The use of numeracy skills at work: Explaining skill utilization and income effects

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This article attempts to explain skills mismatches in numeracy and its relationship to qualification mismatches against the backdrop of the vocational specificity of the Austrian education system which is hierarchically stratified and strongly segmented by occupational fields. It focuses on numeracy skills and how frequently these skills are used in the workplace. Rather than using a strict measure of skill mismatch in terms of skill surpluses and shortages, a relative measure of skill utilization is employed that indicates the skill use in relation to the individual skill level. The measure of vocational specificity reflects the extent to which holders of different educational programs as defined by the level and field of the qualification obtained empirically disperse or concentrate over different occupational groups.

The results suggest that the difference between formally mismatched workers and adequately qualified workers are rather explained by the use of numeracy skills in the workplace than by the numeracy skill level. Hence the productivity of overqualified workers is limited by the characteristics of their less demanding jobs. These workers suffer a wage penalty and are at risk of becoming deskilled, especially if underutilization is a permanent state. Underqualified workers seem to exploit their skill reservoir to a high degree, which supports the "supermatching" interpretation rather than pointing at serious skill shortages. Workers who have attained educational certificates with a high vocational specificity on average have higher levels of numeracy skills and utilize these skills to a larger extent compared to workers with more general qualifications. Both the individual skills and its use in the workplace independently affect wages, whereas employees with high levels in both dimensions benefit the most.

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