why these two waves are taken into consideration for the analysis.

To conduct our research, we have picked five EU countries where immigration is consistent respect to the population. In addition, the countries' selection is related also to some other aspects. Firstly, the country dimension has been considered. This because we have retained those countries where the amount of population is sufficiently high can lead to produce more precise result. Secondly, we have decided to select five countries where the phenomenon of immigration is relevant overtime in order to avoid possible bias due to the time pattern.

Given these criteria, the countries we selected are the following: Germany, France, Netherlands, Austria and Belgium. Indeed, according to Eurostat those are some of the EU countries that have the highest values of foreign population as it can be seen from the table 3.

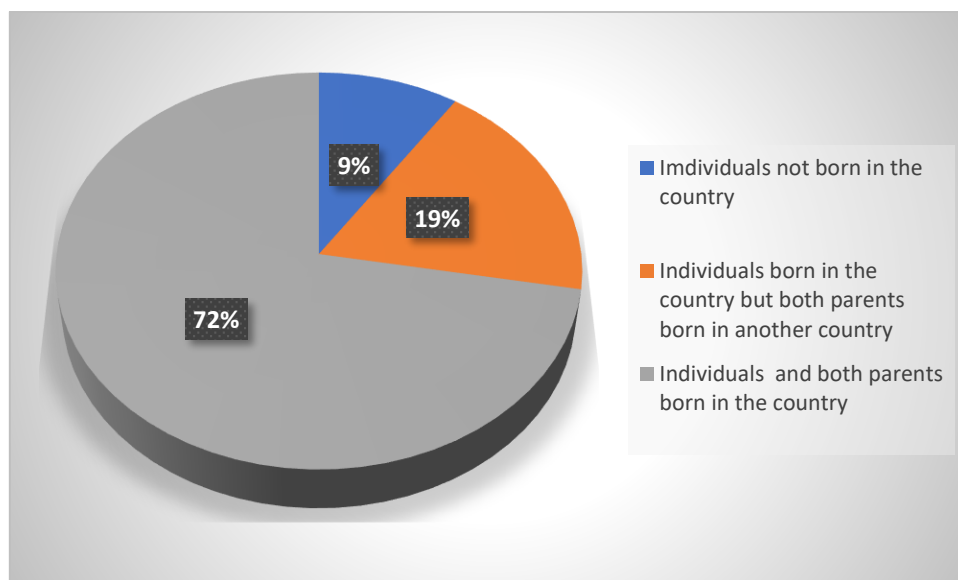
Country	Total Population (millions)	Total Foreign-born (millions)	%
Germany	81.802	9.812	11.995%
France	64.716	7.196	11.119%
United Kingdom	62.008	7.012	11.308%
Spain	46.000	6.422	13.961%
Italy	61.000	4.798	7.866%
Netherlands	16.575	1.832	11.053%
Greece	11.305	0.960	8.492%
Ireland	3.758	0.766	20.383%
Sweden	9.340	1.337	14.315%
Austria	8.367	1.276	15.250%
Belgium	10.666	1.380	12.938%
Portugal	10.637	0.793	7.455%
Denmark	5.534	0.500	9.035%
Slovenia	2.050	0.228	11.122%
EU28	50,110	4.735	9.449%

Table 3: the table shows the total population (in millions), the total foreign-born (in million) and the respective percentage of foreign-born on the total population. In light orange are shown the data of the countries selected for the sample. (Source of the data: https://web.archive.org/web/20120128101046/http://epp.eurostat.ec.europa.eu/cache/ITY_OFF_PUB/KS-SF-11-034/EN/KS-SF-11-034-EN.PDF).

Given that, we can clearly understand why we have decided to opt for Germany, France, Nederland, Austria and Belgium. Indeed, in all of these countries the ratio between Foreign-born and the total population is higher than 11%, the sample size is sufficiently significant (more than 8 million) and all of them show a significant history of immigration over time.

A last aspect to consider is the time pattern analysed. In this analysis we have decided to analyse the period between 1990 and 2008. We have decided to analyse this time frame in order to guarantee a sufficiently consistent flux of immigration and recent data but, at the same time, avoiding possible bias due to the impact of the financial crisis of 2008, the sovereign debt crisis of 2013 or the phenomenon of the Arab spring.

In conclusion what we have used is a sample of 407854 observations of people who were located in Germany, France, Nederland, Belgium and Austria. The sample includes 38350 individuals who are not born in the countries of the interview (9%) and 75120 are born in the countries analysed but both their respective parents not (19%). In the graph 9 we can sum all these information.



Graph 9: Pie chart representing how is divided the sample according to an immigration criterion. In the graph first-generation immigrants are coloured in blue, second-generation immigrants in orange and local individuals in grey. (Source: own elaboration).

