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Training Externality

And Earning's Dispersion

Abstract

This paper investigates the spillover effect of training within a firm on the wages inequality. Firstly, our paper evaluates how training externality affects the earnings' dispersion, but also what is the contribution of the training externality on wage inequality, between and within workers who receive or do not received training. Secondly, the article proposes to test the idea that training externality might be a criterion of labour market segmentation.

As literature on education considers a transmission effect between children of the same class (Benabou (1996)), our article investigates also knowledge and competencies exchanges between workers of the same firm. Average human capital of the firm is introduced in the individual accumulation of human capital, so in the output function. Consequently, training investment of a firm has a direct effect on wages by increasing trainee's productivity but also an indirect impact. Actually, training increases average human capital of the firm and then can rise productivity and wages of every employees. A training externality is then considered. Furthermore, our paper sets as Benabou (1996) that average human capital is a ESC function. The complementary degree of individual human capital in the firm can promote or restrict the training spillover. This assumption leads us, on the one hand, to take into account the human resources policy of the firm. The training externality is decomposed according to the qualification level of the trained workers in the firm (the most qualified, from all qualification levels, other cases). On the other hand, the population of trainees and non trainees are distinguished.

Empirical results on French data sets (Formation Continue 2000) confirm the existence of training externality and its differential impact on wages, according to the workers who are selected to be trained by the employer, and between trainees and non trainees.

Considering this impact on wages, the focus of the paper is then to analyse how training externality affects wage inequality.

The report of OECD (1999), which study training across OECD countries, stressed that "half of the earnings gap between those who received training and those who did not is due to the fact that firms providing training pay higher salaries in any case, the second half of the gap being related to factors that have a simultaneous impact on the probability of access to training and on earnings." (Hanchane and Silber (2006). What is then the impact of training externality in the earnings gap? And how can we measure it?

Hanchane and Silber (2006) have introduced "a methodology that allows estimating the exact impact of training on the dispersion of wages. It uses an approach originally proposed by Fields (2003) but extends it to the breakdown of inequality by population subgroups as well as to the case where the earnings function that is at the base of the analysis has to be adjusted for selectivity bias." Their estimations on French data sets "Formation Continue 2000" "show first that when a distinction is made between workers who received training and those who did not, the between groups dispersion explains only 5.5% of the overall variance of earnings. [They] also found that more than one third of this between groups variance was explained by the combined effect of the unobserved heterogeneity and the distinction between those who received and did not receive on-the-job training. […] Most of the earnings dispersion however turned out to be a within groups dispersion and more than two thirds of this within groups variance of the logarithms of earnings could be explained by the variables that were taken into account." (Hanchane et Silber (2006)). These variables are the level of education, the type of occupation for the two subgroups, and the unobserved heterogeneity for the trainees.
Our paper assumes then that training externality may be some of this unobserved heterogeneity and can then explain a part of the earning' dispersion.

Firstly, theoretical model is exposed to justify the role of the training externality on wages and on wage dispersion. Secondly, the methodology of Hanchane and Silber (2006) is applied and the variables of training externality are introduced in the model. Thirdly, empirical work of Hanchane and Silber (2006) is then done considering, on the one hand two groups, firms who train or do not train other workers, and on the other hand, three groups, firms which train the most qualified workers, firms which train workers from all qualification levels, and firms which doesn't train.