

From Inland to Coastal: The Current Situation of Regional Educational Inequality and the Challenges of Globalization

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Abstract. This study examines the impact of globalization on the educational disparity in China, focusing on how the flow of capital, talent, and technology has contributed to the differences between the eastern coastal areas and the central and western inland regions. It further sorts out the practical difficulties encountered in narrowing this gap. Recent research shows that regional inequality in China follows a clear "coastal–inland gradient." When considering hard metrics—such as educational funding, ultimate educational achievements, the share of highly educated individuals, and the average years of schooling per person—coastal regions clearly outperform inland areas in multiple aspects. Furthermore, globalization exacerbates such imbalance by driving resource agglomeration. This process in turn generates a “siphon effect,” where outstanding teachers and students move toward coastal areas, impairing educational development in lagging inland regions. Besides, the interaction between globalization and domestic institutions, including the household registration system and fiscal decentralization, further exacerbates the disparity. In contrast, policies such as fiscal transfer payments have a restricted impact in offsetting these external forces. This study advances the discussion on globalization and educational inequality, highlights policy measures for narrowing regional disparities, and extends its relevance to the experience of other developing nations.

Keywords: Educational Inequality, China, Globalization, Education

1. Introduction

Education inequality has long been a significant challenge in many countries, and China is no exception. Between China’s eastern coastal areas and central-western inland regions, educational disparities exist: these include imbalances in resource allocation, gaps in access to educational opportunities, and differences in academic outcomes, which are observable at both macro and micro levels [1]. This divide, which reflects a combination of historical, economic, and political factors, has not only shaped the development trajectories of different regions but has also been amplified by the forces of globalization. As an external factor marked by growing cross-border interconnections, globalization has reshaped the landscape of education in China: it has reinforced the resource advantages of coastal regions, created challenges for inland areas, and bears close ties to how this educational inequality has evolved [2].

Current research in this field has largely focused on internal factors, including imbalances in resource allocation, disparities in economic development, institutional influences, and how policies shape outcomes. However, existing studies rarely conduct an in-depth exploration of the mechanisms through which globalization affects educational inequality, nor do they offer a systematic reconstruction of the analytical framework or a comprehensive examination of the underlying issues. The research question of this paper is: How exactly does globalization reshape the pattern of regional educational inequality between China's eastern coastal and central-western inland areas through the flows of capital, talent, and technology? What specific challenges does this reshaping process create in narrowing the existing gap?

This paper aims to investigate the specific mechanisms through which globalization—acting via its key carriers of capital, talent, and technology—shapes regional educational gaps. It also explores the barriers this process creates for initiatives aimed at promoting more balanced educational development across different regions of China.

The significance of this study is reflected in the following aspects. Firstly, the necessity of the current research stems from the urgency of practical problems. Although the regional educational inequality in China showed an overall narrowing trend from 2003 to 2019, with the accelerated development of rural education in inland areas and the reduced gap between the central and western regions [1], the gradient gap between coastal and inland areas still exists. Moreover, globalization has led to resource concentration, such as the clustering of international schools and scientific research projects in coastal areas, and a “siphon effect” where high-quality teachers and students flow to coastal areas [3,4], further exacerbating this imbalance. Without prompt intervention, it is likely to form a vicious circle of “backwards education—lagging development” [5], hindering the achievement of common prosperity.

Second, this study expands the perspective of existing research. Previous studies have mostly focused on the impact of domestic factors such as the urban-rural dual system and fiscal decentralisation on educational inequality. However, the analysis of the correlation between globalization and regional educational inequality remains fragmented, lacking a systematic exploration of how globalization reshapes the educational landscape through the flow of capital, talent, and technology. For example, the gap arising from coastal areas' alignment of educational content with the international market and the lag in educational updates in inland areas [3] as not been incorporated into a unified analytical framework and requires further in-depth research.

