ARTICLE

Parental Education Level and Child Cognitive Ability: An Analysis Based on Evidence from the China Education Panel Survey

Jindian Liu,[1,2] Mingwang Cheng,[3] Chunyan Wu[1]

1. *Northwest A&F University, Xianyang 712100, Shaanxi, China*
2. *Shaanxi Normal University, Xi'an 710062, Shaanxi, China*
3. *Tongji University, Shanghai 200092, China*

***Abstract**: Drawing on the data from the China Education Panel Survey, the article investigates the effects of parental education level on child cognitive ability using descriptive statistics and quantitative analysis. Research findings of the study reveal that parental education level is significantly and positively related to child cognitive ability, with a greater impact on the cognitive ability of girls than boys, and that its effects on the child's cognitive ability decline as the latter improves. The analysis of mediation effects shows that parental education level affects child cognitive ability via its impact on home educational expectations and investment.*

Best Evidence in Chinese Education 2025; 19(1):1923-1926
DOI: 10.15354/bece.25.ar141

How to Cite: Liu, J., Cheng, M., & Wu, C. (2025). Parental education level and child cognitive ability: An analysis based on evidence from the China education panel survey. Best Evidence in Chinese Education, 2025, 19(1):1923-1926.

***Keywords**: Cognitive Ability, Parental Education Level, Social Mobility, Social Status, Cultural Capital*

About the Author: *Jindian Liu, College of Economics & Management, Northwest A&F University, Xianyang 712100, Shaanxi, China; & Teacher Development Research Institute, Teacher Development College, Shaanxi Normal University, Xi'an 710062, Shaanxi, China*

Mingwang Cheng, School of Economics & Management, Tongji University, Shanghai 200092, China. E-mail: walkercheng@163.com

Chunyan Wu, Institute of Higher Education, Northwest A&F University, Xianyang 712100, Shaanxi, China.

Correspondence to*: Mingwang Cheng at Tongji University in China.*

Conflict of Interests*: None*

Funding*: No funding sources declared.*

AI Declaration*: The authors affirm that artificial intelligence did not contribute to the process of preparing the work.*

© 2025 Insights Publisher. All rights reserved.

Creative Commons NonCommercial CC BY-NC: This article is distributed under the terms of the Creative Commons Attribution-NonCommercial 4.0 License (http://www.creativecommons.org/licenses/by-nc/4.0/) which permits non-commercial use, reproduction and distribution of the work without further permission provided the original work is attributed by the Insights Publisher.

Introduction

BASED ON the data from the China Education Panel Survey (CEPS), this study aims to examine the relationship between parental education level and child cognitive ability using the methods of descriptive statistics and quantitative analysis. Also discussed are the gender and urban-rural differences in the relationship as well as other factors influencing it. The purpose of this article is to provide policy implications for managing the disparities in cognitive ability among children with parents of distinct education levels and for curbing the "Matthew effect" in socioeconomic development.

Research Methodology

Source of Data

This study sources data from the CEPS. The survey establishes the 2013-2014 academic year as the baseline year, focusing on students in grades seven and nine. Through stratified random sampling, a sample of approximate 20,000 students was selected from 438 classes in 112 schools in 28 county-level regions across China. The content of the survey spans information on the class, school, family, as well as students' personal information and academic performance. After the handling of missing values, 13981 students were included as subjects in this study.

Analysis Models and Variables

The study creates a multiple linear regression model for a thorough analysis of the effects of parental education level on child cognitive ability. In this model, the core explanatory variables are the parents' years of education, including the maximum years of education of either parent, the average years of education of two parents, the years of education of the father, and the years of education of the mother. These variables are key indicators of parents' education level, measured by the number of years. The child's cognitive ability is the dependent variable, measured by the standardized scores from the 3PL cognitive ability test.

For a more accurate estimate of the effect of parental education level on child cognitive ability, this study sets control variables, including the personal characteristics of the child (such as gender, age, ethnicity, and being the only child or not), family-related characteristics (such as the type of Hukou, the number of books in the home, economic status, and after-school tutoring support), and school-related characteristics (such as school quality and class quality). In addition, the study introduces educational expectations

(such as parents' expectation of child academic performance) and parent-child interaction as mediating variables to implement an analysis of potential mediation effects.

Research Findings

(i) There is a significant positive correlation between parental educational level and child cognitive ability. The child's cognitive ability can improve by 0.019 points with one-year increase in the maximum years of education of either parent. That implies that better-educated parents are more likely to have children with greater cognitive ability and that the disparities in education level in parents may lead to the gaps in cognitive ability among their children. (ii) Parental educational level affects child cognitive ability via educational expectations and investment. Parental expectations of child academic performance and education level, the child's own expectation of their education level, and parent-child companionship all have partial mediating effects with statistical significance. (iii) Parents' education level has a greater impact on the cognitive ability of girls than boys. Urban parents' education level, compared with that of their rural counterparts, has greater effects on child cognitive ability. The disparities in education level among urban parents can cause wider gaps in cognitive ability in their children. As the child's cognitive ability enhances, the impact of parental education level on it will decline. That means the impact of parental education level on child cognitive ability is greater among children with lower cognitive ability.

The Chinese version of this article has been published in Education and Economy, 2024; 40(4):56-68. The English version has been authorized for being publication in BECE by the author(s) and the Chinese journal.

刘金典, 程名望, & 吴春燕. (2024). 父母受教育水平与子女认知能力—来自中国教育追踪调查的经验证据. 教育与经济, 40(4):56-68.

Received: December 10, 2024
Revised: December 19, 2024
Accepted: January 09, 2025