



The impact of education on health in China



Shiqing XIE*, Taiping MO

Department of Finance, School of Economics, Peking University, 100871 Beijing, PR China

ARTICLE INFO

Article history:

Received 22 July 2013

Received in revised form 26 December 2013

Accepted 29 December 2013

Available online 4 January 2014

JEL classification:

I12

I20

Keywords:

Education

Health

Instrumental variable

Compulsory education law

Spouse's education

ABSTRACT

In this paper, we investigate the causal effect of education on health using an instrumental variable approach. The instruments we employ consist of two institutional changes in China that generated discontinuities in educational attainment among individuals. To ensure the validity of the instruments and obtain prudent conclusions, we adopt more restrictive identification tests than previous studies. The results indicate no causal impact of education on either perceived health or anthropometric health. With regard to the impact of education on male health behavior, namely smoking, we cannot provide conclusive results due to a violation of the exogeneity of our instruments. Nevertheless, we can confirm that education has no causal effect on female health behavior. To overcome the widely documented shortage of quasi-experimental identification, we also employ spouse's education as an alternative instrument to examine the causal effect of education. Identical results are obtained, with the exception that the impact of education on the reduction of overweight among women becomes significant. We conclude that this provides some evidence of a causal impact of education on health.

© 2014 Elsevier Inc. All rights reserved.

1. Introduction

Health and education are two vital components of human capital. Interestingly, recent empirical studies document a strong and positive correlation between the two components. Even when various measures of socio-economic status and different demographical characteristics are controlled for, the correlation remains significant. In his pioneering work in this field, Grossman (1972) proposed two causal paths to link education with health. First, better educated people are more efficient in the use of health care services and, therefore, can obtain more health capital. This is termed the productive efficiency of education. Second, education discourages individuals from maintaining unhealthy habits (such as smoking, drinking, etc.), which leads them to invest more in health and thus to attain a better health status. This is called the allocative efficiency of education. Therefore, it is possible that if the positive causality of education on health is validated, the usual estimate given for the rate of return to education funding is grossly underestimated.

However, controversy surrounds the issue, i.e. whether the measured correlation really reflects causality running from more education to better health or the opposite. Of course, a third possibility could be that the correlation merely results from some unobserved variables such as heredity, ability, or time preference that affect education and health in the same way (Fuchs, 1982; Grossman, 2005; Silles, 2009). If either of the latter two relationships is correct, policies aimed at improving health through promoting education will be fruitless. Recent studies aiming at identifying the causal impact of education on health draw extremely mixed conclusions. No consensus regarding this causal relationship has yet been reached. For instance, Lleras-Muney (2005), Oreopoulos (2006), Silles (2009), Kemptner, Jürges, and Reinhold (2011) uncover a causal effect of education on certain kinds of health, while studies by Arendt (2005), Albouy and Lequien (2009), Clark and Royer (2010), and Braakmann (2011) reveal no evidence for a significant causal effect of education on any of the health measures they adopt. Therefore, given where

* Corresponding author. Tel.: +86 10 6275 7260.

E-mail addresses: sxie@pku.edu.cn (S. Xie), taipingmo@gmail.com (T. Mo).

the existing literature stands, a credible explanation for the observed correlation is still required. In addition, if a positive causality exists, then any improvements in health caused by better education could allow for a reduction in national health expenditure, which would relieve the government's fiscal burden. In this sense, successfully identifying the effect of education on health could help provide more accurate estimates for the rate of return to education and, therefore, assist in the achievement of more efficient levels of investment.

Our study adds to the existing literature by investigating health returns to education in the following three respects. First, our research is conducted on data from China, while most existing investigations on the impact of education on health are from the US or the UK (Adams, 2002; Braakmann, 2011; Berger & Leigh, 1989; Lleras-Muney, 2005; Silles, 2009, etc.). Interest in other countries did not arise until recently (Albert & Davia, 2007; Albouy & Lequien, 2009; Arendt, 2005; Jürges et al., 2011; Kemptner et al., 2011, etc.). However, although this topic has been explored from different perspectives and in different countries, relevant studies in China are still rare. As far as we know, the sole study on China is Liu's (2009) doctoral dissertation in Chinese.

