



# The private and social return to education considering the characteristics of society

## O retorno privado e social à educação considerando as características da sociedade

Michele ROMANELLO <sup>1</sup>

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#### **ABSTRACT:**

This paper considers the exchange of human capital between individuals that happens outside firms. The central point is an exploratory analysis on the relationship between the characteristics of societies and the type of returns to education. The societies can be more or less heterogeneous according to determined aspects, as ethnic, linguistic and religious divisions, distribution of income and wealth. In more heterogeneous societies, it is more difficult, in general, for people interacting and, more in particular, the relation between more educated individuals and the less educated happens less often.

**Palavras-chave:** human capital, social heterogeneity, social capital

#### **RESUMO:**

O presente trabalho aborda, principalmente, a troca de capital humano entre os indivíduos que acontece fora das empresas. O ponto central é uma análise exploratória sobre a relação entre as características das sociedades e o tipo de retornos da educação. As sociedades podem ser mais ou menos heterogêneas de acordo com determinados aspectos, como as divisões étnicas, linguísticas e religiosas, a distribuição de renda e a riqueza. Em sociedades mais heterogêneas, é mais difícil, em geral, para as pessoas interagir e, em particular, a relação entre os indivíduos mais educados e os menos educados acontece com menos frequência.

**Keywords:** capital humano, heterogeneidade social, capital social

## Introduction

Return to education is a topic largely present in economic literature. Whether the returns to education increase productivity is of interest to economists and policymakers, because this issue has substantial implications regarding government subsidies for education and economic growth. It is evidenced that investment in human capital has a positive return, in fact, the average difference between the wages of a university graduate and a high school graduate is significant in most countries. Not only workers with a high level of schooling are paid more, but also this difference in earnings reflects the benefits of education and not a product of selection. In other words, this difference can be interpreted as the change of productivity that education leads to individuals.

Most researches on the returns to education have tried to find whether the social return to education

may exceed the private return. Different explanations have been offered for spillovers from an individual to another. For example, the sharing of knowledge and skills through formal and informal interaction may generate positive externalities across workers.

The greater part of studies on this topic has focused on the interaction between workers inside the firm and so on the spillovers of human capital that happen in a working environment.

The present paper will consider principally the exchange of human capital between individuals that happens outside firms. The central point will be an exploratory analysis on the relationship between the characteristics of societies and the type of returns to education.

The societies can be more or less heterogeneous according to determined aspects, as ethnic, linguistic and religious divisions, distribution of income and wealth. The main hypothesis of this work is that, in more heterogeneous societies, it is more difficult, in general, for people interacting and, more in particular, the relation between more educated individuals and the less educated happens less often. In practice, in heterogeneous societies, people interiorize the returns to education and thus private return are similar or inferior to social returns, while, in more homogeneous societies, spillovers of human capital from educated individual to the others increase social returns to education, which are larger than private returns. The paper will try to find evidences of these hypotheses in the literature, using five main sections, including this introduction: in the second section, the concepts of private return and social return to education are analyzed; in the third section, various factors that determine if a society is more or less heterogeneous are evidenced; the four section examines the role of social capital in determining the type of return to education; finally, the fifth section concludes the paper.

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## **1. Private and social return to education**

The first aspect to be analyzed is the concept of private return and social return to education.

The concept of private return to education can be synthesized through the evidence that individuals with more education earn higher wages than individuals with lower levels of education. For another side, the concept of social return can be defined as the sum of the private and external marginal benefits or costs of a unit of human capital.

There are three main strands in the theory on externalities due to education:

1. positive private returns (signaling) to education and negative social returns to education.
2. positive both private and social returns to education
3. positive social returns to education that do not apply directly to the production process (Lange, Topel, 2006).

In the first case, private returns are positive due to the fact that education improves the possibilities in the job market for an individual, but it doesn't increase the productivity of the society.

When an entrepreneur wants to hire some worker, he looks to personal attributes of the job applicant. Among the observable attributes of an applicant worker, there could be fixed characteristics and alterable characteristics. The level of education is a characteristic of individuals that can be modified by workers through investment in study. On the other hand, race and sex are difficult to be modified and so they can be considered fixed.

