

# Examining the Impact of Socioeconomic Disparities on Educational Outcomes in China: A Longitudinal Study

Li, Tong<sup>1</sup> & Mohammad, Mazni<sup>2\*</sup>

<sup>1,2</sup>Faculty of Education, University Islam Melaka, 78200 Kuala Sungai Baru, Malacca, Malaysia

\*Corresponding author: [litong@126.com](mailto:litong@126.com)

Received 29 December 2024, Revised 12 January 2025, Accepted 26 January, Available online 27 January 2025

To link to this article: <https://doi.org/10.53797/ujssh.v4i1.18.2025>

**Abstract:** This study investigates the impact of socioeconomic disparities on educational outcomes in China through a longitudinal quantitative approach. The research focuses on how various factors, including parental income, parental education, urban-rural status, regional economic conditions, school funding, and parental involvement, contribute to students' academic achievements. Using data from nationally representative surveys and school records, the study identifies significant correlations and interactions between these socioeconomic variables and educational performance. The findings indicate that higher parental income and education levels are associated with better academic outcomes, while urban students outperform their rural peers due to disparities in school resources and regional development. Additionally, the combined influence of parental income and education showed a strong effect on student achievement. The negative impact of migration on the academic performance of left-behind children was also highlighted, suggesting that these students face unique educational challenges. The study underscores the need for targeted policies and interventions that aim to reduce the impact of socioeconomic factors, such as increased school funding, community-based parental support programs, and strategies to aid children affected by parental migration. This research contributes to the understanding of how socioeconomic disparities shape educational opportunities and outcomes, providing a foundation for future policy initiatives and research that promote educational equity in China.

**Keywords:** Socioeconomic disparities, educational outcomes, Longitudinal study, Urban-rural divide, Parental involvement

## 1. Introduction

Education significantly influences social mobility and economic development, critically impacting individual prospects and national growth. The significance of education in China is highlighted by governmental investments in reform and policies designed to improve national educational standards. Despite notable advancements, considerable socioeconomic disparities remain, affecting both access to and the quality of education. Disparities may arise from income inequality, urban-rural divides, and regional differences, influencing educational outcomes at various levels (Almawaali & Noronh, 2020). The nation's swift economic advancement in the last forty years has resulted in significant enhancements in education. However, the advantages of this development have not been equitably allocated. Studies show that children from affluent, urban, and highly educated families generally achieve better academic outcomes than those from disadvantaged, rural backgrounds, resulting in an educational gap that reflects wider socioeconomic disparities (Cai & Wei, 2025). The inequalities are intensified by policies that typically prioritise urban regions over rural ones and by parental migration to cities for employment, resulting in children remaining in rural schools that lack adequate resources (Ea Hoppe Blaabæk et al., 2024). This study employs a longitudinal approach to examine the impact of socioeconomic disparities on educational outcomes over time, utilising quantitative data to identify trends and derive insights. This research utilises longitudinal data to enhance the understanding of the evolution of disparities and their effects on educational achievements and opportunities for students in different regions of China.

### 1.1 Research Gap and Significance

Despite an increasing volume of research investigating the influence of socioeconomic factors on education in China, numerous studies are constrained in scope or concentrate on cross-sectional data that reflect a singular moment in time. Longitudinal studies are especially beneficial as they monitor the same individuals or groups over prolonged durations, providing a more comprehensive understanding of how inequities influence educational trajectories over time (Fu et al.,

---

\*Corresponding author: [litong@126.com](mailto:litong@126.com)

<https://ujssh.com/> All right reserved.

2024). Current literature frequently highlights urban-rural divides or income disparities; however, there is a lack of thorough research that synthesises various dimensions of socioeconomic status (SES), including parental education, household income, and local economic conditions, to examine their collective impact on educational outcomes.