Third, the new stage of globalization has brought about new challenges [6]. China's inland regions are gaining increasing strategic importance in the “dual circulation” paradigm—a new development model centered on domestic circulation as the mainstay, with domestic and international circulations mutually reinforcing. Yet, their limited educational capacity, as highlighted by Yu [7], risks hampering their integration into the global industrial chain, a critical link in the international circulation. Against this backdrop, studying how globalization reshapes educational disparities becomes directly relevant: it uncovers how global capital, talent, and technology flows widen the coastal-inland educational gap, thereby identifying targeted educational reforms (e.g., aligning curricula with global industry demands, retaining skilled educators) that can enhance inland regions' capacity to participate in global networks [8]. This, in turn, strengthens their role in the “dual circulation” strategy, endowing the research with distinct contemporary value.

Fourth, this study contributes to offering more refined recommendations for the optimization of existing policies. After 2000, China has narrowed the regional education gap through economical policies such as fiscal transfer payments [4], whereas the external impact of globalization may weaken the effect of these policies. Current research needs to evaluate the interaction between

globalization and domestic policies to optimise policy design, such as providing a basis for enhancing the adaptability of inland education to globalization, and so on.

2. Literature review

Existing studies have examined regional educational inequality in China from multiple perspectives, including resource allocation, economic disparities, institutional factors, policy impacts, and the role of globalization in exacerbating the coastal-inland gap.

From the resource allocation perspective, coastal areas have significant advantages in educational input and output. Han et al. [9] noted China's higher education development shows a "dense in the southeast and sparse in the northwest" pattern, with the Beijing-Tianjin-Hebei region, Yangtze River Delta, and Pearl River Delta as high-value areas leading in input (e.g., teaching staff, number of universities) and output (e.g., employment quality). Inland areas only have local advantages in a few central cities, such as the proportion of the population with higher education, which is 50.33% in coastal areas like Beijing, in comparison with 14.19% in inland areas like Yunnan. Average years of education are 12 in coastal cities, in comparison to 6 in inland rural areas [5,10]. This gap is reflected in educational opportunities, processes, and outcomes.

Economy, institutions, and policies are also important factors influencing educational inequality. Economic disparity is foundational. Huang [11] noted that coastal areas have developed economies, abundant educational resources and extensive tech applications, while inland economic backwardness restricts educational investment, forming an "economic backwardness—insufficient education" cycle. Fan et al. [12] emphasised that regional economic imbalance is the root cause of resource distribution imbalance.

In institutional terms, Zhang and Liang [2] argued that early forms of inequality were primarily characterized by disparities between coastal and inland regions. However, with the onset of urbanization, the urban-rural divide emerged as the central issue. Notably, even within this urban-rural framework, coastal areas maintained superior resource allocation across both urban and rural sectors compared to their inland counterparts, thereby creating a pattern of "cumulative disadvantage".

Guo and Li [1] further supplemented institutional influencing mechanisms: they found that 2003-2019 saw overall narrowed regional educational inequality, with accelerated inland rural education development and a reduced gap between central and western regions (driven by policies, economic growth, etc.). Yet, the intra-regional urban-rural gap became the main source of inequality during this period. They also pointed out that the urban-rural dual system (a system centered on the household registration system, dividing urban and rural populations into distinct groups with differentiated resource allocation and public services) and decentralized educational reform exacerbated the gap—decentralization allowed coastal areas with strong financial capabilities to secure more educational resources, while the urban-rural division put inland rural areas at a disadvantage in terms of teaching staff and facilities. Xiang et al. [13] added that the household registration system further restricted inland migrant workers' children from accessing high-quality high school education in coastal areas, worsening institutional barriers to educational equity.