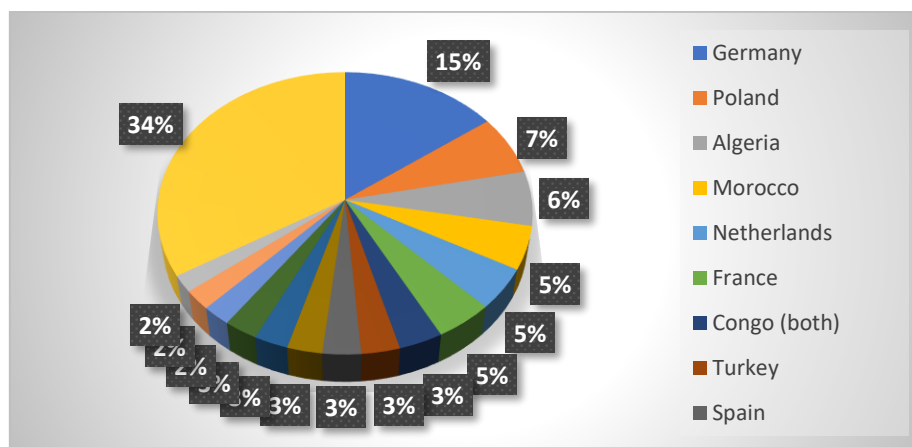
A second aim of this analysis is to evaluate if it exists some differences in the evaluation of intergenerational mobility of immigrants according to a gender criterion. Literature under this aspect has established that it exists a higher intergenerational mobility in women respect to men. Chen et al confirmed that it exists in US a higher intergenerational elasticity in women than men and that, when immigrants of second generation are taken into consideration, this difference is even more amplified. What we want to access is how this relation changes when immigrants are taken into consideration in the European Context.

So, in order to align the sample with this goal we must guarantee two comparable subsamples for men and women. Our sample is divided into 180117 men (44.16%) and 227737 women (55.87%) and so these two subsamples are proportionate and adequate for the goal declared.

3.2 Descriptive data

We now try to identify the main descriptive characteristics of local individuals, first-generation immigrants and second-generation immigrants. As we said, we have built the sample with 5 EU countries (Germany, France, Nederland, Austria and Belgium) which represent the country where the interview has been done. These coincide with the country of residence of the individuals for 99.4%²³. We have decided to divide the sample homogenously between the five countries analysed but still remain some differences between them (Austria is represented at 17.20%, Germany at 22.5%, Netherlands at 10.41%, France at 21.32% and Belgium at 28.51%).

On the other hand, countries of origin are various as we can see from the graph 10. Surprisingly, the most important country of emigration is Germany (15%). However, this might be partially explained due to the fact that until 1990 Germany was divided into two nations and it existed a consistent flux of emigration from the German Democratic Republic to the Federal Republic of Germany. After Germany, the main countries of emigration are Poland (7%), Algeria (6%) and Morocco (5%). In all these cases, emigration has been a constant phenomenon for decades.



Graph 10: pie chart representing the country of origin of immigrant in the sample analysed. (Source: own elaboration).

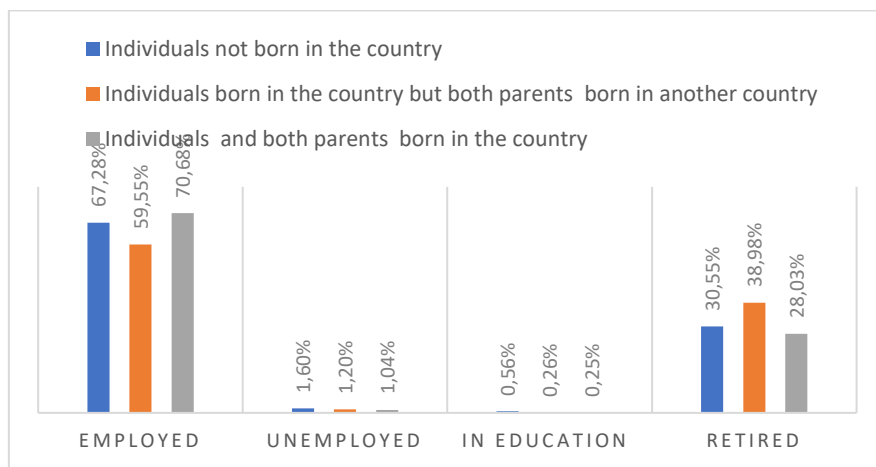
²³ The remaining 0,6% is related to individuals who have been interviewed in one of the countries analysed but their residence is in another one.

On the other hand, in order to detect the impact of immigration on intergenerational mobility we should understand their labour conditions. Observing the labour conditions of individuals can give us a brighter idea about the possibilities of children to improve in the social ladder. Indeed, as we have discussed in the previous chapters, economic condition is considered an essential factor to improve social mobility. For example, we have observed that investments in human capital can be amplified when parental earnings are higher while low-earning conditions can lead to under-education traps in which dynasties cannot improve their position in the social ladder.

Consequently, we have observed the working conditions of the sample analysing the three main subgroups of first-generation immigrants, second-generation immigrants and local individuals. Our results have revealed that 1.60% of first-generation immigrants are unemployed respect to the 1.04% of local individuals and the 1.20% of the second-generation immigrants. This is clearly important since this condition impact directly on both intragenerational and intergenerational mobility. However, we must also say that these data show lower level of unemployment respect to the national values. Indeed, according to Eurostat, the average unemployment rate of the countries analysed was of 6.86%. The difference may be due to the fact that the sample considers only people older than 50 years old and, consequently, the percentage of individuals participating in the job market is lower.