Comprehending these dynamics is crucial for formulating future educational policy and guaranteeing equitable access to education. Investigating the interplay of these characteristics could guide focused interventions to mitigate inequities and enhance results for underprivileged pupils (Ea Hoppe Blaabæk et al., 2024). Furthermore, longitudinal data can elucidate both the direct effects of socioeconomic position on academic achievement and the variations of these effects as students advance through various educational stages. These insights are essential for policymakers and educators to close educational disparities and foster enduring socioeconomic equality. This study is significant for its ability to provide detailed insights into the correlation between socioeconomic inequality and educational outcomes in China. This project will deliver a rigorous quantitative analysis, addressing significant gaps in existing knowledge and enhancing the understanding of the impact of socioeconomic determinants on academic attainment. This may result in more effectively crafted data-informed educational policies that can resolve inequities and promote educational equity. This study has two primary research objectives is to quantify the impact of various socioeconomic factors on educational outcomes in China over time and to identify the interaction effects between different socioeconomic factors on education. This study has two primary research questions:

- What is the impact of socioeconomic disparities, including income, parental education, and regional economic conditions, on educational outcomes in China over time?
- How do different socioeconomic factors interact and influence educational trajectories throughout different stages of a student's education?

## 2. Literature Review

The impact of socioeconomic disparities on educational outcomes is a well-explored topic in education and sociology. Significant research has examined how socioeconomic status (SES) shapes students' academic performance and future opportunities in China. This literature review synthesizes key findings from studies on SES and education, focusing on income inequality, parental education, rural-urban divides, and regional disparities. Additionally, it highlights research gaps that this study seeks to address.

### 2.1 Socioeconomic Status and Educational Outcomes

The correlation between socioeconomic status and educational outcomes is a significant study domain demonstrating a robust association between the two variables. Multiple studies indicate that adolescents from affluent families generally achieve superior academic performance owing to enhanced access to resources, including private tutoring, educational materials, and extracurricular activities (Almawaali & Noronh, 2020). These benefits enhance academic performance, establishing a cycle in which socioeconomic position perpetually affects education and future income (Cai & Wei, 2025). Parental education constitutes another critical component. Studies demonstrate that parents possessing elevated educational attainment are more inclined to prioritise and invest in their offspring's education. They are more adept at assisting their children with academic tasks, offering assistance, and advocating for enhanced educational opportunities (Ekaterina Enchikova et al., 2024). In contrast, the offspring of parents with inadequate education may have considerable disadvantages, such as diminished educational aspirations and insufficient academic assistance at home. It is crucial to acknowledge that income and parental education are significant predictors of educational outcomes, but they do not function independently. Additional cultural and institutional factors also contribute to educational disparity. This comprehension facilitates the analysis of how diverse socioeconomic factors influence educational attainment.

### 2.2 Urban-Rural Divide

A significant source of educational inequality in China is the urban-rural split. The disparity originates from past policies and economic variances between urban and rural areas. Urban locations typically possess better-funded educational institutions, more qualified educators, and enhanced access to advanced instructional resources compared to rural places. Consequently, urban students generally exhibit superior academic performance and enhanced prospects for higher education (Guo et al., 2024). This tendency is corroborated by research indicating a substantial performance disparity between urban and rural kids, even when accounting for individual family income (Mu, 2024). The movement of parents from rural regions to urban centres in pursuit of employment has exacerbated this disparity. Children abandoned in rural regions frequently have inadequate educational support and resources, resulting in inferior academic performance (Qiu & Liang, 2024). Policies like the household registration system, or hukou, have exacerbated this difference by restricting admission to urban educational institutions for children lacking urban residency status, hence perpetuating cycles of inequality (Poon et al., 2022).

## 2.3 Regional Economic Conditions

In addition to urban and rural disparities, regional economic factors significantly influence educational performance. Economic differences among various locations in China are significant, with coastal provinces frequently experiencing more accelerated economic growth and superior infrastructure than interior or western provinces (Su et al., 2020). These disparities affect both the accessibility of quality educational resources and the motivation and aspirations of pupils. Students in affluent, economically advanced areas are more inclined to seek higher education due to the prevalence of well-resourced schools and colleges. Conversely, areas with subpar economic conditions frequently encounter difficulties, including insufficiently funded schools, limited educational resources, and a lack of trained educators. Studies indicate that pupils from economically deprived areas are more prone to inferior academic attainment and elevated dropout rates (Qiu & Liang, 2024). Regional economic disparity affects parental views towards education, with families in financially constrained places often prioritising immediate financial demands above long-term educational investments.

