

Skills among young adults in Sweden

The aim of this study ...

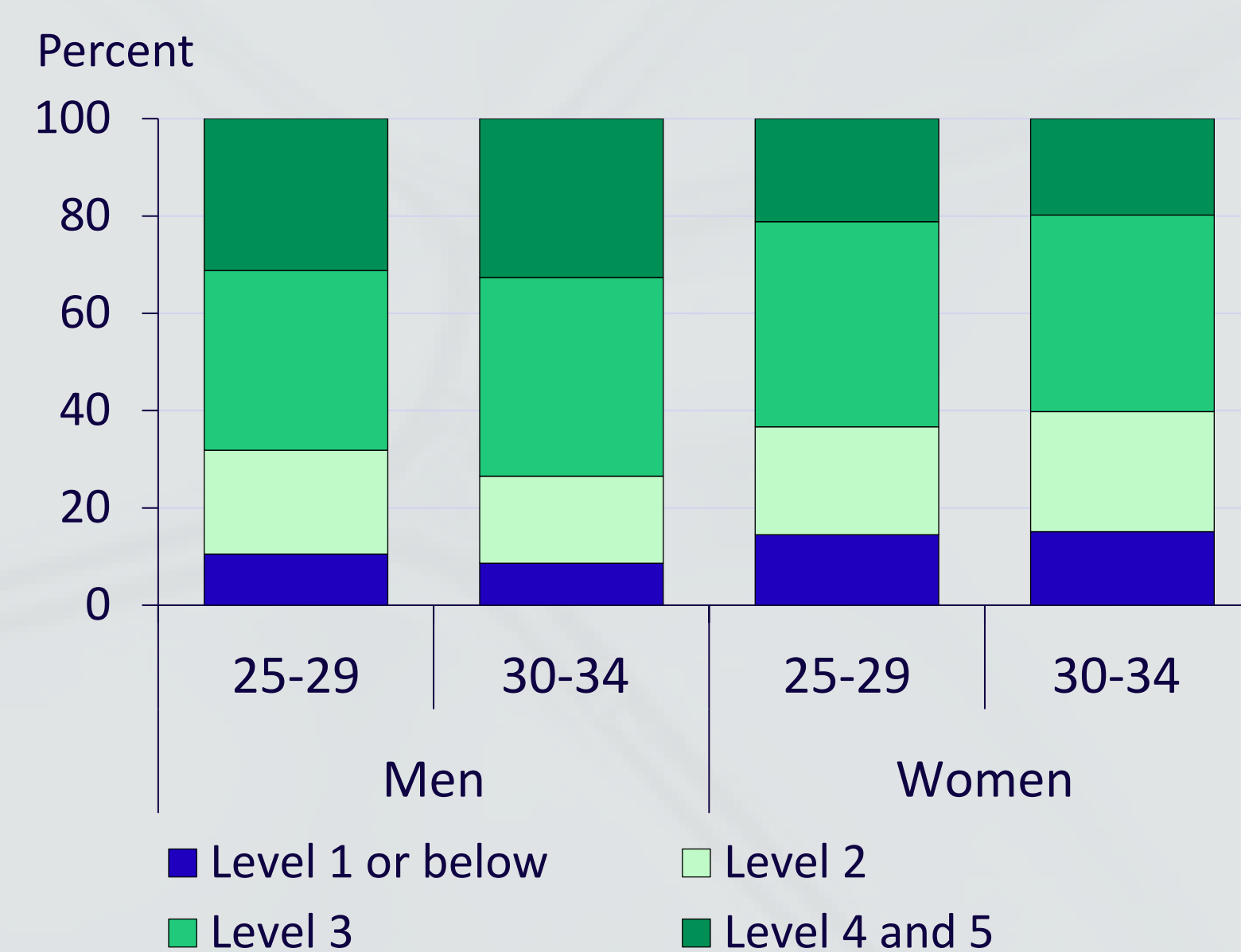
... is to investigate disparities in numeracy skills among young adults in Sweden.

