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A meta-analysis of the effect of education on social capital

Jian Huang[a], Henriëtte Maassen van den Brink[a,1], Wim Groot[a,b,*]

[a] Top Institute for Evidence Based Education Research (TIER), University of Amsterdam, Faculty of Economics and Business Studies, Amsterdam School of Economics (ASE), Roetersstraat 11, 1018 WB Amsterdam, The Netherlands
[b] Maastricht University, Faculty of Health, Medicine and Life Sciences, Department of Health Organization, Policy and Economics, P.O. Box 616, 6200 MD Maastricht, The Netherlands

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ABSTRACT

To assess the empirical estimates of the effect of education on social trust and social participation – the basic dimensions of individual social capital – a meta-analysis is applied, synthesizing 154 evaluations on social trust, and 286 evaluations on social participation. The publication bias problem is given special emphasis in the meta-analysis. Our statistical synthesis confirms that education is a strong and robust correlate of individual social capital. The meta-analysis provides support for the existence of a relative effect of education on social participation, and of a reciprocity mechanism between the dimensions of social capital. The analysis also suggests that the erosion of social participation during the past decades has coincided with a decrease of the marginal return to education on social capital. Finally, we find differences in the return to education between genders, between US and other nations, and variations for different education attainments.

1. Introduction

The interest in social capital has led to a profusion of studies on its economic and social effects, as well as its sources of origin and its accumulation mechanisms. Social capital as Putnam (1993, 1995, 2000) connotes, is an aggregate concept that encompasses the association networks, norms and trust that facilitate collective interactions for mutual economic and social benefits. Social capital at the individual level is generally seen as an aggregate of two dimensions—trust in general people and personal involvement in social activities.

Individual social trust reflects the bond that people share across economic and ethnic groups (Rothstein & Uslaner, 2004). High levels of social trust lead people to expect that others are cooperative and not opportunistic in social and economic exchanges, which reduces transaction cost and helps solve the free-rider problem in providing public goods. Social trust is usually measured by the response to the following question: "Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?" This operationalisation of social trust has been widely used in surveys around the world, including the General Social Survey (GSS) and the World Values Survey (WVS). Individual social participation is a general indicator to denote level of personal involvement in social activities. Social participation covers all types of active affiliation with groups outside the family and voluntary activities unrelated to political purposes, such as voting and lobbying. A high level of social participation is supposed to raise civic norms among people and fortify the foundation of a democratic society. Two sub-categories are distinguished to capture the complexity and diversity of social participation: membership in non-political groups (clubs and other

* Corresponding author at: P.O. Box 616, 6200 MD Maastricht, The Netherlands. Tel.: +31 43 388 1588/1727.
E-mail addresses: J.Huang@uva.nl (J. Huang), h.maassenvandenbrink@uva.nl (H. Maassen van den Brink), w.groot@beoz.unimaas.nl (W. Groot).
[1] Tel.: +31 20 525 4311.

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organizations) and participation in voluntary activities. Actually, they are both measured as either the probability of joining non-political groups or participating in voluntary activities, or the degree of social involvement, that is, number of memberships or frequency of participation.

Education, according to Putnam (1995, 2000), Brehm and Rahn (1997), Alesina and La Ferrara (2000a), is one of the most important determinants of social capital. It reflects an orientation towards the future by strengthening human capital and social capital for economic and social development. Schooling spreads knowledge – the basic component of human capital, and cultivates social norms – the core of social capital. Schooling is the first non-familial context in an individual's life where moral and cognitive capacities are trained (Offe & Fuchs, 2002). Through civil education from schooling, students learn the basic norms and responsibilities in society, as well as the functioning of democracy.