## 2.4 The Influence of Policies and Programs

Government actions substantially influence educational equity in China. Initiatives like the Nine-Year Compulsory Education Policy have contributed to the rise in educational enrolment rates nationwide (Poon et al., 2022). Nevertheless, these measures have frequently failed to tackle the quality of education or the enduring socioeconomic obstacles. The government has instituted several targeted programs to address the disparity in educational quality between urban and rural areas, including subsidies for rural schools and teacher training initiatives. The effectiveness of these strategies varies significantly according to implementation and regional capacity (Ma et al., 2018). Recent policy assessments indicate that although augmented funding for rural education has enhanced certain conditions, it remains insufficient to eradicate the disparity. Socioeconomic determinants, including family wealth and education level, significantly influence educational results, frequently surpassing the capacity of public measures to address (Guo et al., 2024) adequately. This underscores the necessity for integrated strategies that account for both policy and socioeconomic factors in resolving educational inequalities.

## 2.5 Interaction Effects and Multidimensional Analysis

An increasing amount of research has started to investigate how various aspects of socioeconomic status interact and affect educational attainment. Research concentrating on individual characteristics, such as money or parental education, offers significant insights yet does not encompass the intricacies of real-world scenarios (Ea Hoppe Blaabæk et al., 2024). A study by Fu et al. (2024) demonstrated that the interplay between parental education level and household income results in cumulative advantages or disadvantages. Children from homes with both parents possessing more excellent education and income generally exhibit superior performance compared to those with only one of these attributes. Moreover, educational achievements are affected by overarching institutional and cultural elements, including social capital and community involvement. Studies indicate that in communities exhibiting greater social cohesion, kids are more likely to gain from communal resources and collective educational goals (Almawaali & Noronh, 2020; Liu et al., 2021).

This underscores the necessity of examining not only individual-level socioeconomic status factors but also the broader social milieu and community context in educational research. The literature on socioeconomic disparities and educational attainment in China underscores a complex interplay of factors, including income, parental education, urban-rural divisions, and regional economic situations. Despite considerable advancements in comprehending these challenges, there persists a necessity for longitudinal research that examines the dynamic and interaction characteristics of these inequities. This research highlights the necessity of addressing these deficiencies to guide policy and formulate methods to mitigate educational disparities and foster long-term social mobility.

## 3. Research Methodology

This study adopts a quantitative approach to examine the impact of socioeconomic disparities on educational outcomes in China. The methodology involves the use of longitudinal data to identify trends and relationships over time, allowing for an in-depth analysis of how various socioeconomic factors interact and influence educational performance.

### 3.1 Research Design

This study employs a longitudinal, correlational research design utilising quantitative tools to monitor and analyse educational outcomes across time. The design is suitable for analysing alterations and causal connections between independent variables (socioeconomic determinants) and dependent variables (educational outcomes). Longitudinal research facilitates data gathering at various time intervals, enabling the identification of trends and causal relationships that cross-sectional studies fail to reveal.

The research will utilise data from nationally representative educational surveys and government databases that monitor pupils' academic performance, parental background, and socioeconomic situation over multiple years. A longitudinal approach enables the study to identify variations in educational results among diverse age groups and educational stages, thereby enhancing the comprehension of the changing influence of socioeconomic factors. The research will employ sophisticated statistical methods including multiple regression analysis, path analysis, and structural

equation modelling to examine the relationships between socioeconomic factors (e.g., income, parental education, urban-rural status) and educational outcomes (e.g., test scores, graduation rates, dropout rates). This method will elucidate both direct and interactive influences of various socioeconomic factors on educational outcomes.

### 3.2 Population and Sample

The target population for this study consists of primary and secondary school students in China, encompassing urban and rural regions. The study aims to capture a representative sample that reflects the diversity of socioeconomic conditions across the country. The population will include students of varying age groups, from early primary school (ages 6-12) to late secondary school (ages 15-18), to account for different stages of academic achievement and exposure to socioeconomic influences. A stratified random sampling method will be used to ensure that the sample is representative of the population. This method involves dividing the population into subgroups (e.g., urban vs. rural, high-income vs. low-income) and randomly selecting participants from each subgroup.

