

**The determinants of training investments by firms:
coverage, intensity and specificity
Empirical evidence from two provincial Italian datasets**

Giovanni Guidetti and Massimiliano Mazzanti
Department of Economics Institutions and Territory
University of Ferrara

The paper studies the determinants of training investments by firms using two unique cross-sectional datasets at provincial level. Since the empirical literature on training at firm level is scarce, due to the costs and the intrinsic difficulty of collecting high-quality and extensive data, the paper value added is that it adds knowledge on the issue in providing new empirical evidence on the relationships between firm training decisions and firm characteristics at Italian level. Relevant information is gathered by two questionnaires administered to firm management in years 2002-2003 in the Province of Ferrara, on 243 firms, and in the Province of Reggio-Emilia, on 167 firms, both located in the Emilia-Romagna Region. The two surveys, based on diversified questionnaires, provide extensive information on the following key elements: existence and typology of formal and on the job training, firm performance, HRM practices, skill content of the workforce, tenure, labour flexibility. The main structural features of firms are also covered by the surveys. The applied analysis uses different econometric models to explore the linkages between training decisions and possible explanatory factors of training at firm level. Training is specified as the dependent variable in a reduced form econometric model using different proxies for training investment decisions: first, binomial indexes assessing whether a firm has invested in formal and/or informal training; secondly, indexes of coverage representing the percentage of workers involved in formal training; third, indexes of training intensity set up by using diverse information on formal training decisions; finally, indexes capturing the degree of specificity associated to training investments.

The potential determinants of training here analysed compounds structural characteristics, labour demand dynamics, human resource management practices, workforce features, firm performances. The availability of an extended dataset on firm characteristics allows controlling for many relevant factors which may explain training decisions, reducing the possible distortions arising in a cross-sectional environment.

Econometric analysis is carried out as it follows. A binomial probit model is first used to assess what elements drives the decision of investing in formal and informal/on the job training. The literature nevertheless highlights that more important than investing or not in training is the amount of training each firm effectively pursue. Thus, given a large percentage of firms declaring not to invest in training are present in our dataset, tobit and two-stage Heckman models are implemented and compared in order to show whether the decision concerning the amount/intensity of formal training (proxied by specific training indexes and percentage of workers involved in formal training) provided is driven by different factors if compared to the determinants of the first stage decision of investing/not investing. Finally, a bivariate probit model is structured to analyse whether the decisions of investing in informal and formal training are independent or correlated dynamics as far as firms are concerned. The exogeneity of key explanatory factors is also tested.