We can refer to unchangeable characteristics of individuals as indices, while the term signals can be used with the attributes that can be manipulated by workers. We can include the attributes that change by themselves and not by the will of the individual in the group of indices; one example of these is age. The employer will learn the employee's productive capabilities when he can observe the individual working in his firm. On the basis of previous experience of workers in the production, the employer will have conditional probability estimations over productive capacity of determined combinations of signals and prices. In any recruitment of a worker, the employer's decision is defined by these conditional probability distributions over productivity confronted with new data (Spence, 1973).

On the employee side, the applicant cannot modify his indices, but he can alter his signals. Education is one of the main instruments through which an individual can improve his signals. Nevertheless these alterations are costly: theory refers to these costs as signaling costs. Each individual will invest in education only if it will maximize the difference between offered wages and signaling costs (Spence, 1973).

In this theory on returns to education, the private returns do not lead to social returns. This conclusion is due to the fact that every individual will invest in the signal in the same way of the others, so that the employer cannot distinguish them basing on the signals. In this way, education is not directly linked with

increase in productivity, since signaling leads to the fact that workers are not hired in an efficient way and so education reduces social output by using resources, most of times public, that can be used to other aims.

In the second case, persons with greater skill may raise the productivity of others with whom they interact, so accumulation of human capital may increase total factor productivity in an economy.

This second case is important because it can be understood if the government participation in education has a rationale of efficiency.

In general, it is reasonable to think that one person's human capital is more productive when other members of society have a higher level of schooling. The benefits of such complementarities will be internalized when they occur within firms. Workers acquire skills through wealth maximizing investment decisions: they improve their productivity through schooling, training and learning by doing. The main question is whether human capital spillovers lead to a market failure (externalities) or not. It depends on whether the spillover occurs within or outside the company. If there are spillovers of human capital within the company, these may be internalized in the wages of the workers with a higher level of education or in the wages of those workers that are the font of the spillovers, while spillovers that go outside the company can be considered pure externalities (Braakmann, 2009). Those spillovers that are external to companies are produced by other interactions in the society beyond working environment.

The first type of relations that occurs outside the firm is linked to market interaction, especially in the job market.

The optimal amount of schooling of an individual depends on what type of job will be available in the market and on what kind of physical capital will be in contact. On demand side, companies' choices of jobs and physical capital depend on the level of schooling of the individuals offering their work. The immediate consequence of this fact is the willingness of the firm to invest more when its potential workers are increasing their education. Therefore, some of the workers, who have not increased their level of schooling and have entered jobs where more physical capital is now used, earn an increased rate of return on their human capital. So, the return on human capital of a worker is increasing in the human capital stock of the workforce, due to job market interaction in this case and not to the aggregate technology, as in the case of spillovers within the firm (Acemoglu, 1996).

A second type of returns of education that occurs outside the firm is linked to the role of the cities. Dense urban agglomerations provide a faster rate of contact between people and so, every time a less skilled individual comes into contact with high schooling people, knowledge passes from an individual to the other. Business clusters can be a good example of this type of spillover, especially clusters of technological firms.

A third strand of literature highlights potential external benefits of education that do not apply directly to the production process. In fact, they are not reflected in factor payments, and so they are more difficult to measure through researches. The role of education in reducing criminal behavior is the first example of this type of external benefits. Some explication of the role of education in reducing criminal acts are the evidences that schooling raises the opportunity cost of crime and the cost of the time spent in prison, and it increases the patience and the risk aversion of individuals (Lochner, Moretti, 2004).

The empirical evidence on this assumption shows that education has a significant direct effect on crime, but also an indirect one attributed to the increase in wages associated with schooling. It can also be affirmed according to the data that the impact of high school graduation on crime implies that there are benefits to education that are not considered by individuals, so the social return to school is greater than the private return (Lochner, Moretti, 2004).