This concept is confirmed when retired people are analysed. Indeed, for all the three categories analysed the percentage of retired individuals is always higher than the 28% (while the average in the countries analysed, according to Eurostat, is 18.96%). In this case the second-generation immigrants who are retired are surprisingly more than the local individuals (38.98% in the first case respect to 28% of the second one). Again, also retirement could represent a threat for intergenerational mobility. Indeed, the retirement is a phase when normally it happens a reduction in the individual's income. This can lead to an increased risk of poverty. Eurostat confirm this and has declared that on average 14% of pensioners deal with this kind of risk. In relation to our sample, this phenomenon is slightly reduced for Belgium, Austria, Nederland and France where the at-risk- poverty rate is lower than the European average but at the same time higher for Germany where the rate is nearly the 20%.

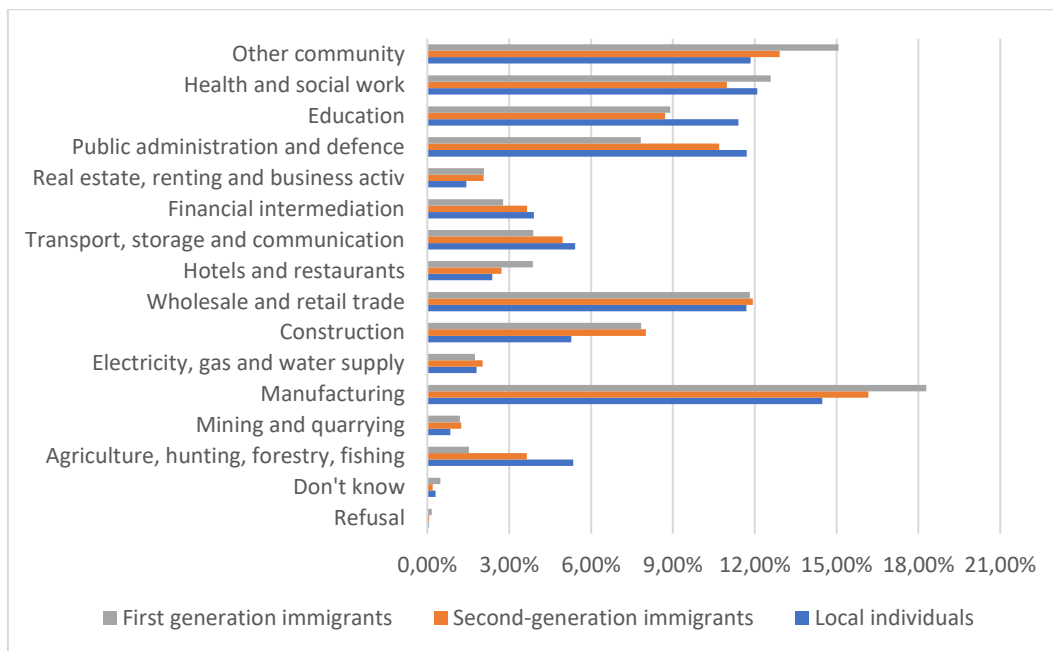
On contrary, when we consider the individuals who are currently employed, we can say that local individuals are the ones who show the highest rate of employment (70.68%) while immigrant of first and second generation show lower rates of employment (respectively the 67.28% and the 59.55%). However, we can say that this is a necessary but not sufficient condition for intergenerational mobility. This is due to the fact that people who are employed might guarantee possibilities to build opportunities for future generations but clearly this also depends also on the economic conditions of the employment and to the other non-economic factors, education and social connections. We can sum up all these data about the labour conditions in the graph 11.



Graph 11: Bar chart representing the labour status of the sample according to an immigration criterion. In blue are shown first-generation immigrants, in orange the second-generation immigrants and in grey the local individuals. (Source: own elaboration).

It exists also a difference in the occupation of individuals, indeed we have observed that immigrants of first and second generation tend to work in different sectors respect to local individuals. Firstly, as we might suspect, there is a great difference in the public sector where local individuals are 5% more involved than the first-generation immigrants. However, this gap is reduced to 1% when the second-generation immigrants is considered which means that the countries analysed have been able to involve this group in the public life of countries positively. Another difference is related to unskilled sectors such as Construction and Manufactory. Indeed, in all these two cases we can notice that first-generation immigrants are more involved respect to local individuals (3% more) in both sectors. However, there are some differences when second generation is considered since in the case of construction sector this difference still remains at 3% while in the case of manufactory it is reduced to 2%. A possible key to explain why in those sectors there is a higher percentage of immigrants could be related to the studies of De Greef and Kalmijn

which proved the existence of a relation of professions with educational and economic factors. More deeply, in their research, De Greef and Kalmijn asserted that sectors such as construction and manufactory professions are some of the mostly negatively related to educational and economic levels. Now, since education in immigrants of first and second generation is lowered respect to local individuals (as we will see more deeply in the following paragraphs) and since immigrants show lower economic conditions, we can clearly understand why they are more allocated in those sectors respect to local individuals.