Glaeser, Laibson, Scheinkman, and Scoutter (1999) assert that the most robust correlate of social capital variables is years of schooling. Using the World Values Survey, they find a positive relationship between schooling and membership of organizations in almost every country. Denny (2003) claims that acquiring a 4-year university degree is associated with a 10 percent higher probability of an individual engaging in voluntary works. Putnam (1995, 2000), Uslaner (1997, 1998), Alesina and La Ferrara (2000a, 2000b) also show that more educated people are more likely to have higher trust in other people and they tend to join more social organizations and participate in group activities more frequently. However, the estimated educational returns vary across studies due to heterogeneities in survey sources, and methodological or contextual variations. In this paper we provide a research synthesis of the estimated educational returns to individual social capital from relevant studies. We aim to obtain an inclusive review of educational returns to individual social capital, and evaluate the possible variation sources in the estimated effect of education on social capital.

Two criteria were used for the inclusion of the available literature in the meta-analysis: (a) studies should focus on the determinants of at least one dimension of social capital at the individual level with formal education as a covariate in the model; (b) studies should have reported statistical data (t-statistics, p-value or standard error) that allow for estimation by the fixed effects and random effects models. A dataset is created for our analysis that includes estimates from 65 studies. Twenty-eight studies provide estimates of the return to education on social trust and 37 studies provide estimates on social participation. Table 1 presents information on the authors, year of publication and survey period, classified by social trust and social participation.

The number of estimates varies markedly from 1 to 88 because some studies offers the estimates of educational return for each nation in the surveys (for instance, Denny, 2003 evaluates the effect of schooling on social participation for 20 countries respectively using International Adult Literacy Survey, and Glaeser et al., 1999 evaluates the effect of schooling on social trust for 20 countries respectively using World Value Survey). The evaluation methodology may differ in the same study as authors may compare the estimates from simple linear model and that from a model that accounts for endogeneity of education on social capital (such as Dee, 2003; Denny, 2003; Huang, Maassen van den Brink, & Groot, 2008a; Milligan, Moretti, & Oreopoulos, 2003). Contextual variations in the same study are also a key factor for the large number of effect sizes as authors may compare estimates from different specifications of the model. They may investigate the difference in educational returns in the model with and without average education return (such as Glaeser et al., 1999; Helliwell & Putnam, 1999; Marschall & Stolle, 2004), or they may compare the education return for men and for women, for the elderly and for youth, for college education and for high school education.

The majority of studies in our dataset do not consider the possibility that the choice of educational attainment and social capital are simultaneously influenced by unobserved heterogeneity specific to the individuals. The ignorance of the endogeneity problem can cause biased estimates of the educational return. For example, it is plausible that people with good relations with parents and friends in their childhood may obtain better education and have higher social capital in adulthood. However, these interactions in childhood usually turn out to be unobservable to researchers.

Some studies in our dataset have taken account of the endogeneity problem. Using policy reform dummies as instruments, i.e. the increase in the minimum schooling age and abolition of tuition fees for secondary school, Denny (2003) applies a two-step procedure in the evaluation for Britain, Italy, Northern Ireland and the Republic of Ireland. The results in his study are mixed, although he observes a positive relation between education and altruistic (charity) activities in most West European counties. Dee (2003) employs 2SLS and bivariate probit, by relying on changes in teen exposure to child labor laws, to estimate the educational impact on the probability of joining social groups and volunteering in social services, and the impact on the number of affiliated groups. He confirms the substantial causal effect of schooling on most measurements of social participation, except for the frequency of voluntary work. Changes in compulsory schooling law are also applied in the studies of education and social trust. Milligan et al. (2003), for example, apply this strategy in their study of educational return to trust and other civic outcomes. They do not observe any substantial difference between the estimates from OLS and 2SLS regressions. Huang et al. (2008a) separate a non-systematic health component from the schooling absence length due to illness as a powerful instrument of education choice which is not correlated with adult health. Similarly, this study finds no sign of endogeneity in the college choice of observations. Does the estimation method to account for the endogeneity problem produce considerably different estimates of the educational return to social capital? Our meta-analysis will shed some light on this question.

It is also noteworthy that one's social capital can be affected not only by one's own education, but also by that of others around him. The impact of education on social