Smog in Aging Brains:
The Impact of Exposure to Air Pollution on Cognitive Performance

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Abstract

This paper examines the effect of both cumulative and transitory exposures to air pollution for the same individuals over time on cognitive performance by matching a nationally representative longitudinal survey and air-quality data in China according to the exact time and geographic locations of the cognitive tests. We find that long-term exposure to air pollution impedes cognitive performance in verbal and math tests. We provide the first evidence that the effect of air pollution on verbal tests becomes more pronounced as people age, especially for men and the less educated. The damage on aging brain by air pollution likely imposes substantial health and economic cost considering that cognitive functioning is critical for the elderly to both running daily errands and making high-stake decisions.

Keywords: cognitive decline; air pollution; aging; gender difference

JEL Codes: I24, Q53, Q51, J16