Graph 12: Bar chart representing the sectors in which employed individuals are working according to an immigration criterion. First-generation immigrants are shown in grey, second-generation immigrants in orange and local individuals in blue. (Source: own elaboration).

Another way to measure intergenerational mobility is through education. Consequently, we can observe intergenerational mobility through the regression between parents and children in the number of years of studies or the level of education reached. However, still from the descriptive data we can reach some relevant information. Indeed, these measures can be used as proxy to describe intragenerational mobility of individuals but also, since literature has asserted that more educated parents tend to incentivize the education of children, we can detect what could be the parents' propensity to educate children (assuming no other external intervention). We must highlight that this kind of information is clearly indicative since education is a complex phenomenon which involves also other factors like the government's expenditure on education or the

cognitive skills of the individuals which can clearly produce differences in education between parents and children.

We have decided to analyse education always considering three different categories which consisted in first-generation immigrants, second-generation immigrants and local individuals. Firstly, we have observed that on average local individuals tend to spend 4.35% more in education respect to first-generation immigrants and 4.85% more respect to second generation of immigrants. These data have a great meaning because they reveal that not only immigrants tend to spend less on education but also that the impact that the welfare system of countries of destination have a small impact in second-generation immigrants. However, by looking standard deviations we can detect something different. Indeed, it is true that the impact of destination's countries on the immigrant's education level is on average small but also that first-generation and second-generation immigrants show the higher levels of standard deviation respect to local individuals which reveals that a beneficial impact might exist in some of them as the data from the table 4 shows.

Measure	First-generation immigrants	second-generation immigrants	local individuals
Average	10.349	10.308	10.800
St. Deviation	5.543	4.615	4.216
Skewness	-0.443	-0.427	-0.398
Kurtosis	2.309	2.812	3.027

Table 4: Table showing the properties of three distributions (respectively first-generation immigrants, second-generation immigrants and local individuals). (Source: own elaboration).

Moreover, when we observe the percentiles of the three distributions, we can notice differences between the lowest percentiles of the three distributions. Indeed, looking at the 25th percentile of the distribution we can notice that in local individuals and in second-generation immigrants it is equal to 8 while in the case of first-generation immigrants it is only 6. This means that in that percentile, local individuals and second-generation immigrants spent two years more on education. On contrary, this difference is reduced when the 75th percentile is considered. Indeed, in this case it is 13 for local individuals and second-generation immigrants while in the first-generation immigrants it is 14.

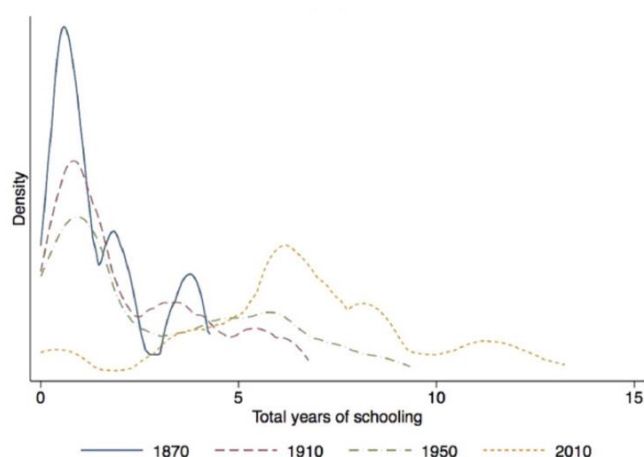
3.3 The model and methodology

The aim of the following paragraphs is to analyse more deeply intergenerational mobility through the time expended on education. As we have seen in the first chapter, we can express intergenerational mobility as a function between in which the dependent variable

(the education of children) depends to some extent on an independent variable which is the education of parents.

Given this, we have tried to analyse which could be factors which determine the number of years of education of individuals. In particular, the model developed tries to discover if the number of years of education can be influenced by the immigration of parent or by the immigration of the individual itself. Moreover, in our model we do not only consider if the individual is a first-generation immigrant or a second-generation immigrant but we also consider the impact of the destination's countries in the number of years of education of the individual.

In the model created we have also considered another important aspect. As Lee and Lee have stated, the investment in human capital has shifted overtime and it has constantly increased overtime. So, in order to detect this aspect, we have determined also 10 years cohorts and we have tried to observe if the period considered has some explanatory power in the model.



Graph 13: The graph shows the density distributions of the number of year of studies in four different years (1870, 1910, 1950 and 2010). (Source: Lee, J. W., & Lee, H. (2016). Human capital in the long run. Journal of Development Economics).

The last two variables we have implemented in our model are gender and age. By doing so we have tried to discover if it may exist a difference between men and women (or in relation to the age) which might explain the number of years of education.

