

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

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Why Numeracy and Soft Skills?

- Skills gap in the U.S. labor market
 - Lumina Foundation and The Economist Unit
 - Survey of nearly 350 business executives
- Employers want both foundational and soft skills
 - “Applied mathematics and reading”
 - Collaboration and teamwork
 - Communication
 - “Adaptability and managing of multiple priorities”

What Do We Mean by Soft Skills?

- Various referred to as:
 - Noncognitive skills
 - Personality traits
 - Socialization
 - Social skills
- Human capital theory
 - Historically called “soft” because hard to measure

What Do We Know about Skills?

- Credentials are signals/proxies of skills
 - Conflate foundational and soft skills
- Foundational skills are positively related to occupational outcomes
- Soft skills are positively related to occupational outcomes
- With PIAAC we try to tease these skills apart

How Do We Measure Skills?

In the current study

- Foundational skills
 - PIAAC numeracy scores
- Soft Skills
 - Index variables from background questionnaire items about work
 - Influence
 - Planning
 - Task discretion
 - Readiness to learn

How Do We Measure Occupational Outcomes?

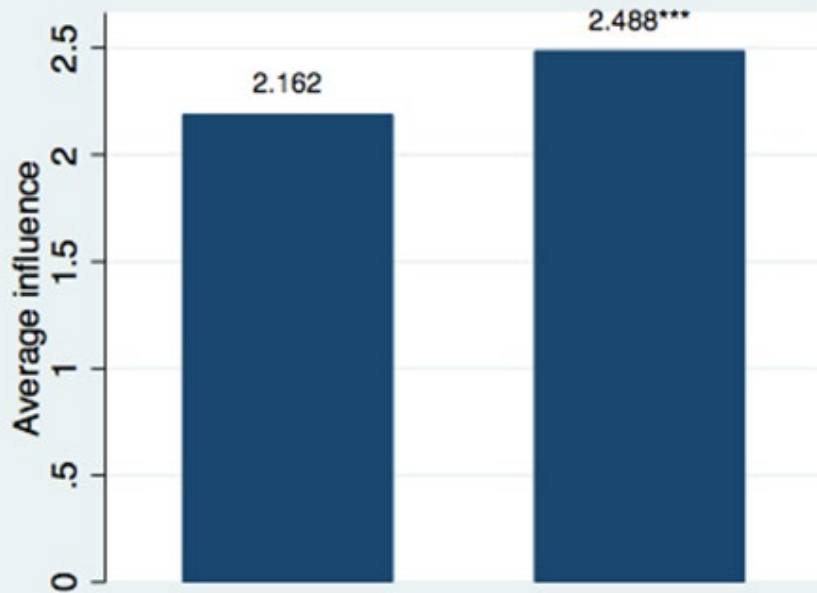
- Coded occupational status based on two-digit occupation codes
 - Ganzeboom and Treiman's (2010) International Stratification and Mobility File
 - More holistic measure than earnings or compensation
 - Measures the ways that human capital operates *through* occupations

Analysis and Findings

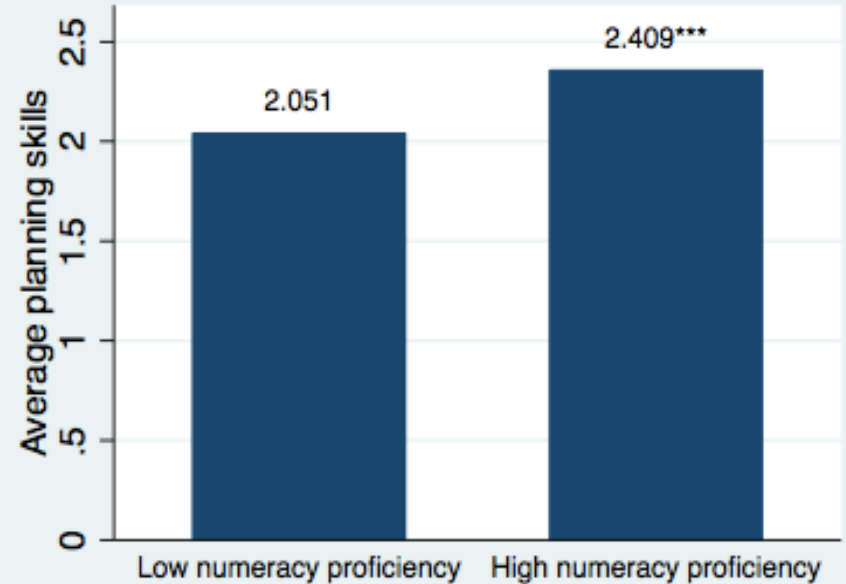
- After controlling for foundational skills as measured by PIAAC's numeracy assessment are soft skills significantly related to workers' occupational status?
 - Yes, positive relationships
 - Each of the four soft skills are independently related to occupational status
 - When all four soft skill are together, *influence* is still significant

Analysis and Findings

Low Numeracy High Numeracy



Low Numeracy High Numeracy



Analysis and Findings

- Are the relationships between soft skills and occupational status different at various levels of proficiency in numeracy?
 - Yes, interaction effects between numeracy proficiency and two soft skill measures.
 - It may be especially important to promote soft skill development among workers with lower levels of numeracy proficiency

Implications

- Policymakers may need to promote soft skills, in addition to focusing on basic skills education in math
- May consider distinguishing different soft skill domains
 - Examine independent effects
 - Inform policy discussions about national efforts at soft skill formation

Ongoing Work

- Adding four-year college credential to the model
- Using different outcome: earnings
 - Workers with four-year degrees use soft skills more frequently at work
 - Statistically significant interaction between four-year degree and *task discretion*

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