Returns to Women's Higher Education: A Review

A. Palaniammal, M.A., M.Phil.
N. Malathi, Ph.D.

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Abstract

Investing in education provides the foundation for accelerating social and economic development of nations. In addition to reinforcing social equality, reducing the gender gap by expanding educational opportunities for women is economically desirable. The rate of return to women's education is higher than that of men's education in most developing countries and for women returns increases with the level of education like men.. The average returns to an under –graduate degree is 21 percent for men and 39 percent for women The rate of return to all forms of education is positive ,in most countries and in general the rate of return to primary and secondary education is higher than the rate of return to university level education .

Introduction

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Education is the principal mechanism for developing skills, knowledge and training of human beings. Investing in education provides the foundation for accelerating social and economic development of nations. Literacy is fundamental to many state sponsored interventions in less developed countries because of its pervasive influence on economically relevant variables, such as, productivity, health and earnings, quite apart from its intrinsic value as a vitally important tool of development. In addition to reinforcing social equality, reducing the gender gap by expanding educational opportunities for women is economically desirable.

The rate of return to women's education is higher than that of men's education in most developing countries. Increasing women's education not only increases their productivity but also results in greater child health and nutrition. More educated mothers lead to multiplier effect on the quality of nation's human resources for many generations to come. As women carry a disproportionate burden of the poverty and landlessness that disturbs developing societies, significant improvements in their role and status of the education can have an important impact on breaking vicious circle of poverty and inadequate education.

Mincer's Earnings Function

There are at least three distinct ways of defining the returns to education: a) The private return, b) the social return and c) the labor productivity return. The first of these is made up of the costs and benefits to the individual. The second definition highlights any externalities or spill -over effects and includes transfer and taxes. The final definition simply relates to the gross increase in labor productivity .But the main concern of the Mincer's theory is about the positive or negative effects of private return. An individual will acquire additional education out weigh the present value of the marginal costs. Those individual who have higher benefits for lower costs will acquire more education.

The most widely used specification of empirical earnings is the Mincer equation:

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$$LnY = \beta_0 + \beta_1 S + \beta_2 X + \beta_2 X^2 + u$$

Where, LnY = Natural logarithm of earnings

S = Years of schooling (or) different levels of education
X = Work experience
β_0 = Constant
β_1 = Returns to Years of Education
β_2 = Returns to Years of Experience

The private rate of return to an investment in case of university education is:

$$\sum_{t=1}^{43} \frac{(W_u - W_s)^t}{(1+r)^t} = \sum_{t=1}^{5} (W_s + C_u)(1+r)^t$$

Where, r = rate of discount that equalize the stream of discounted
benefits to the stream of cost
$W_u - W_s$ = Earnings differential between a University Graduate and
a Secondary School Educated person
C_u = Annual direct cost of university education

$\overline{W}_s$ = Foregone earnings of University Graduate (or) Earnings from
Secondary school education

Estimation of the rate of return (r) is based on a simple formula using short –
cut method

Private $r = \dfrac{\overline{W}_u + \overline{W}_s}{n(\overline{W}_s)}$ and $Social = \dfrac{\overline{W}_u + \overline{W}_s}{n(\overline{W}_s - C_u)}$

Where, $\overline{W}_u$ = Mean earnings of an individual with university education

$\overline{W}_s$ = Mean earnings of an individual with secondary school
education
n = Length or years of university graduation
C_u = Annual direct cost of university education

Review of Literature

Earnings Function of **Mincer** (1958) is the first analytical innovation in human capital model to explain why education enhances earnings? Why earnings rise at diminishing rate in ones life? Why men earn more than women? Why white men earn more than black ones? Why unemployment is lower among the skilled labor? etc. All

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these questions and their possible answers are researched under the filed of labor economics for a long time and "human capital model" has been developed to systematized these findings.

Becker (1964) has estimated rate of returns on investment in education using cost –benefit analysis. A review of rate of return studies in 32 countries suggests the following conclusions; the private rate of return is consistently higher than the social rate of return, including that education is more profitable as an investment for the individual than for society as a whole. In general, rate of return are higher in less developed countries than in developing countries.

Psacharopoulos (1973) has shown that the return to primary education is more than that of higher education , arguing in favor of reducing the extent of subsidization as one climbs up the education ladder .But in a knowledge driven society , it is being realized that higher education is crucial for determining the competitive edge of an economy in the global market as it fosters innovation and development and dissemination of technology .In the process , it sets the stage for building up a knowledge society in the evolution of the concept of human capital ,over the decades . The stress was more on productivity gain in the first wave of human capital theory.

Thomas Fuster (1975) has analyzed movements over time in the rates of return to different levels of educational attainment .Other things being equal , the rapid rise in the proportion of the labor force with higher educational attainment would be expected to reduce the financial returns to investment in higher education , but the strong secular increase in average ability for those receiving a college education would be expected to offset any tendency for rate of return to higher education to decline . Similarly the declining proportion of the labor force with no more than a high school education would, other things being equal, be expected to result in higher returns to that level of educational attainment. But the declining average ability of non – college – bound high school seniors would tend to operate in the other direction. Hence, observed rate of returns to college or high school training

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will not necessarily be inversely related to the change in relative supply that have occurred over the last decades, since changes in relative quality tend to work in the opposite direction.