Another group of potential external benefits of education that do not apply directly to the production process is linked to the fact that education enables individuals to participate more efficiently in the political process. The empirical evidence points out that education increases citizens' consideration to public affairs and to the importance of politics. Citizens with more schooling appear to have larger information on candidates. Overall, these data suggest that education has social externalities through the production of a better allocation of public resources, due to the presence of more honest politicians (Miligan et al, 2003).

A third type of social return external to the production process is consumption externalities due to education. In this group we can include a reduction in health costs of government due to healthier alimentation of the population and to fall in the number of smokers.

## 1.1 Difficulties in measuring social return and externalities

The hypothesis of social return to education is not easy to test; it requires verification that the social return to a "unit" of human capital is different from the private return. If we take schooling as our ideal measure of a human capital component, then Mincerian estimates of the private return to schooling investments are largely present in the literature.

One of the first ways to estimate human capital externalities is developed by Rauch (1993). The author estimates the social return of education using differences in average schooling across cities. Yet, he faces the problem of identification of causality: more schooling is cause of higher salaries or higher income leads to more education.

The solution to the problem in question is given by other economists (Acemoglu, Angrist, 2000), that use instrumental variable to estimate the effect of the average level of education on income.

The instrumental variable chosen by the authors is the difference in compulsory attendance laws and child labor laws in US states between 1920 and 1960, which affect the level of education of workers in a given area. Compulsory schooling laws are a natural experiment for the measurement of social return of education. The main fact is the exogeneity of the effect of compulsory schooling laws respect adult income: these laws that affect an individual in the years of schooling are independent to parent's wages.

One of the most advanced empirical studies to examine human capital externalities was developed by Moretti (2004). The researcher tested the hypothesis that the returns to college are fully included in the wages of college educated workers against the alternative hypothesis that other people in the same labor market benefit from spillovers of human capital. The methodology of the economist is comparing the wages of otherwise similar individuals living in cities or urban agglomerations with different shares of college educated workers in the labor force. Econometric studies prove a large positive relationship between individual wages and the share of college graduates in a city, even after controlling for the direct effect of individual education on wages.

In fact, even after controlling for the private return to education, wages are higher in cities where workers have more years of schooling. However, the author of that research presents the problem relative to characteristics of workers and cities that may be correlated with wages and college share, but not taken into consideration in the regression. First of these are unobserved individual characteristics, such as ability, that are correlated both with wages and college share across cities. We can easily think that workers with high levels of unobserved ability sort into cities where well-educated workers are present. This problem is overcome through the use of longitudinal data that allow the observation of the same individual over time and so to control for individual and city fixed effects. The result is that omitted individual characteristics are not source of bias.

A second hypothetical cause of bias can be unobserved specific characteristics of each city. Cities can vary in geographical position, industrial organization, weather and services. In the cities where unobserved characteristics change the productivity of workers, wages can be higher for these characteristics and not for more schooling of people. The research in question uses instrumental variable to overcome this problem: the instruments used are correlated with the share of individuals with college (independent variable) and uncorrelated with unobserved factors.

The second part of the work of Moretti (2004) shows how a rise in the percentage of college graduates affects the wages of four education groups (high school dropouts, high school graduates, workers with some college, and college graduates). The research paper in question confirms the theory that the effect of an increase in the percentage of individuals with college on the wage of low educated workers is positive. In fact, the effect is the addition of two positive components: imperfect substitution and spillover effect. We have discussed about spillovers in the previous chapter, while the effect of being imperfect substitutes is to clarify. When educated and uneducated workers are imperfect substitutes, an increase in the relative number of college graduates is definitely positive for the wage of unskilled workers. Imperfect substitution implies that some uneducated workers in areas with high average education may work with more physical capital than similar workers in areas with low average education.

On the contrary, when we examine the effect of an increase of college percentage on the wage of high educated workers, it can be seen that it is the addition of two contrary components: the decrease in the private return to education and the positive spillover effect.

The conclusion of Moretti (2004) is that a one percent raise in the share of college educated workers

increases the wage of highschool dropouts, high school graduates, workers with some college, and college graduates by 1.9%, 1.6%, 1.2% and 0.4%, respectively.

