

Overeducation and wages: the role of cognitive skills and personality traits

Marta Palczyńska

In the last three decades many countries experienced fast improvement in human capital. On the one hand, this investment in human capital is viewed as positive for the economic development but, on the other hand, it raises concerns about the capacity of the economy to make good use of the growing highly skilled workforce. Overeducation arises when qualifications of a worker are higher than qualifications required by his or her job. It might have serious consequences both for individuals and the society: overeducation is associated with wage penalties and job dissatisfaction. The natural question arises if the overeducation wage penalty is a result of differences between workers in productive characteristics other than education or rather matching inefficiencies. Numerous studies focused on estimating the incidence of overeducation and the size of wage penalty connected with it. However, few studies looked at the differences in cognitive and non-cognitive skills between overeducated and well-matched workers with the same level of education, although previous research has provided evidence that non-cognitive skills not only predict wages but also influence the probability of becoming overeducated.

This article investigates the role of personality traits and cognitive skills as potential determinants of overeducation and in explaining overeducation wage penalty. It uses a representative survey of the Polish working-age population (the Polish Follow-up Study to the Programme for International Assessment of Adult Competencies – postPIAAC) conducted in 2014-2015. The dataset includes well-established measures of cognitive skills and personality traits. The cognitive skills measures come from the PIAAC study and include: literacy, numeracy and problem solving in technology-rich environments. Personality is measured by self-reported scales: the Big Five Inventory and the short Grit scale. I use OLS and propensity score matching (PSM) methods.

I find that accounting for personality and cognitive skills does not change the size and the statistical significance of overeducation wage penalty estimates. My results also demonstrate that personality is one of the contributors to the risk of being overeducated among workers aged 18 to 29 but not among people aged 30 to 68. Among younger workers agreeable individuals are more likely to be overeducated while conscientious ones are less likely. Moreover, lower cognitive skills are associated with the probability of being overeducated. Although non-cognitive and cognitive skills are associated with the probability of being overeducated, the differences in the analysed skills between overeducated and well-matched workers seem too limited to account for a substantial part of the overeducation wage penalty. It is rather matching inefficiencies which account for the overeducation.

The complete results of my research are published in the article:

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