

The Importance of Skills and Majors in Determining Future Earnings

Karly Ford and Junghee Choi

1. Summary of the research questions

The purpose of this study is to better understand the relationship between college majors and earnings, while considering the possible role of cognitive skills, measured as numeracy and literacy in this study. While the knowledge and skills conferred by an academic major are tightly connected to certain fields and areas (hereafter “major-specific skills”), cognitive skills refer to general skills that can be developed and applicable independent of fields and areas. The existing literature, media narratives, and policy discussions tend to focus on the seemingly tight connection between academic major and earnings, but it is possible for earnings to vary according to differences in cognitive skills. More specifically, our research questions are as follows:

- Do cognitive skills explain within-major heterogeneity in earnings?
- How do cognitive skills interact with major-specific skills to explain earnings?

2. Findings and Discussion

- On average, among the graduates of the same academic major, higher levels of numeracy and literacy are associated with higher earnings.
- Separate analyses by academic major indicate that numeracy is significantly associated with higher earnings for humanities, social sciences, and STEM majors, and literacy is significantly associated with higher earnings for humanities, social sciences, and health majors.
- There are interactional effects between majors and cognitive skills to explain earnings. That is, relative to education majors, earnings and numeracy are more strongly related for humanities, social sciences, and STEM majors, and earnings and literacy are more strongly related for humanities, social sciences, and health majors.

3. Policy/practice implications

- While earnings are in no way the most important outcome for higher education, students do consider potential economic outcomes in their decisions for academic majors. Accounting for the role that cognitive skills can play in the majors-earnings relation can better inform students and advisers on choice of academic major.
- Designing policy based solely on simple short-term relationships between majors and earnings may not increase the efficiency of higher education funding as measured by graduates’ earnings.
- Higher education institutions should value the development of students’ cognitive skills, as they are connected to students’ economic success following graduation, beyond differences in major-specific skills.