Using PIAAC data, the study examines the relationship between early academic achievement, measured by grade point average at the end of lower secondary school, and numeracy skills in adulthood. The focus is on adults aged 25-34, a stage of life when most individuals have completed upper secondary education and many have entered higher education or the labour-market, experiences that may contribute to skill development.

What do these findings suggest? ...

... early skills matter, but they are not destiny. Numeracy skills continue to be shaped through further education and learning opportunities in adulthood. A key question for future research is why some individuals with low achievement in compulsory school later reach high levels of numeracy proficiency. Longitudinal analyses combining school records, tertiary education, and labour-market experiences could help identify the factors associated with these positive trajectories.

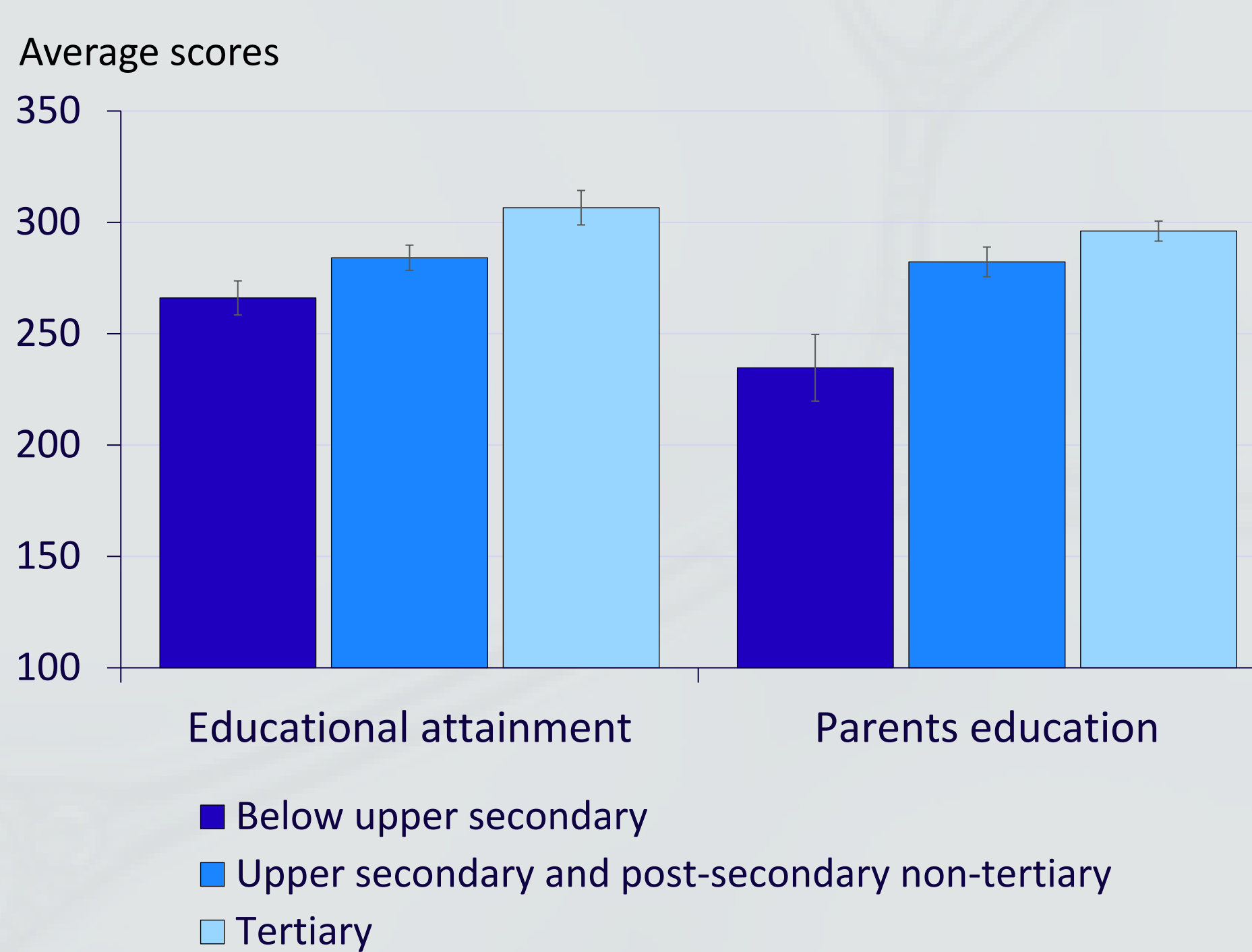
Shares within numeracy skill levels by age and gender