We can sum up these variables in the following model:

$$Y_1 = \alpha + \beta_1 G_1 + \beta_2 C_1 + \beta_3 P_1 + \beta_4 A_1 + \beta_5 I_1 + \beta_6 F_0 + \beta_7 M_0 + \varepsilon$$

Where Y represents the year of education, G is the gender, C Is the country, P is the period considered (more precisely, the cohort considered), A is the age, I is the immigration, F is the immigrant father and M is the immigrant mother. Moreover, we use the index 1 to denote the generation of the interviewed individuals and the index 0 for the generation of parents.

In the model we have some categorical variables. With categorical variable we mean that some variables (E.g., the gender or the country) own qualitative characteristics. The values in these variables have been converted into a number according to its qualitative property. This has been applied to the variables Gender, Country and Cohort and it has been done because in this way these variables can be used properly in statistical modelling.

3.4 The results obtained

The model implemented has produced the results shown in table 5.

Number of observations	103616
F(13, 103602)	1791.900
Prob > F	0.000
R-squared	0.184
Adj. R-squared	0.184
Root MSE	38.569

Table 5: the table shows the results of the regression about the number of observations, F-statistic, P-Value, R-squared (non-adjusted and adjusted) and the root mean square error. (Source: own elaboration).

The regression created is based on 103616 observations. This number of observations is different from the sample size because of some missing values. This is due to the fact that the interviewed refused to give the information required or because he was not able to know it or simply because the information has not been registered. However, we still can say that the number of observations is sufficiently important to produce significant results.

We can confirm the goodness of the model since the F- Value is equal to 1791.90 which is sufficiently important to test the significance of the model. More deeply, we can observe that the respective P-value is equal to 0.000 which compared to $\alpha=0.1$, $\alpha=0.05$ and $\alpha=0.01$ confirms that independent variables can be used to predict the number of years of study.

Then, we have observed R squared which is a measure which could help us to understand whether the proportion of Variance in the dependent variable (in our case the number of years of study) can be predicted by the independent variables (immigration of the individual, immigrant father, immigrant mother, age, country, gender and period). The result obtained (18,36%) is weak. However, we should keep in mind the difficulties to create a model which could represent the number of years of study. Indeed, as we have seen in the first chapter many factors influence it (e.g., The neighbourhood, the family support, the personal skill) and that those are difficult to detect and express through a model. Moreover, in order to support this theory, we have tried to observe similar studies in the literature related to the intergenerational mobility which confirm low R-squared. For instance, a study from Hammarstedt about the intergenerational mobility of immigrants in Sweden revealed similar R-squared between 0.15 and 0.2.

The parameters estimates obtained are shown in table 6.

years of education	Coefficient	Std. err.	t	P>t	[95% conf. interval]	
gender						
Female	-1.340	0.024	-55.090	0.000	-1.387 -1.292	
country						
Germany	3.239	0.049	66.040	0.000	3.143 3.335	
Netherlands	1.147	0.045	25.410	0.000	1.058 1.235	
France	-1.413	0.044	-31.840	0.000	-1.500 -1.326	
Belgium	-0.269	0.042	-6.470	0.000	-0.351 -0.188	
immigrant						
age	0.059	0.015	3.980	0.000	0.030 0.088	
cohort						
1930-1939	-0.017	0.002	-8.430	0.000	-0.020 -0.013	
1940-1949	0.515	0.046	11.250	0.000	0.425 0.605	
1950-1959	1.586	0.055	28.910	0.000	1.478 1.693	
1960-1969	1.854	0.068	27.140	0.000	1.720 1.988	
1960-1969	2.962	0.185	15.980	0.000	2.599 3.326	
immigrant mother	-0.358	0.055	-6.480	0.000	-0.466 -0.250	
immigrant father	-0.339	0.056	-6.080	0.000	-0.448 -0.229	
_cons	11.242	0.152	73.840	0.000	10.944 11.541	

Table 6: The table shows the parameter's estimates, standard errors, t-statistic, P-values, confidence interval of the regression related to the number of years of study.

Moving to the parameter estimates analysed we should start by observing the parameters related to immigrant fathers and immigrated mother. These two parameters are equal to

respectively -0.3581 and -0.3386 so we can clearly say that they affect the individual's education negatively. We should now say whether these two parameters can be considered significant. Since in both cases we have P-values greater than $\alpha=0.1$, $\alpha=0.05$ and $\alpha=0.01$ we can reject the hypothesis of non-significance of these two parameters. Trying to explain this we should keep in mind two important factors which determines a negative impact of immigrant parents on the education of children. Firstly, segregation represent an important factor which can negatively influence the educational performance of children and, secondly, the role of parents in the education of children. Since parents may show more difficulties in learning the new language or lower level of education than children, they could have more difficulties in supporting the child during the educational process.