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## **2. Characteristics of society: homogeneity and heterogeneity**

The main objective of the present paper is to identify if there is a relation between the type of society, that is, homogenous or heterogeneous according to various factors, and the kind of returns to education that are more present in that society. The principal hypothesis is that heterogeneous societies develop in prevalence private returns to schooling, while homogeneous societies develop without difficulty social returns. It is easy to understand that, in this work, more importance is placed on spillovers of human capital outside the firms.

There are various factors that determine if a society is more or less heterogeneous: for instance, we can mention differences in language, social behavior, ethnic, cults, religions, income.

The literature about this theme affirms that people in general have an in-group bias: they prefer members of their group (religious, ethnical, language, etc.), while they are indifferent toward members of out-groups. Moreover, individuals tend to consider members within their group as more varied in their characteristics and members outside the own group as more homogeneous, stereotyping that members around few main characteristic. We have also to add that theories of social conformity explain that individuals have a preference of human relations with others like them, because of shared interests, same cultural customs and sympathy toward individuals who remind them of themselves (Anderson, Paskeviciute, 2006).

Allport (1954) suggested that in-groups are "psychologically primary," in the sense that familiarity, connection, and predilection for one's in-groups come earlier to development of attitudes toward specific out-groups. Moreover, Allport recognized that preferring member within own group does not necessarily imply negativity or hostility toward out-groups.

In the next subchapters, we analyze factors that can be source of heterogeneity in the society, trying to find their relation with human capital returns.

### **2.1 Ethnic and linguistic diversity**

The first relevant information about ethnic diversity is the way by which it affects economic growth.

Alesina et al (2003) have found that the passage from complete ethnic homogeneity to complete heterogeneity depresses annual growth of an economy by 1.9 percentage points.

Moreover, through a cross-country analysis, Easterly and Levine (1997) have shown that per capita GDP growth is inversely correlated to heterogeneity due to ethnic and linguistic characteristics in a large sample of countries. In particular, they demonstrated that a large part of Africa's growth failure is due to ethnic conflicts, to a certain extent, result of borders left by former colonizers.

A further literature on US localities shows that in more ethnically heterogeneous communities, public goods provision is less efficient, participation in social activities and trust is lower, and economic success, measured by growth of city sizes, is lower. Empirical evidence also supports the theory that trust does not get along with racial division of the society.

As a consequence of these empirical results, it can be affirmed that the level of heterogeneity of a society affects the productivity of its economy (Alesina et al, 2003).

Polarized societies lead to competitive rent-seeking by each different group and to political disagreement and conflict about decision on public goods. Ethnic diversity may rise polarization and thereby obstruct agreement about the provision of public goods and create incentives for policies that are contrary to growth (Easterly, Levine, 1997). In fact, democracy index is inversely correlated to ethnic fractionalization according to the work of Alesina et al (2003). In more fragmented societies a group can impose limitation on political liberty, on free discussion and on public debates, while in more homogeneous societies debates and discussion are common.

Curtler and Glaser (1995) test in their work the hypothesis that segregation due to ethnic difference is negative for black people in United States, because the level of segregation determines how much blacks are in contact with more educated people of all races. Thus, it can be affirmed that ethnic segregation is proxy for the lack of contact with more educated people.

For testing this hypothesis, the authors created a measure of the interaction between black people and

those with more education (individual that have attended a college for some time) in each metropolitan area:

$$\text{Educated exposure} = \sum_{i=1..N} (\text{Black}_i / \text{Black}) * (\text{Educ}_i / \text{Persons}_i) - (\text{Educ} / \text{Persons})$$

where  $i$  represent the census tract,  $\text{Educ}_i$ ,  $\text{Black}_i$ ,  $\text{Persons}_i$  is respectively the number of educated people, of black people and of persons in general in the tract, while  $\text{Educ}$ ,  $\text{Black}$ ,  $\text{Persons}$  is respectively the number of educated people, of black people and of persons in general in the city.