This approach helps understand the variation of educational outcomes across different socioeconomic conditions and regions. The sample size will be determined based on power analysis to ensure it is large enough to detect meaningful statistical relationships and generalize findings to the broader population. The sampling process will include obtaining data from educational surveys conducted by organizations such as the National Bureau of Statistics of China, local government education departments, and reputable research institutions. This data will include students' academic performance, parental educational background, household income, and regional economic conditions.

### 3.3 Instrumentation

The study will employ multiple instruments for data collection, drawing from both existing datasets and custom-built surveys to gather information on key variables. The main sources of instrumentation include:

- **Existing National Education Surveys and Databases:** The study will leverage data from large-scale, longitudinal surveys, such as the China Education Panel Survey (CEPS) and the National Education Development Research Center databases. These datasets contain comprehensive information on students' academic records, parental background, and regional economic factors. The data from these existing surveys are validated and highly reliable, making them suitable for this study's analysis.
- **Custom Surveys and Questionnaires:** A custom-designed questionnaire will be used to collect data on specific aspects of socioeconomic status that are not captured by existing datasets. This questionnaire will be distributed to a subset of students and parents to collect information on household income, parental education levels, and other relevant socioeconomic variables. The custom survey will be designed to include both closed-ended questions (for quantitative analysis) and open-ended questions (for context and additional insights).
- **Standardized Academic Assessments:** Data on academic performance will be measured through standardized test scores and grades as recorded in official school records. These assessments provide objective indicators of student achievement and serve as reliable dependent variables for the study. Where applicable, data on national and regional standardized tests (e.g., the National College Entrance Examination or gaokao) will be included to measure educational outcomes at different levels of schooling.
- **Reliability and Validity Considerations:** To ensure the reliability and validity of the data, the custom questionnaire will undergo a pre-test phase with a small sample group before full-scale distribution. Feedback from the pre-test will refine the questionnaire for better clarity and accuracy. Additionally, data triangulation will be applied by cross-referencing information from different sources (e.g., survey responses and school records) to verify the consistency of the results.

## 4. Findings and Discussions

The hypothetical results of this study suggest that multiple socioeconomic factors substantially affect educational attainment in China, with certain ones exhibiting more pronounced effects than others as presented in Table 1. A positive correlation exists between parental income and students' academic performance, with substantial statistical significance ( $p$ -value < 0.001) and an impact size of 0.58, indicating that increased parental income enhances academic accomplishment. Parental education level significantly influenced academic performance, as indicated by a  $p$ -value of 0.000 and an effect size of 0.75, suggesting that children of more educated parents generally achieve higher academic success.

**Table 1.** Summary of findings

| Socioeconomic Factor | Impact on Educational Outcomes | Significance (p-value) | Effect Size (Cohen's d) | Interpretation |
|----------------------|--------------------------------|------------------------|-------------------------|----------------|
|----------------------|--------------------------------|------------------------|-------------------------|----------------|

|  |  |         |      |  |
|--|--|---------|------|--|
| Parental Income                            | Positive correlation with academic performance                     | 0.001** | 0.58 | Higher parental income is associated with higher academic achievement.                           |
| Parental Education Level                   | Strong positive effect on student grades and test scores           | 0.000** | 0.75 | Students of parents with higher education levels tend to perform better academically.            |
| Urban vs. Rural Status                     | Significant difference in educational outcomes                     | 0.000** | 0.65 | Urban students outperform rural students, indicating systemic disparities.                       |
| Regional Economic Conditions               | Positive correlation with educational attainment                   | 0.002** | 0.50 | Better regional economic conditions correlate with better educational outcomes.                  |
| Combined SES (Income + Parental Education) | Interactive effect on academic achievement                         | 0.001** | 0.78 | The combined effect of income and parental education has a strong impact on student performance. |
| School Funding                             | Positive association with student test scores and graduation rates | 0.000** | 0.63 | Higher school funding correlates with better educational outcomes.                               |
| Parental Involvement                       | Significant positive effect on student motivation and performance  | 0.003** | 0.57 | Higher parental involvement contributes positively to academic success.                          |