On the other hand, different results happen when the immigrant directly moves to another country. Indeed, this variable, opposite to the other two previously analysed, affects positively the number of years of education in a small magnitude (the parameter here is equal to 0.0593). Also in this case, we have significant variable since its P-value is equal to 0.000 and, consequently, let us reject the hypothesis of non-significance of the variable for $\alpha=0.1$, $\alpha=0.05$ and $\alpha=0.01$. Some considerations are needed for this data. Firstly, we should keep in mind that an immigrant needs to adapt in the new country. This means that he or she could need more time on education in order to learn the language and adapt himself or herself in the news context. We should highlight the fact that the number of years on education can be considered a good value to express intergenerational mobility when compared to the one of parents. However, we must also highlight that it might exist some bias due to the fact that an individual spends more time on education not only to acquire additional educational levels but also because of the difficulties faced during the education period that cause additional time to acquire the prefixed outcome. A second aspect to consider is whether immigrants may have come in the new country during the educational period or not. In this last case the parameter estimated is influenced by different educational systems of the country of origin which might require more time on education respect to the nation of arrival.

The last parameter to analyse is age, in this case the parameter is equal to -0.0166 so we can say that age impact negatively the individual's years of education but, respect to other factors, less significantly. Again, the parameter can be considered statistically significant since observing its p-value (equal to 0.000) we can reject the hypothesis of non-

significance of the parameter (for $\alpha=0.1$, $\alpha=0.05$ and $\alpha=0.01$). In this case we should consider that, as showed in the paragraph 3.3, the number of years in education has constantly increased over time. This means that older individuals, as showed by the age parameter, show lower levels of education. To prove this hypothesis, we should check the variable period. We can notice that this parameter is always significant and always more important through time passing from 0.51 in the first cohort (individuals born between 1930 and 1940) to 2.96 in the last cohort (individuals born between 1960 and 1970). This variable proves that in each 10-year cohort it exists a constant growth in the time expended on education.

We should now observe how countries could favour the acquisition of education. As we can see from the table 6 it exists some differences across countries. Firstly, we should consider that the variable country is set as categorical. This must be considered for our considerations. Indeed, the results explain how countries change the educational level of individuals respect to a certain country considered as benchmark. More deeply, in our sample we have observations of Germany, Netherlands, France and Belgium respect to Austria which is used as benchmark. Firstly, in this case we can observe that the differences of countries respect to Austria are statistically significant. Moreover, we can notice some differences: Germany is the country where the time spent in education is more respect to Austria (3.239) followed by Netherlands (1.147). On contrary, we can observe that in Belgium (-0.269) and mostly France (-1.413) show lower levels of education respect to Austria.

Finally, a last consideration must be done in relation to the gender. Again, as the country variable, it has been considered as a categorical variable since gender perfectly suits this definition. Consequently, the parameter obtained (which is statistically significant) describes how the year of education changes when women are considered in place of men. The result (-1.34) shows that the time spent on education is negatively affected when women are considered. This result goes against the literature which affirms that on average women spend more time respect to men on education so some considerations must be done. Indeed, we must keep in mind that we are considering a sample where the individuals analysed have more than fifty years old and so, since men show lower life expectancy respect to women, they are less in the sample. This aspect is important because since it has been shown that life expectancy is lower in undereducated individuals respect to the more educated ones. Consequently, we might suspect that, because of these

reasons, the male individuals who are still in life might show a higher level of education respect to women. However, in the next paragraph we will go more deeply in the issue and we will analyse how the factors of the regression change when only men or only women are considered.

3.5 Results through gender criteria

Given these first results we have a brighter about which factors influence more the investment in education of an individual. Indeed, as we have seen, immigration of fathers and mothers represent significant negative factors to explain the number of years of education of a child. Now we want to go more deeply in the issue and try to observe how the variables on our mode change when only women or only men are considered.

To reach this goal we have taken the model described previously in the paragraph 3.3 and we have applied it respectively to men and women of the sample. Differently to the model presented in the paragraph 3.3 we have not considered the gender variable. This because considering a gender variable in a sample constituted of only women or men would be meaningless. However, we must keep in mind that the following two regressions have produced results that cannot be compared. More deeply, we can say which variables influence more the educational level of women and men but, due to the fact that we are using two different samples we cannot compare the results obtained.

The two regressions have produced the results in the table 7:

	women	men
Number of obs.	59426	44190
F(13, 103602)	118.580	552.280
Prob > F	0.000	0.000
R-squared	0.193	0.130
Adj. R-squared	0.193	0.130
Root MSE	3.785	3.925

Table 7: the table shows the results of the regressions in men and women about the number of observations, F-statistic, P-Value, R-squared (non-adjusted and adjusted) and the root mean square error. (Source: own elaboration).

From the data described in the table we can notice that the model is statistically significant in both regressions. Indeed, since the P-values is equal to 0.000 we can reject the hypothesis of non-significance of the model in all cases for $\alpha=0.1$, $\alpha=0.05$ and $\alpha=0.01$. However, the regression in case of women shows an R-squared higher than the one related

to men (0.1927 in women respect 0.1304 of men) which means that the model better fits the data in case of women respect to men.

Now we can observe what changes in the parameters' estimates of the model when only women and only men are taken into consideration. We will focus more on the parameters related to the immigrated parents and to the individual immigrated since the aim of this paragraph is to analyse if those parameters change when we refer only to men and women.