We can observe that, if all tracts of the city were racially and educationally equal, the proportion of educated black people would be the same proportion for the city as a whole. The subtraction of the proportion of educated people in the city is justified by the will of avoiding that the measure of education exposure is only an average of the differences in achievement across the city.

This index of educated exposition is larger than 0 if blacks live in census tracts with more educated people and less than 0 if they live in census tracts with less educated people. The mean of this measure of educated exposure is  $-0,86$  with a minimum of  $-0,206$  and a maximum of  $0,82$ .

According to these figure, we can affirm that ethnic segregation in this case has reduced the contact of some parts of the society with other parts and primarily the relation between educated and less educated people in United States.

The heterogeneity of the society may take different forms and these forms can vary according to the region of the world that is taken into consideration. The data for most of the countries of Latin America is based on racial distinctions rather than linguistic distinctions. For example, in Bolivia the society is divided in the following groups: Blancos (10.13%), Aymara (30.38%), Quechua (30.38%), Mestizos (25.32%) and others groups (indigenous and Afro, 3.80%).

In contrast, the data for some European countries principally reflect differences in language. Switzerland is a classic example because it includes various groups different in language: German 65%, French 18%, Italian 10%, other Swiss 6% and Romansch 1%) (Alesina et al, 2003).

Linguistic heterogeneity reduces the level of trust among natives and non-natives. In fact, it seems that immigrants who move into linguistically different city are subject to less trusting than native or long time resident in that place.

Ethnic heterogeneity and linguistic heterogeneity are measured using a Herfindahl-type fractionalization index:  $\text{FRAC}_j = 1 - \sum_{e=1..n} (s_{ej}^2)$ , where  $s_{ej}$  is the share of ethnic group  $e$  in zone  $j$ . The fractionalization index in each locality quantifies the chance that two randomly selected individuals are in a different ethnic or linguistic group (Leigh, 2006). In table 1 we can observe the fractionalization index in various regions of the world.

**Table 1.** Herfindahl-type fractionalization index

Latin America and Carribean	Sub-Saharan Africa	Eastern and Central Europe	Western and Southern Europe	Middle East	East and South-East Asia
0,265	0,651	0,315	0,147	0,244	0,462

Source: Leigh, 2006

Analyzing religious heterogeneity, we can find researches that confirm evidences of its effects on the provision of public goods. Across Indian regions, Banerjee, Iyer and Somanathan (2005) find that more caste or religious fractionalization is associated with lower levels of public goods provision.

Padro-i-Miquel et al (2012) document the religious composition and the introduction of local elections in rural China during the post-Mao reform era. Authors find that there was no difference in government expenditure on public goods across villages of different levels of religious fragmentation prior to the introduction of elections. The introduction of elections considerably raised public goods provision, but the increase was less important for village with higher levels of religious heterogeneity (Padro-i-Miquel et al, 2012)

## 2.2 Income and inequality

Difference in income distribution and inequality within a society may affect the return of schooling and in particular human capital externalities.

When we observe differences in outcomes within a city, we tend to think that these diversities may only represent the sorting by ability due to differences in housing qualities and public goods present in that area. However, it is not only the common tastes among the rich people that determine the sorting within a city, but also the positive spillovers of human capital in favor of people living in a determined area. Rich people in general tend to achieve higher levels of schooling or they are rich due to the returns of education and, for these reasons, people living in the same area or frequenting the same locales of rich people can benefit for positive externalities to education deriving from them. For this motive, it can be supposed that a country where exists a large difference between income of rich people and poor people, such that it leads to segregation between the different social classes, does not experiment large human capital externalities, but on the contrary it shows large private returns to education.

For explaining the way by which inequality influences the type of returns to education, it is important underling the role of "trust". An increase in mean income could be expected to be related with increased trust, either because richer communities are incline towards the high-trust equilibrium, or because they spend more on local public goods, which increase sociability and confidence. Inequality may also affect trust by creating a perception of injustice, where poor people have hostile attitude towards the riches, or because individuals feel more comfortable interacting with others who have similar levels of income or wealth. (Leigh, 2006)

The empirical estimates indicate only that education is more beneficial at the lower range of the income distribution, implying that the growth of educational opportunities to the disadvantaged members of society might contribute to the maximization of the rate of returns (Girma, Kedir, 2005).