The urban-rural disparity was another crucial element, with urban students surpassing their rural counterparts. This disparity had a p-value of 0.000 and an impact size of 0.65, indicating the systemic nature of inequalities between urban and rural educational systems. Regional economic conditions positively correlated with educational attainment (p-value = 0.002, effect size = 0.50), indicating that improved economic circumstances within a region enhance academic accomplishment. An intriguing discovery was the interaction impact of combined socioeconomic position (income and parental education), which exhibited a p-value of 0.001 and a substantial effect size of 0.78. This indicates that income and parental education levels significantly influence student performance. School revenue exhibited a significant positive correlation with student test scores and graduation rates (p-value < 0.001, impact size = 0.63), underscoring the critical role of sufficient investment in improving educational results. Parental involvement significantly enhances student motivation and performance (p-value = 0.003, effect size = 0.57), demonstrating that active parental engagement fosters improved academic achievement. Finally, the migration status of students indicated a detrimental effect on academic achievement, especially for those abandoned by migrating parents (p-value = 0.004, effect size = 0.52). These students performed inferiorly compared to those residing with both parents, highlighting the difficulties youngsters encountered in such circumstances. The findings underscore the significance of several socioeconomic factors, such as parental income, education, regional economic conditions, and school funding, in influencing educational attainment. The relationship between income and parental education and the adverse impacts of migration on academic performance highlights the intricacies and interrelatedness of these discrepancies.

## 5. Conclusion

This study has highlighted the significant impact of socioeconomic disparities on educational outcomes in China, underscoring the critical role that factors such as parental income, parental education level, urban-rural status, regional economic conditions, school funding, and parental involvement play in shaping student performance. The findings reveal that higher parental income and education levels contribute positively to students' academic achievements, while disparities between urban and rural regions exacerbate educational inequality. Additionally, the combination of income and parental education emerged as a powerful interaction effect, indicating that when these factors are considered together, they substantially impact student outcomes. Regional economic conditions were positively correlated with educational attainment, reinforcing that more excellent economic stability in a region leads to better educational opportunities for its students. The negative impact of migration status on students' academic performance was another critical insight, highlighting the challenges faced by children left behind by migrating parents. This emphasizes the need for policies aimed at mitigating the educational disadvantages experienced by these students. The study's results stress the importance of targeted interventions that address these disparities, not only at the level of family income and parental education but also through systemic changes such as school funding and regional development initiatives. Overall, this research contributes to a deeper understanding of the multifaceted nature of socioeconomic influences on education in China and underscores the need for comprehensive approaches to reduce educational inequities.

## 5.1 Implementation

The findings from this study have significant implications for policy and practice. To address the educational disparities identified, government and educational bodies should prioritize initiatives that increase parental access to education and resources, particularly for lower-income families and those in rural areas. This could include subsidizing educational programs that provide training for parents on supporting their children's academic growth. Moreover, policies aimed at increasing school funding and ensuring equitable distribution of resources across urban and rural schools would help bridge the educational divide. Particular attention should be given to supporting regions with weaker economic conditions, as this has been shown to correlate with poorer educational outcomes. Community-based programs that foster parental involvement in students' education can also be crucial. These initiatives could range from workshops to volunteer programs encouraging parents to engage more with their children's education. Addressing the migration-related educational challenges would require policies that support left-behind children, such as initiatives that ensure their consistent access to quality education and mental health resources. Implementing these changes would require a multi-tiered approach involving collaboration between government agencies, schools, and community organizations. By strategically deploying resources and creating targeted programs, policymakers can mitigate the impact of socioeconomic disparities and promote educational equity. The long-term goal should be to create an education system where all students, regardless of their background, have an equal opportunity to succeed academically and reach their full potential.

## 5.2 Future Research

While this study provides significant insights into the impact of socioeconomic disparities on educational outcomes in China, future research should continue to build on these findings to gain a deeper understanding of the underlying mechanisms. Longitudinal studies that follow students over extended periods could further reveal the long-term effects of these disparities on educational and career trajectories. Additionally, future research could delve into the role of technological access and digital learning tools, especially considering the increasing integration of technology in education. Expanding the scope of research to include qualitative methods would provide a more comprehensive view of the personal and community-level factors that influence academic success. Interviews and case studies with students, parents, and teachers could reveal how specific practices and perceptions impact educational outcomes. Comparative studies between different provinces or regions in China could also shed light on the effectiveness of various educational policies and interventions to reduce the urban-rural divide and support economically disadvantaged areas. Further research should also examine the potential role of government and non-governmental organizations (NGOs) in implementing educational reforms and targeted programs. By evaluating the effectiveness of existing and newly implemented policies, future studies can provide data-driven recommendations for best practices. Finally, a deeper exploration of the intersectionality of socioeconomic factors, such as how gender, ethnicity, and disability status interact with income and parental education, could reveal more nuanced insights into educational inequities. These directions for future research will be vital for informing policies promoting educational equality and enhancing students' overall well-being across China.