Firstly, as table 8 shows, we can notice that in women the impact of mother and fathers is still negative however with some differences. Indeed, we can notice that the magnitude of the influence of the mother is significantly more negative respect to the one of father. Moreover, the P-value in case of the mother is equal to 0.000 which allows us to reject the hypothesis of non-significance. On the other hand, in case of the father this does not happen because the P-value close to 0.01 could make us retain that it might be non-significant when the α is smaller than 0.01. We can confirm however the negative effects of immigrant parents on the time spent in education. So, we could say that segregation and familiar factors might be a problem also when only women are considered.

years of education in women	Coefficient	Std. err.	t	P>t	[95% conf. interval]	
country						
Germany	3.432	0.063	54.090	0.000	3.308	3.557
Netherlands	1.356	0.058	23.470	0.000	1.243	1.469
France	-1.460	0.056	-25.940	0.000	-1.570	-1.350
Belgium	0.122	0.053	2.300	0.021	0.018	0.227
immigrant						
age	0.052	0.019	2.680	0.007	0.014	0.090
cohort						
1930-1939	0.655	0.058	11.230	0.000	0.540	0.769
1940-1949	1.898	0.070	27.070	0.000	1.760	2.035
1950-1959	2.473	0.088	28.170	0.000	2.301	2.645
1960-1969	3.452	0.202	17.090	0.000	3.057	3.848
immigrant mother	-0.182	0.070	-2.610	0.009	-0.319	-0.045
immigrant father	-0.549	0.070	-7.880	0.000	-0.685	-0.412
_cons	9.303	0.195	47.750	0.000	8.921	9.685

Table 8: The table shows the parameter's estimates, standard errors, t-statistic, P-values, confidence interval related to the years of education in women.

A second aspect is related to the immigration factor, also in this case we can observe that the effect of this factor is still positive but with some differences respect to what we have discussed in the general case. More deeply, we can appreciate that the number of years of education is still positive but the significance here is at risk since that the P-values is 0.007 and so, if we compared it with a small α (E.g., 0.001) it could be meaningless.

We look now to the parameters regarding the regression regarding men. In this case we can firstly observe that in men immigrant fathers and mothers have a different impact on education of sons. Indeed, in this case fathers negatively influence the education of sons with an elevated magnitude. On the other hand, the impact of the immigration of mother does not influence the education of the sons. Indeed, since the P-value is 0.659 we can say that for $\alpha=0.1$, $\alpha=0.05$ and $\alpha=0.01$ this variable is always non-significant. Consequently, we can say that fathers have a negative impact on education while in case of women this aspect is not certain. This data is in line with the literature, indeed the U.S. Department of education asserts that non-resident fathers and mothers have a different impact on children's outcomes. Indeed, while in the case of a non-resident father the impact is significant this does not happen for non-resident mother whose impact on the child educational outcomes tend to be less significant.

Finally, observing at the immigration factor in men we can observe that it positively impacts on the education of children. This value is equal to 0.068 and it is statistically significant however, as in the general case we are not sure if the positive effect may be due to the more time required by the individual to adapt himself in the new country, to the different scholar system he attended or to a concrete positive impact of the country of arrival in his or her education.

years of education in men	Coefficient	Std. err.	t	P>t	[95% conf. interval]	
country						
Germany	2.885	0.077	37.510	0.000	2.735 3.036	
Netherlands	0.819	0.072	11.440	0.000	0.679 0.959	
France	-1.353	0.071	-18.970	0.000	-1.493 -1.213	
Belgium	-0.818	0.066	-12.340	0.000	-0.948 -0.688	
immigrant						
age	0.068	0.023	2.950	0.003	0.023 0.114	
	-0.019	0.003	-6.070	0.000	-0.025 -0.013	
cohort						
1930-1939	0.275	0.073	3.750	0.000	0.131 0.419	
1940-1949	1.130	0.087	12.920	0.000	0.959 1.302	
1950-1959	0.949	0.108	8.780	0.000	0.737 1.161	
1960-1969	1.061	0.534	1.980	0.047	0.013 2.109	
immigrant mother	-0.633	0.090	-7.070	0.000	-0.808 -0.457	
immigrant father	-0.040	0.092	-0.440	0.659	-0.220 0.139	
_cons	12.069	0.238	50.660	0.000	11.602 12.536	

Table 8: The table shows the parameter's estimates, standard errors, t-statistic, P-values, confidence interval related to the years of education in men.

CONCLUSIONS

This thesis has analysed whether in Europe individuals are given the same opportunity to improve their social position beyond their familiar background. From the results produced by our analyses, this is not the case: the role of the family of origin in Europe still matters and influence the future of individuals.

This result is supported by our studies on first-generation and second-generation immigrants in Europe. In the analysis we have noticed that these individuals show respectively 35% and 10% higher unemployment rates respect to local individuals. The lack of employment in these people not only relegates them in the lower strata of the society but also do not allow them to provide to their children the sufficient instruments to build a future. Moreover, when we have observed in which sector the employed individuals, we have noticed that immigrants are mostly related to those sectors in which it is required a low level of education and that guarantee lower economic conditions.