Higher numeracy skills among men

Men score higher on average than women and are more likely to reach the highest numeracy skill levels in both age groups. The difference is most evident among 30-34-year-olds, where the gender gap is significant. One possible explanation is differences in educational pathways. Among higher education graduates in 2024, 42% of men and 16% of women, had completed studies in engineering, science, or manufacturing, fields with extensive use of numeracy.

Average numeracy skills among 16-34-year-olds



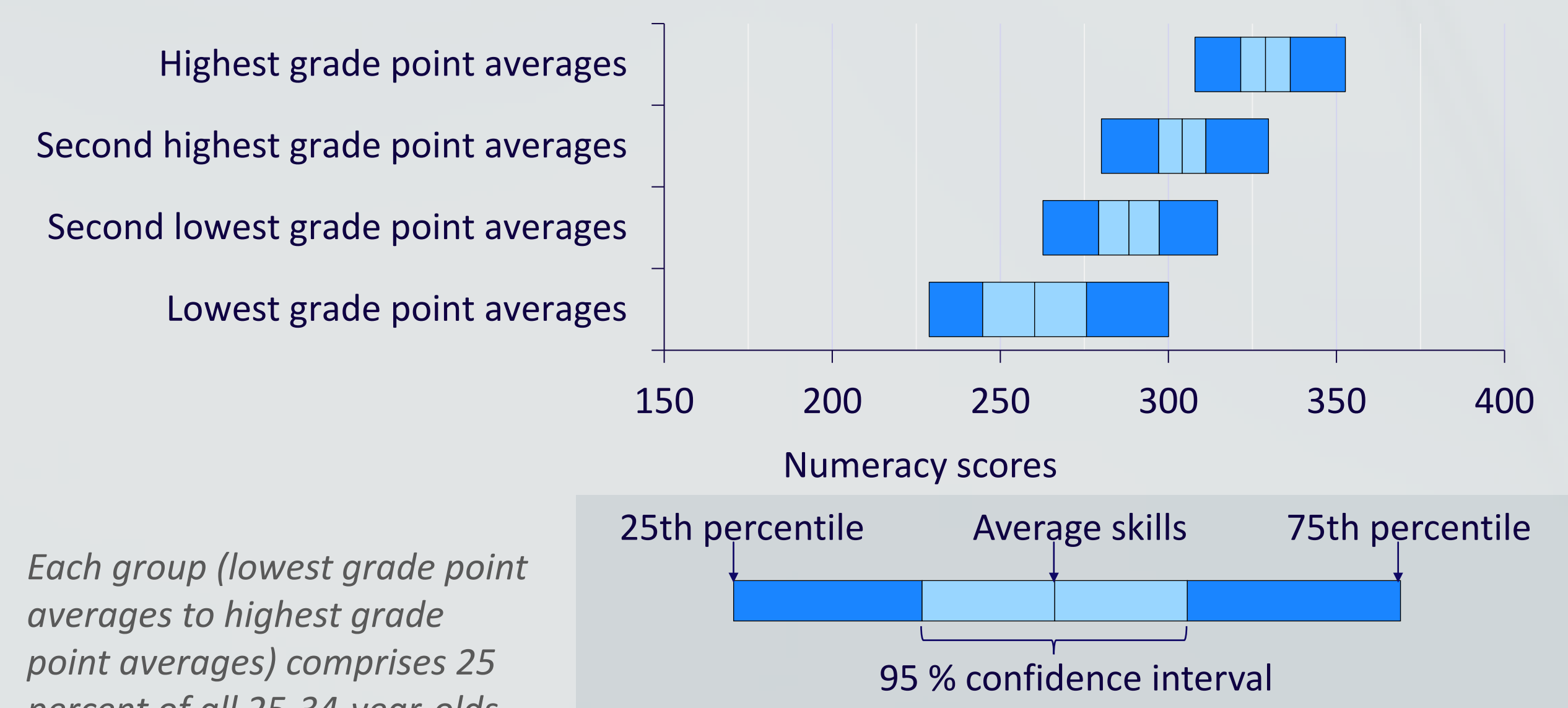
Educational attainment matter ...