It is found out by **Malathi and Usharani** (1988) that the average annual earnings of women increases with the level of education namely, Secondary, Graduate, Post graduate and Professional degrees .The results of the fitted linear and constant elasticity type power functions using primary data of annual earnings of direct cost of educational attainment show that for every Rs .1000 increase in direct there will be an addition of Rs. 504 in annual earnings and for 10 percent increase in direct cost , there will be 10.23 percent increase in annual earnings.

Liu (1998) found that private returns to education are between 3 percent and 6 percent. Earnings are higher in public sector than in the sector while the estimated rates of returns to education are similar in these two sectors .An analysis of the direct effect on the earnings and the rate of returns to education during labour market contract system and the floating wage scheme reveal positive and significant association between earnings and these two reform measures .More over the wage reform (floating wage scheme) is found to have raised the rate of return to education significantly .

Blundell et.al (1999) show educational qualifications have positive effects on both employment and wages, and estimated returns to these educational qualifications can be downward biased if there is self selection into employment by comparative advantage. Men completing a higher education qualification in biology, chemistry, environmental sciences or geography have substantially lower returns to higher education than the base group of graduates. For women returns increases with the level of education like men and the average returns to an under graduate degree is 21 percent for men and women and 39 percent   for women controlling for ability at age seven, region, school type, family background, demographic characteristics and various other features of the job such as employer size. Unionization reduced the

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estimated returns to around 17 percent for men and 37 percent for women. Nonetheless, it is clear that the returns appear substantial even when controlling for other factors. The returns to higher degrees were generally lower than those to undergraduate degrees, but still statistically significant.

Nasir and Nazil (2000) have examined returns to education, at different levels of education namely primary, middle, intermediate. BA/BSC and professional. They conclude that each education year brings approximately 7 percent returns for wage earners. Returns are found to be associated with higher levels of education and 7 to 8 percent increase in earnings is attached with an additional year of schooling.

Harmon et al, (2001) has analyzed the impact of educational attainment on individual wages at the micro economic level of Labor market outcomes leaves very little doubt that schooling has significant and quantitatively large positive effects on earnings, labor force participation rates and employment probabilities. Recent research suggests that an additional year of schooling increases wages at the individual level by around 6.5 percent across European courtiers and that this effect can be as high as 9 percent in EU members with less regulated labor market where pay scales presumably reflected productivity more closely.

Chevalier and Conlon (2002) suggest that investment in education is carried on until the current value of the future earnings associated with the level of education is equal to the cost of that year of education. The cost can be split between the direct cost of education (fess) and the foregone earnings (wages that could have been earned during that extra year of education). In addition to differences in the returns to education the preferences and time spent in employment could explain the attainment gap by gender. Women's greater participation in higher education is consistent with higher returns to education for women. But this positive effect is weakened by working life and possibly a higher discount rate.

James J Heckmen (2008) the internal rate of return to schooling is fundamental economic parameter that is often used to assess whether expenditure on education should be increased or decreased. The paper considers alternative

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approaches to estimating marginal internal rates of return for different schooling levels. The authors implement a general non parametric approach to estimate marginal internal rate of return that takes into account tuition costs and income taxes and nonlinearities in the earnings schooling experience relationship. The returns obtained by the more general method differ substantially from Mincer returns in level and in their time series patterns. They indicate relatively large returns to graduating from high school and to graduating from college, which have both been increasing over time.

According to **Patrinos** (2009) social rates of return to education are lower than private returns due to the addition to the calculations of publicly financed costs of education. Estimation of returns presupposes that markets function efficiently and that earnings are reliable measures of productivity at the margin. It is not necessarily a realistic assumption in places where large proportions of wage and salary earners are employed by the public sector. Estimates also take no account of the external benefits of education i.e., the benefits of an individual's education for their people or for society in general.

http:// www.bls.qov/cps/cps wom. (2010) shows that in 2009, Asian women who were full time wage and salary workers had higher median weekly earnings than women of all other races / ethnicities as well as African American and Latin men. Education a factor in income statistics show that higher degrees lead to higher median salaries. Earnings of women with college degrees have increased by 33.0 percent from 1969-70 to 2008-2009.For master degrees earnings of women is estimated to rise from 13.3 percent to 52.3 percent by 2009-2020; they are projected to increase to 55.7 percent. Between 1980 and 2010, the percent of women with four or more years of college rose from 13.6 percent to 29.6 percent.

Conclusion

The rate of returns to women's higher education is higher than that of men's. Women's education not only increases their productivity but also results in greater child health and nutrition. The private rate of return is consistently higher than the

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social rate of return and rate of return is higher in less developed countries than developed countries. Thus higher education is crucial for determining the competitive edge of an economy in the global market.

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A. Palaniammal, M.A., M.Phil.
Ph.D. Research Scholar
Department of Economics
Annamalai University
Annamalainagar - 608 002
Tamilnadu
India

N. Malathi, Ph.D.
Professor and Head
Department of Economcis
Annamalai University
Annamalainagar - 608 002
Tamilnadu
India

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