In policy, Guo and Li [4] mentioned that the 1980s market-oriented reforms concentrated resources along the coast, leading to coastal areas' leading Education Development Index (EDI) as early as 2003. From 2003 to 2020, economic policies such as fiscal transfer payments helped narrow regional educational disparities, but the "spatial gradient" pattern of inequality persisted: specifically, the development level of urban and rural education (EDL) in eastern and northeastern regions was significantly higher than that in central and western regions, while the urban-rural

education inequality index (EII) showed the opposite trend (eastern and northeastern regions had lower EII than central and western regions). This spatial gradient was also reflected in development speed. For example, the average annual growth rate of urban and rural education development in western regions was the fastest, while that in northeastern regions was the slowest, reflecting unbalanced gradient differentiation in regional educational development.

Xiang et al. [13] further pointed out flaws in early policy design: the “east-central-west” macro policy division mismatched actual educational development needs, weakening policy effects. The Institutional Research Effectiveness & Assessment (IREA) Index revealed that education in northeastern China was better than in southwestern China—a spatial pattern that did not align with the central government’s “east-central-west” division used for policy implementation. This mismatch made it impossible to accurately target disadvantaged areas, failing to effectively address regional educational inequalities.

Globalisation, an external variable, has reshaped education and challenged inland areas, with resource agglomeration intensifying coastal advantages. Wang et al. [3] and Zhang and Liang [2] noted that coastal areas attract foreign investment or industries via geography, driving the concentration of international schools and research projects. Inland areas face a “siphon effect” with high-quality teachers/students flowing to coastal areas [4]. Education in inland regions often fails to align with market demands. Wang et al. [3] found coastal educational content aligns with international markets, while inland updates lag, expanding graduate competitiveness gaps and forming a “backwards education-lagging development” cycle [5]. Wu et al. [5] added that globalisation widened educational internationalisation gaps, with coastal universities having more international cooperation opportunities than inland ones. This phenomenon further amplifies disparities in regional personality rights protection (specifically, the differences in how legal systems safeguard personality rights across various regions), given that education levels directly shape individuals’ awareness of their entitlement to such protection.

China's regional educational inequality has developed alongside its economic restructuring, policy changes, and the complex, multifaceted impact of globalization. As previous scholarship highlights, this topic has consistently drawn academic interest [1]. Broadly speaking, the most prominent trait of regional educational inequality is the "coastal-inland" disparity, and this gap has taken on a complex, superimposed pattern over the years. Existing studies have largely focused on domestic factors, such as the urban-rural dual system [1], fiscal decentralization [1], and the household registration system [13], often neglecting the role of globalization in shaping regional educational inequality. Furthermore, despite the significant researches that previous researchers did has addressed the coastal-inland gap, there remains a lack of comprehensive analysis that integrates both economic, institutional, and global dimensions in understanding the evolution of educational disparities.

This paper addresses three gaps in existing research, lack of clarification on globalization's impact on China's coastal-inland educational gap via key flows, failure to analyze its joint exacerbation with domestic systems, and absence of evaluation on its weakening effect on gap-narrowing policies. Focused on China’s context, this research examines the dynamic interplay between globalization and regional educational disparities, and puts forward an innovative theoretical framework that integrates internal and external drivers shaping the development of China’s education sector.

3. Theoretical framework

Educational disparities reflect differences in resource allocation, opportunities, and outcomes across regions, while globalization emphasizes the cross-border flows of capital, talent, and knowledge that create interdependencies. These theories were selected for their capacity to address the spatial, socioeconomic, and institutional aspects of inequality.

The core-periphery theory, a key framework in regional development research, argues that coastal regions gain an edge from their geographic advantages and supportive policies, allowing them to become “core zones” that attract and accumulate resources. However inland regions are more likely to fall into the category of “peripheral zones,” trapped in an interdependent loop that constrains their development trajectory [12].

