

## Examining the Ways that Numeracy Skills and Soft Skills are Related to Occupational Status: The Case of U.S. Workers

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Policymakers are increasingly concerned that employees need both foundational skills, such as numeracy, and soft skills, such as planning and influence skills, to be successful in the 21st century economy. Empirical research has demonstrated that high-paying jobs increasingly require soft skills. In particular, literature has documented a higher growth rate of wages over the past three decades for U.S. workers with high social skills and high mathematics skills compared to workers with high mathematics skills yet low social skills (Deming, 2017).

There is little empirical research that examines whether foundational skills, such as numeracy and soft skills, have independent or interactive relationships with occupational status. Our study expands the literature on the importance of soft skills in the labor market. In particular, our paper addresses the following research questions:

1. After controlling for foundational skills as measured by PIAAC's numeracy assessment, are soft skills significantly related with workers' occupational status?
2. Are the relationships between soft skills and occupational status different at various levels of proficiency in numeracy?

The soft skills measures that are positively correlated with occupational status are (a) *Readiness to Learn*; (b) *Influence*; (c) *Planning*; and (d) *Task Discretion*. Based on our analysis of PIAAC data, we find that all four self-reported measures of the use of soft skills at work have statistically significant, positive relationships with an employee's occupational status—and that these relationships are independent of numeracy skill. We also estimate interaction effects between numeracy skill proficiency and all four aspects of soft skills. We find that of the four soft skill types, two (planning and influence) have significantly different relationship to the occupational status between workers with low and high numeracy proficiency. That is, workers with low-numeracy skills tend to be in occupations with more occupational prestige if they more frequently exercise planning or influence skills at work (compared to workers with high numeracy proficiency). Independent of soft skills, workers with higher levels of numeracy skills also tend to have higher occupational status.

Our paper echoes previous literature on the importance of soft skills in today's labor market, gauging from the angle of occupational status. Our findings also show that it may be especially important to promote soft skill development among workers with lower levels of numeracy proficiency. This suggests that policymakers may need to promote soft skills, in addition to focusing on basic skills education in math. Future research may build on our preliminary findings by distinguishing different soft skill domains and examining independent effects of those domains to further inform policy discussions about national efforts at soft skill formation.