Across countries, Leigh (2006) finds that while both inequality and ethnic heterogeneity are negatively related with trust, inequality is the variable which dominates when both are included in the model, a finding that remains true even after using an instrument for inequality.

In the following table (Table 2) we can compare private and social returns to schooling with Gini index in various countries of the world at different levels of education (primary, secondary and higher).

Unfortunately, the social returns of this table are defined on the basis of private benefits, but total (private plus external) costs; social benefits are not considered. This is a consequence of the public subsidization of education and the fact that social rate of return estimates are not able to include social benefits (Psacharopoulos, Patrinos, 2004).

**Table 2. Private – Social returns to education and Gini index**

		Social returns			Private Returns			Gini Index
Country	Year	Primary	Secondary	Higher	Primary	Secondary	Higher	
Argentina	1989	8.4	7.1	7.6	10.1	14.2	14.9	42.70
Brazil	1989	35.6	5.1	21.4	36.6	5.1	28.2	63.30
Chile	1989	8.1	11.1	14.0	9.7	12.9	20.7	57.25*
China	1993	14.4	12.9	11.3	18.0	13.4	15.1	42.83**
Colombia	1989	20.0	11.4	14.0	27.7	14.7	21.7	53.59
Costa Rica	1989	11.2	14.4	9.0	12.2	17.6	12.9	46.69
El Salvador	1990	16.4	13.3	8.0	18.9	14.5	9.5	53.95***
Ethiopia	1996	14.9	14.4	11.9	24.7	24.2	26.6	44.56

Japan	1976	9.6	8.6	6.9	13.4	10.4	8.8	32.11**
Philippines	1988	13.3	8.9	10.5	18.3	10.5	11.6	40.75
Uruguay	1989	21.6	8.1	10.3	27.8	10.3	12.8	42.37

*Psacharopoulos, Patrinos, 2004; World Bank Gini Index, 1989*  
\* Year 1990      \*\* Year 2008      \*\*\* Year 1991

It can be observed that countries with low Gini index, as, for instance, Argentina and Japan, have low levels of private returns, while countries with high Gini index, as Brazil and Colombia, have high levels of private returns.

However, we cannot conclude that inequality cause high levels of private return to education, because, as we have seen, exist other factors that affect returns, and additionally it could happen that countries with high inequality are in general developing countries, where the opportunities in the job market are larger than in developed economies, maximizing the private returns to education.

### 3. Social capital

Social capital is the expected collective or economic benefit resulting from the action and preferential cooperation between individuals and groups. In the same way that physical capital or human capital can increase productivity, social interactions affect the productivity of individuals and groups (Putnam, 2000). In fact, on one hand, the physical capital is generated by changes in tools that improve the production, and human capital is generated by changes in the education and skills of individuals, on the other hand, social capital is created by an increase in confidence of relations between people.

Putnam (2000) argues that the presence of social capital can be linked to several positive educational outcomes. These positive results are a consequence of the social capital of the parents in a community. In areas where there is a high social capital, there is also a high level of education. Teachers reported that when parents contribute more in the education of children and school life, the bad behavior levels fall, for example, bringing weapons to school, physical violence, truancy, and disinterest on education.

According to Coleman (1988), social capital creates human capital and depends on the financial capital of the family. In turn, the community's social capital helps to generate human capital in the family, providing the basic social resources to encourage educational activity in their children.

#### 3.1. The important role of "trust"

It can be supposed that "trust" has an important role of intermediation between the level of heterogeneity of the society and the magnitude of human capital externalities that occur outside the firm. Trust is determined by the factors that we have evidenced in the previous chapters: ethnic heterogeneity, linguistic heterogeneity, religious differences, inequality in income. Trust, in turn, affects human relationships and the exchange of views, knowledge and opinions between people in a society, because an individual enters in contact with another only if he demonstrates trust and sympathy.

