

Health and cognition at work: Labor market performance of males and females in a low income setting

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Abstract

A large body of literature documents that taller people are more successful in the labor market, particularly in lower income settings. Several explanations have been proposed to explain this height premium. One group of studies suggests that height is rewarded because it is a marker of strength, which is thought to be a highly valuable trait in very low income settings. Other work indicates that height is a proxy for cognitive ability as well as family background, health, self-esteem, and other indicators of human capital. A third set suggests that employers use height as a signal about the quality of workers. There is no consensus in the literature regarding the relative importance of each of these potential mechanisms.

This paper explores each of the mechanisms in a unified framework. We draw on uniquely rich longitudinal survey data from Central Java, Indonesia that was specifically designed to provide the evidence-base necessary to distinguish among these hypotheses. We focus on the role human capital plays in predicting success in the labor market for both men and women, highlighting height, cognition, education and their interactions. Relying on several key features of the survey, this work complements and extends the literature in a number of ways.

First, in addition to measures of the attained height of individuals, the survey includes a broad array of health markers that are likely to be related to labor market performance. These include BMI, a commonly used indicator of strength, as well as iron deficiency, adiposity, hypertension, and energy measures that have been associated with economic productivity. The survey also contains multiple measures of cognitive achievement using a number of different batteries, several of which have been repeated in an effort to reduce measurement error. This is particularly important in studies that examine the relationship between height, which is measured with very little error, and cognition, which is seldom measured without substantial error in a household survey setting. The survey also collects detailed information about educational attainment, including scores on standardized tests, as well as measures of social skills and preferences.

Previous work in this area widely acknowledges that human capital and family background are highly correlated. As such, failure to control family background when examining human capital and labor market performance substantially complicates interpretation of the relationships between height, cognition, and earnings. To overcome this obstacle, our models

include an extensive set of measures of the human capital and economic resources of all parents and all siblings, including those no longer alive. In addition, for a sub-sample of respondents, the rich array of human capital indicators described above are measured not only for the target individual, but also for parents and siblings.

Third, the survey collects extremely detailed information on labor market behaviors and outcomes every three months over a four year period. This includes work status, sector of work, employer and occupation, nature of work, and earnings in both the formal and informal sector. If education, height, or cognition are used as a signal by employers, the premium associated with each measure of human capital should differ depending on whether the individual works in the wage or self-employed sectors. However, comparisons of individuals who choose to work in one sector or the other is complicated to interpret without taking into account their sectoral choice. One advantage of the longitudinal structure is that we observe many of the respondents working in each sector at different times during the study period, and some respondents working in both sectors at the same time. This substantially contributes to identifying the differential effect of height, cognition, and education on labor market performance in each sector. The survey also includes information about the length of tenure with a specific employer. The value of the signal in each measure of human capital is likely to decline as tenure increases. Thus, the study is ideally suited to test the signaling hypothesis with respect to human capital markers as well as to other, difficult to observe characteristics, such as family background.

Fourth, if the height premium reflects the role of strength, there should be sorting of taller males into occupations where strength is valued, holding cognition constant. This hypothesis has been extremely difficult to test as few studies contain good measures of both height and cognition. Our survey is unusually rich in this respect. Further, few females work in occupations that require strength and so comparisons between males and females provides additional insights into the role of height in labor market performance across gender.

Motivated by a number of hypotheses in the literature, the reward to height in the labor market should vary in a systematic way with cognition and education in our models. By testing these implications, we provide new evidence on the extent to which height, cognition and education are complements in different sectors of the labor market and across the income distribution in Indonesia. In addition to contributing to a better understanding of the complex relationships between different indicators of human capital and labor market performance, this research provides important insights into the functioning of labor markets in a low income setting.