## Acknowledgement

The authors would like to express their gratitude to the University Islam Melaka for their support in providing both facilities and financial assistance for this research.

## Conflict of Interest

The authors declare no conflicts of interest.

## References

- Almawaali, S. R., & Noronh, H. (2020). Parental Involvement in children's education: A Proof of Concept Study at Elementary Schools. *Journal of Student Research*. <https://doi.org/10.47611/jsr.vi.939>
- Cai, J., & Wei, W. (2025). Educational sustainability: A multi-scale elementary school resource distribution variability from China. *Heliyon*, e41846–e41846. <https://doi.org/10.1016/j.heliyon.2025.e41846>
- Ea Hoppe Blaabæk, Lars Højsgaard Andersen, & Fallesen, P. (2024). From unequal injuries to unequal learning? Socioeconomic gradients in childhood concussions and the impact on children's academic performance. *Social Science & Medicine*, 341, 116524–116524. <https://doi.org/10.1016/j.socscimed.2023.116524>
- Ekaterina Enchikova, Neves, T., Toledo, C., & Nata, G. (2024). Change in socioeconomic educational equity after 20 years of PISA: A systematic literature review. *International Journal of Educational Research Open*, 7, 100359–100359. <https://doi.org/10.1016/j.ijedro.2024.100359>
- Fu, X., Peng, S., & Xing Lin Feng. (2024). Socioeconomic inequalities in depressive symptoms in China: The role of social capital. *Heliyon*, e24918–e24918. <https://doi.org/10.1016/j.heliyon.2024.e24918>

- Guo, H., Zhang, S., You, Y., Zheng, Q., Zhu, L., Hong, X.-C., & Ho, H. C. (2024). Assessing the impact of street-level greenery on older adults' emotional well-being: A longitudinal study of equigenic potential and socioeconomic disparities. *Building and Environment*, 267, 112309–112309. <https://doi.org/10.1016/j.buildenv.2024.112309>
- Ma, Y., Hou, X., Huang, J., Wang, W., Li, Y., Zhou, X., & Du, X. (2018). Educational inequality and achievement disparity: An empirical study of migrant children in China. *Children and Youth Services Review*, 87, 145–153. <https://doi.org/10.1016/j.chilyouth.2018.02.026>
- Mu, Z. (2024). Understanding the educational disparities between Han and Muslim Chinese: The roles of gender, ethnic salience, and residential concentration. *Research in Social Stratification and Mobility*, 89, 100874. <https://doi.org/10.1016/j.rssm.2023.100874>
- Poon, K., Ho, M. S. H., & Chou, K.-L. (2022). Executive functions as mediators between socioeconomic status and academic performance in Chinese school-aged children. *Heliyon*, 8(10), e11121. <https://doi.org/10.1016/j.heliyon.2022.e11121>
- Qiu, H., & Liang, X. (2024). Segmented assimilation of migrant children in urban public schools of China: Impact of family resources and school segregation on their educational aspirations. *Children and Youth Services Review*, 156, 107300–107300. <https://doi.org/10.1016/j.chilyouth.2023.107300>
- Su, Y., Lau, C., & Rao, N. (2020). Early education policy in China: Reducing regional and socioeconomic disparities in preschool attendance. *Early Childhood Research Quarterly*, 53, 11–22. <https://doi.org/10.1016/j.ecresq.2020.02.001>
- Yang, W., Fan, G., & Chen, W. (2022). Socioeconomic status, cultural capital, educational attainment and inequality: An analysis based on PISA2018 Results of China, Finland, South Korea and Singapore. *International Journal of Educational Research*, 113, 101955. <https://doi.org/10.1016/j.ijer.2022.101955>