



The Role of Physical Job Demands and the Physical Work Environment in Retirement Outcomes

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Dramatic changes in life expectancy in recent decades, coupled with only small changes in the eligibility age for claiming retirement benefits, have tended to increase the proportion of an individual's life spent in retirement. This phenomenon has slowed labor force growth and presents challenges to the financial sustainability of Social Security and other public programs. One potential policy response is to encourage older individuals to work longer, for example, by raising the eligibility age for claiming Social Security retirement benefits. However, increasing the incentives to delay retirement does not automatically translate into all older individuals being able to work longer even if they are willing. The effectiveness of such policies will ultimately depend on factors such as the individual's health and the nature of job demands at work, particularly physical job demands as the age-decline in functional physical abilities of workers accelerates starting in the mid-40s. Understanding how physical job demands and the physical work

environment influence the decision to retire is fundamental for the design of more targeted policies. For example, if encouraging longer working lives is a policy goal, improving physical working conditions and alleviating excessively physical activities of jobs may prove effective in delaying retirement among certain population subgroups.

In this paper, we examine how physical job demands (e.g., lifting, stooping, crouching) and the physical work environment (e.g., exposure to heat, cold, humidity, noise) influence the timing of retirement, and how this relationship differs by gender, age, and education among individuals nearing retirement in the United States. Using rich information on job requirements from the Occupational Requirements Survey (ORS), we first study the structure and properties of ORS data and implement robust strategies to address missing data on job traits across occupations coded at the four-digit census code level. We then compare individual items of physical job demands and the

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physical work environment with similar metrics from the Occupational Information Network (O*NET) to identify ORS job requirements that exhibit good statistical properties and concurrent validity with O*NET data. Using validated job requirements only, we construct an average index of physical job demands and an average index of the physical work environment, and merge them with individual-level data from the Health and Retirement Study (HRS) using census occupation codes at the four-digit level. We then estimate multivariate linear probability models to explore how physical job demands and the physical work environment predict whether an individual is retired or not in a given period, as well as whether a full-time worker in a given period transitioned into full-retirement the next period. Finally, we study how these associations between job demands and retirement vary by gender, age, and education.

We find that physical job demands are more predictive of early retirement than the physical work environment, though both indices are positively associated with the probability of being retired as well as retirement transitions. In particular,

a one standard deviation (SD) increase in our index of physical job demands is associated with a 10 percentage point (pp) increase in the probability of being retired, and with a 1.8 pp increase in the probability of transitioning into retirement. In turn, a 1 SD increase in our index of physical work environment is associated with a 7 pp increase in the probability of being retired, but it is not related to retirement transitions. This latter result depends critically on including physical job demands as a control variable in the regression, as the two indices are highly positively correlated with one another. We also find that physical job demands and the physical work environment are consistently more predictive of retirement and retirement transitions for men than women, for older rather than younger workers, and for workers without a college degree rather than with a college degree.

Our results suggest that, if encouraging working longer is a policy goal, targeting improvements in physical working conditions and alleviating excessive physical burdens more prevalent in less-skilled jobs may prove effective. ❖

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