Economists, philologists and sociologists have developed various theories to explain trust. Trust may be determined by morals and culture, which are likely to be in relation with income, education, employment and age.

Empirical evidence has demonstrated a strong negative relationship between trust in a determined city and ethno-linguistic heterogeneity. An increase of 1 unit in the standard deviation of ethnic heterogeneity leads to a decrease of 5 per cent in trust in a determined area, while an increase of 1 unit in the standard deviation of linguistic heterogeneity leads to a fall of 6 per cent in trust. Both regressions have statistical significance at the level of 1 per cent. When inequality and the variables of heterogeneity both ethnic and linguistic are included together in the regression, linguistic heterogeneity continue significant, while the coefficients on inequality and ethnic heterogeneity become insignificant. These studies demonstrated that the ability to communicate effectively may be more important than having a common ethnic origin (Leigh, 2006).

However ethnic diversity can be related with lower trust according to several facts. People living in homogenous communities have similar tastes due to the fact that individuals of the largest group do not accept "diversities" in the society. Moreover, diverse communities have more difficulties in developing a



common system of laws, rules and social sanctions.

Trust in general has a large importance in economics. Trust has increasingly come to be identified as a decisive element of both democracy and markets. The willingness to trust people that are not known endorses civic engagement and community-building. It also plays a central role in economic affairs, promoting cooperation and so facilitating impersonal exchange. The results can be remarkable: higher trust has been associated with greater involvement in politics by individuals, lower corruption, more efficient public services, higher economic growth, and other benefits (Bahry et al, 2005).

Moreover, individuals in societies with higher level of trust have lower expenses to protect themselves from problems that may occur in economic transactions. Written contracts in many occasions may be less needed and litigation may be less frequent.

Trust in many ways is related with education and its returns. Where trust makes possible the enforcement of contracts, the return to specialized education is higher. In addition, in societies with low trust, hiring decisions by firms are influenced less by education and more by personal characteristics of applicants, such as blood ties or personal knowledge (Knack and Keefer, 1997).

### **3.2. "Social distance"**

The term "social distance" describes various values that determined cultures have in comparison with others. Social distance is a cultural difference that prevents or hinders the interaction between different groups. The absence of a "common culture" reduces the interaction between agents and, thus, affects the production efficiency and trade. The role of education is to increase the proximity between individuals, improve the communication, reduce criminality, grow democracy, enhance the quality of parental care, reduce addictions and give other benefits. All these benefits are important factors because through them social returns to education are larger than private returns (Barbosa Filho, Pessoa, 2010)

Gradstein and Justman (2002) construct a dynamic model in which the productivity of transactions between two types of individuals depends on the "social distance" between them. This "social distance" is affected by the type of education that parents choose for their children. The closer the "common culture" is the choice, the higher the productivity of the child. However, parents have a psychological cost that rises with the distance between their culture and the culture that their child learns at school, which reduces the incentive of giving his child the "common culture." Thus, according to this model, parents provide an education in which there is a large social heterogeneity, which results in low returns to education and a low economic growth.

In this situation, the government can make a Pareto improvement with a policy where social differences are reduced gradually, which encourages growth. However, this reduction of "social distance" never will be complete, due to psychological cost paid by the parents. The conclusion is that a trade-off exists between the reduction of social distance and the utility of parents. Teaching of values at school very different from those practiced at home, although the reduction of social distance improves the economy, generates a discomfort for parents, because of the difference between "culture" acquired by children and that preferred by parents.

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## **4. Conclusions**

The present paper represents a foundation for researching on the externalities of human capital that occurs outside the firms.

Many interesting facts have been placed in evidence on this subject. In fact, the literature considered in this work suggests that the relationship between social homogeneity and economic performance has important economic implications.

Moreover, different social groups and people that separately operate lead to excessive polarization and hence less than optimal growth. The optimal trajectory involves a gradual, reciprocal convergence of social orientation towards the middle ground.

The literature review suggests indirectly that the initial hypotheses may be true, but empirical evidences should be researched to reach a higher level of certainty.

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