The rapid changes in China during the past three decades furnish us with a naturally rich laboratory for analysis. Since sweeping economic reforms commenced in 1979, China has witnessed rapid economic growth. At the same time, China's education system has also experienced remarkable development as the Chinese government has increasingly emphasized the role of education in economic and social development. A 9-year compulsory education system was officially enforced in 1986 and, in 1996, strategies aimed at developing China through science and education were initiated at the 8th National People's Congress. Through developing the education system, the Chinese government intends to comprehensively strengthen human resources and foster first-class innovative and entrepreneurial personnel, thus contributing to economic development.

Li and Huang (2009) argue that economic growth in China appears to have benefited from the government's efforts in improving education. In 2012, government expenditure on education amounted to RMB378.1 billion, accounting for 4% percent of GDP. However, have these developments in China promoted the well-being of the Chinese people? More specifically, as has been evidenced in some other countries, does education have a causal effect on individuals' health in China? This paper will attempt to answer these questions.

Our second contribution to existing literature is that we use changes that were made to the Compulsory Education Law and the enactment of the Provisions on the Prohibition of Using Child Labor in China as the instruments in our study. The instrumental variable approach is the most popular method used today to identify causal relationships. It has also been widely implemented in this particular field to examine the causal effect of education on health. Albouy and Lequien (2009) provide a thorough report of all the studies conducted before 2007 that use this approach. Since 2007, studies implementing this strategy include Silles (2009), Clark and Royer (2010), Jürges et al. (2011), Kemptner et al. (2011), Braakmann (2011), and Fonseca and Zheng (2011). Changes to compulsory education laws are the most frequently utilized instrumental variables in these studies due to the quasi-experimental nature of these types of institutional changes. This became popular following Adams' study in 2002. However, due to the complexity and discontinuity of Chinese history, it is hard to find similar instruments in China. To our knowledge, only Fang, Eggleston, Rizzo, Rozelle, and Zeckhauser (2012) use changes to the Compulsory Education Law as an instrumental variable to estimate wage returns to education in China. Following their lead, in this paper we also use the enactment of the Compulsory Education Law in China as an instrument. In addition to this, we use the enactment of the Provisions on the Prohibition of Using Child Labor in 1991 as an instrumental variable, as these provisions, which prohibit the employment of child labor, are believed to have induced greater school attendance. The results from our study show that these two institutional changes have caused significant variation in individual educational attainment; therefore, in the majority of cases they can serve as valid instruments. We believe this finding is of great value to studies on labor and health economics in China.

Finally, we also adopt more restrictive identification tests to ascertain the validity of the instruments. We suspect that the inconsistent estimates in previous studies may stem from problems with the validity of the instruments. Therefore, we believe our tests can lead to more prudent conclusions. In addition, we employ spouse's education as an alternative instrument to test the robustness of our results, as well as to overcome the potential drawbacks of quasi-experimental identification strategies.

Using data from the 1997, 2000, 2004, and 2006 waves of the China Health and Nutrition Survey (CHNS), we find that the OLS estimates show statistically significant and positive effects of education on self-reported health (SRH), overweight, and smoking. Nevertheless, these effects are relatively minor when compared with the documented market return to education in China. In addition, the possibility of getting hypertension for an individual seems not to be determined by one's education. When the endogeneity of education is considered and the instrumental variable strategy is implemented using the two institutional instruments stated above, we find no significant impact of education on either SRH or overweight. In terms of the effect on smoking habits, due to violation of the exogeneity of the two institutional changes, we cannot obtain conclusive results. Interestingly, when spouse's education is employed as the instrument, a strong and significant negative impact of education on overweight among women is found. However, in general, we do not find convincing evidence to suggest that there is a causal effect of education on the four health measures included in this paper. This may be due to the relatively low average education level and average age of our respondents, for whom the potential effect of education on health hasn't been fully realized.

The remainder of this paper is structured as follows: Section 2 describes the implementation of the Compulsory Education Law and the Provisions on the Prohibition of Using Child Labor in China; Section 3 outlines the empirical framework of our study; Section 4 introduces the data and main variables; Section 5 presents the estimation results and Section 6 concludes.

2. Institutional background

Since 1949, the education system in China has been a state-run public system. In general, the Chinese government has been keen to promote educational opportunities, especially for peasants and workers who are perceived to have a superior status in

Download English Version:

<https://daneshyari.com/en/article/5047627>

Download Persian Version:

<https://daneshyari.com/article/5047627>

[Daneshyari.com](https://daneshyari.com)