

The Role of Education in Urbanization: An Empirical Study Based on China's Provincial-Level Panel Data from 2005 to 2020

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Abstract: *Urbanization is a crucial factor in economic growth and common prosperity and thus an inevitable pathway to a nation's modernization. To achieve the goal of common prosperity of Chinese society as a whole, it is imperative to enhance the education level of its farmers, accelerate the construction of the new countryside, and develop modern, large-scale agriculture, so as to liberate more farmers from the agricultural labor and allow them to enter the secondary and tertiary sectors of economy that provide higher incomes. This study seeks to verify the promotional effect of education on the urbanization level by utilizing the provincial-level panel data from 2005 to 2020 in China. The two-way fixed effects model is adopted in the analysis. Research findings include that: (i) Investment in education has substantial promotional effects on the urbanization level; (ii) Economic growth and technological advancement significantly advances the progression of urbanization; (iii) The development level of the region can moderate the impact of education on urbanization.*

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Introduction

Education is one of the major drivers for Urbanization. Educational Advancement leads to the increased agricultural productivity, liberating more farmers from agricultural labor, who can move to cities or start up their own businesses in towns, thus promoting the development of towns. In the meantime, the enhanced quality of education contributes to the improvement of comprehensive competence of individuals, facilitating the migration of the rural population and its adaptation to urban life. Existing research largely used the average years of education as a proxy variable for the development level of education, with few studies focusing on the impact of investment in education on the urbanization level. Research into the relation between investment in education and urbanization is of significant practical implications, potentially providing relevant evidence for policy makers.

Analysis Framework

Push-Pull-Mooring Migration Model

The push and pull theory is an important theory in population migration research, which describes human migration as the result of joint effects of the push from the native place and the pull from the targeted destination (Dorigo & Tobler, 1983). Mooring factors refer to the intervening obstacles, both personal and social, that undermine the migration intention of individuals and retain them in the original residence. They are related to personal needs for stable life, psychology, and relationships. To choose to migrate, the individual needs to forgo the stable state of life.

Paths of the Impact of Education on the Urbanization Level

Drawing on Bruce Moon's push-pull-mooring migration model, this study analyzed the three paths through which education affects the urbanization level: (i) Educational development helps boost the productivity of rural areas, so reducing the demand for agricultural labor and increasing the migration intention of rural population; (ii) Educational development offsets the effect of mooring factors on the migration of individuals to certain extent, thus promoting the urbanization of the population; (iii) Education contributes to enhancing the attraction of the city and strengthening its convergence effect, so increasing the pull of urban areas in terms of migration.

Research Design

Variables and Sources of Data

Dependent Variable

This study used the urbanization rate of permanent residents as the proxy variable for the urbanization level of each province, measured by the statistical caliber of urban permanent residents/total permanent residents.

Core Independent Variable

The average years of education of the labor force served as the core independent variable to represent the quantitative characteristics of a region's stock of human capital. Investment in education was the proxy variable for the region's overall quality of education. The study derived data in this regard from the *China Educational Expenditures Statistical Yearbook*, which includes various types of educational expenditures such as national fiscal education funds, publicly budgeted education funds, organizational investment, and social donations in each province. Investment in education is proportionate to the size of the population of the region. Given that, this study calculated the per capita educational expenditure by dividing total educational expenditure with the population of registered residence, which entered the model for regression.

Control Variables

Control variables for this study included per capita regional gross domestic product (GDP), the number of patents, the industrial structure optimization index, the proportion of foreign direct investment (FDI) in GDP, and the proportion of total import and export in GDP.

Results of the Analysis

i. Regression Results Based on the Core Independent Variable as a Quantitative Index

Without incorporating any control variable, the average years of education had no significant impact on the level of urbanization. With control variables included, the average years of education in test and those of the next year still had no effect on the urbanization rate. Among aforementioned control variables, only per capita GDP and the number of patents had significantly positive impacts on the urbanization level. The average schooling years of the year after the next significantly affected the urbanization rate.

ii. Regression Results Based on Both the Quantitative and Qualitative Indexes

The per capita educational expenditure had a significantly positive effect on the urbanization rate. The per capita GDP and the number of patents could remarkably and positively impact the urbanization level. At the same time, the average years of education, the proportion of FDI in GDP, and the share of import and export in GDP had no substantial effect on the urbanization level.

iii. Non-linear Relation between Education and Urbanization

When other conditions controlled, the lower the city's economic growth rate, technological level, and industrial structure optimization index, the more promotional effect the education expenditure had on urbanization.

Conclusion

Using provincial-level panel data from 2005 to 2020 in China, this study examined the impact of education on urbanization, taking into consideration the quantity and quality dimensions of education. Based on the analysis results, it reached conclusions as follows: (i) The quality of education is more fundamental to the rise of urbanization level than the stock of human capital; (ii) Economic growth and technological advancement can significantly advance the progression of urbanization; (iii) The development level of the region can moderate the promotional effect of education on urbanization..

Reference

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