... as average numeracy skills increase with educational attainment. A similar pattern is observed for parental education. Young adults whose parents have below upper secondary education show markedly lower average numeracy scores. Most also have below upper secondary or upper secondary education themselves, and around two-thirds have an immigrant background.

Early school achievement ...

... matters but does not fully determine numeracy skills later in life. Average numeracy scores increase steadily with lower secondary school grade point average (GPA), with significant differences between all GPA groups. At the same time, 25% of individuals with the lowest GPAs score above 300 points in numeracy, corresponding to proficiency level 3 or higher.

Average skills increase with higher GPA from lower secondary school
Adults in the age of 25-34 years who attained lower secondary education in Sweden



Numeracy skills among 25-34-year-olds are positively associated with early skills, measured as grade point averages from completing lower secondary education

One percentile higher grade point averages from attaining lower secondary school ***

Foreign born compared to native born *

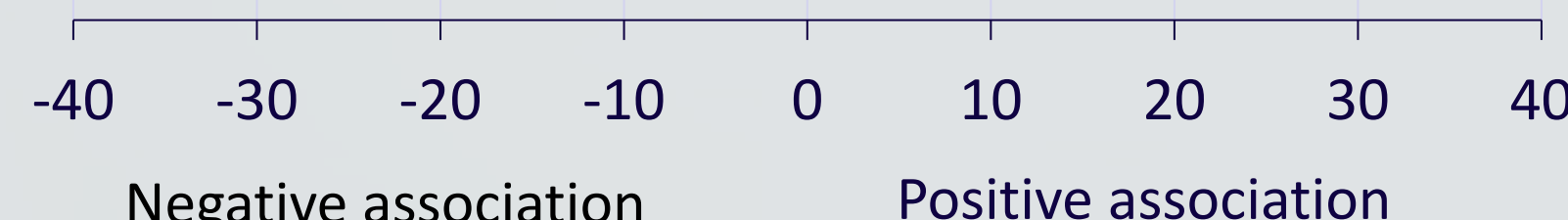
Women compared to men ***

Parents with below upper secondary compared to parents with upper secondary

Parents with post-secondary compared to parents with upper secondary

Post-secondary education compared to upper secondary

Tertiary education (3 years or longer) compared to upper secondary ***



The model explains 36 percent of the variation in numeracy skills among 25-34-year-olds. Asterisks indicate statistical significance: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

Early skills remain important ...

... even after accounting for educational attainment and other background characteristics. Numeracy skills increase by about 7 points for each percentile increase in GPA from end of compulsory school. Individuals with tertiary education (3 years or longer) score significantly higher than those with upper secondary education, indicating continued skill developing beyond compulsory schooling. Gender and immigrant background differences remain after adjustment.

Source: International survey of adult skills (PIAAC 2023). Information on GPA from lower secondary school were obtained from Statistics Sweden's education register.

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