We have shown that these worse conditions in the job market are reflected in the level of education of immigrants. Indeed, immigrants of first generation spend a 4% less time on education than local individual. The intervention of European countries in this aspect is weak since time spent on education is even worse when second-generation immigrants are considered. Trying to explain what determines the educational level of individuals in Europe we have adopted a model which has confirmed that immigrant parents negatively affect the educational outcomes of children. Moreover, we have discovered that this aspect is even worse when a gender criterion is applied. Indeed, our results have proved that while in men only the presence of an immigrant father produces negative consequence on son's educational level, in women also the immigrant mother produces negative consequences on daughter's education. However, we must consider that this is not the only factor which explain the different study levels reached. Indeed, also countries can shape the level of education. In our sample we have seen that European countries Germany and Nederland are more able to promote it while in case of Belgium and France this happen less.

We investigated which factors can provide an individual the possibility to improve his or her social conditions respect to the one of his parents. By the analysis of the literature regarding intergenerational mobility we have firstly proved that this phenomenon is

complex. Indeed, it is constituted by the sum of economic, institutional, non-economic and social factors.

We have shown that these factors are the causes that can amplify or reduce the individual's opportunities. If we consider the gap of immigrants, we can understand that this is not the result of a single factor but a combination of them. The reduced level of education observed means a lower level of skills which the individual can use to improve in the social ladder. Moreover, the effects of low level of education are even more amplified when it exists drop out phenomenon happen. We have also seen that the presence of non-economic factors like family and neighbourhood can explain intergenerational mobility. In the case of neighbourhood, we have affirmed that those grown up in a disadvantaged areas and whose parent are in the lower strata of society show a probability equal to 56% to remain in the same social position. This probability is even worse when ethnicities are considered, indeed, this probability can reach respectively the 65% and the 95% when Africans and Asians are taken into consideration.

Moreover, those factors are not to be considered as independent variables of intergenerational mobility, but they tend to influence each other. Two are the key moment where we have seen this happens. The first one is in the educational investment decision where the investment in education is not only related to the optimal level of education that the individual could reach but also to capital constraints and human capital returns which negatively shape the educational level of individuals. As consequence, this proves that economic factors may reduce the positive impact of the educational factor. On the other hand, the second place where this happens is the job market. Indeed, inside of it we should assume that individuals are employed according to the skills they have reached during the education period or in the previous job experiences, but this does not happen always since social connections produce some different results. In this second case we have proved that the positive result generated by educational and economic factors can be reduced by social ones.

Once discussed which factors generate intergenerational mobility, we have tried to answer how European countries can intervene in order to favour it. Firstly, we must affirm that not all the policies produce the same results. Indeed, policies that contrast informational frictions and beliefs do not produce consistent results like those linked to education, and tax system. Indeed, social transfers can contribute positively to the

reductions of social immobility by lowering the negative impact of events such as unemployment and sickness. These measures guarantee that individuals could have sufficient resources to overcome these negative events. In addition, educational support of countries can produce positive effects to limit the negative consequences that capital constraints produce on educational level of individual. Other measures to support more disadvantage children in education and which prevent children to drop out seem efficacious. The case of Netherland is an example where this last problem has been reduced making mandatory to reach a certain level of education producing a 67,7% reduction of drop out. Also familiar policies seem to have a significant impact on the improvement of possibilities of individuals beyond their original social status. Indeed, it has estimated that 1% increment of GDP expenditure in disadvantaged children's support can produce a three times smaller gap in the tertiary education attendance.

However, we must highlight that countries intervention produce different outcomes on disadvantaged individuals during the lifecycle. Indeed, while the individuals' support during the early stage of life produces consistent results in the promotion of their social mobility in all European countries this does not happen in later stages of life where only small effects are produced.

We also had to face some problems and limitations during the research. The first issue is related to the complexity of the phenomenon. Indeed, as our research has highlighted, some mechanisms in intergenerational mobility still remain unexplained due to the fact that further factors have yet to be found or, also when they are known, they are difficult to detect and measure. Consequently, this makes the countries' intervention more difficult and sometimes inefficacious.

A second limit of our research is related to the fact that the empirical analysis is based on the number of years of education. This factor can be clearly considered a benchmark to express the level of education of individuals but we might suspect that possible biases like the repetition of school years or other difficulties that the individual could face during the education period may increase the number of years in education without representing a real improvement in the educational outcome. Moreover, education can be used as unit measure to express intergenerational mobility, however also other factors affect the mobility of the individual and so also those individuals who have a high level of education may not be able to reach the highest levels of the social hierarchy.

Hence, future research could carry out more studies on the factors which determine the intergenerational mobility. Indeed, if new factors were determined (or new ways to determine the mechanisms of those which are currently considered as random) this could lead to a wider comprehension of the phenomenon. Moreover, more research will be necessary to understand if education can be considered a good estimation to express intergenerational mobility and, if not, in which measure other factors influence the intergenerational mobility of individuals. This could be useful not only for countries in order to determine adequate policies but also to guarantee that every single individual could have the same possibility to improve their social status.

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