Human capital theory argues that coastal regions in China function within a self-reinforcing positive cycle: when local governments or societies invest heavily in education, this effort drives the buildup of skilled human capital. In turn, this skilled workforce enhances the regions’ capacity to adapt to the fast-changing demands of a globalized economy. By contrast, inland regions are stuck in a downward negative cycle: limited economic resources force cuts or stagnation in educational funding, which then restricts the development of local human resources. This, in turn, weakens their ability to meet the requirements of international markets. This two-tiered cycle aligns closely with Huang’s [11] “economy-education interlock” framework, which highlights how economic conditions and educational progress in different regions influence each other in a reciprocal, mutually shaping way. Adding another layer of analysis, institutional economics theory conceptualizes institutions as shared, collective action patterns that guide and constrain individual behaviors. Applying this lens, the theory examines how China’s domestic institutional arrangements—specifically the urban-rural dual structure and household registration system—interact with global market norms. For instance, coastal regions can tap into more educational resources by utilizing fiscal decentralization policies and integrating themselves into global economic networks. Inland regions, however, face greater institutional barriers that push them to the margins of such development opportunities [1].

Cumulative disadvantage theory provides a more detailed analytical framework to unpack how this regional gap widens. As globalization advances, the initial advantages of coastal areas (like easier access to global resources such as cross-border educational collaborations and international market information) keep expanding and becoming more deeply rooted. Inland areas, by contrast, are trapped in “starting disadvantages”. They have few effective ways to offset the early gaps in resource access or interregional networking. Over time, this gap between the two regions becomes increasingly pronounced [2,5].

4. Methodology

To address its key research query, this study adopts a literature review methodology. Specifically, the research explores the ways in which globalization is reshaping the structure of regional educational disparity across China’s eastern coastal and central-western inland regions, as well as what barriers arise during efforts to narrow this disparity. This study draws upon academic publications in the fields of education and economics, encompassing research on the distribution of educational resources, disparities in regional economic development, and the interplay between globalization and advancements in education and economic growth.

The research centers on academic literature pertaining to education and economics, two domains closely aligned with the study’s core focus. Including works on the distribution of educational

resources, disparities in regional economic development, and the interplay between globalization and the advancement of education or economic growth. To ensure comprehensiveness and relevance, the literature retrieval covers Chinese and English academic databases (including CNKI, Web of Science, and Scopus) with a time span of 2000–2025. The retrieval keywords are centered on “regional educational inequality in China”, “coastal-inland educational gap”, “globalization and educational resource distribution”, “educational economics”, and “institutional factors in educational inequality”, targeting studies that examine the links between economic mechanisms (e.g., capital flow, fiscal decentralization), educational outcomes (e.g., resource input, attainment rates), and global influences.

In the literature screening process, the study first excludes non-academic or low-relevance content (such as policy documents without empirical support or theoretical analysis) by reviewing titles and abstracts. It then conducts in-depth full-text reading to filter out repetitive studies or those with questionable methodological rigor, ultimately selecting core pieces of literatures. These selected works include theoretical research (e.g., institutional economics theories related to educational resource allocation, human capital theory in educational economics), empirical analyses (e.g., quantitative studies on coastal-inland differences in educational input-output indicators), and interdisciplinary discussions (e.g., how economic globalization affects regional educational resource agglomeration).

In terms of data analysis, this study systematically organizes and synthesizes the core insights of selected literature. It extracts key arguments regarding how economic factors (e.g., regional economic imbalances fuel gaps in educational resources), institutional factors (e.g., household registration systems limit access to education), and globalization (e.g., the flow of capital and talent widens coastal-inland disparities) contribute to shaping educational inequality. By cross-comparing and integrating viewpoints from the fields of education and economics—particularly focusing on how economic mechanisms interact with educational policies—the study articulates the mechanism chain of “globalization-driven factors → regional variations in educational resource distribution → the emergence of educational inequality manifestations” and outlines the limitations of existing policies (e.g., fiscal transfer payments have limited effectiveness in offsetting globalization’s siphoning effect).

In terms of research ethics, all cited literature is sourced from public academic databases, and citations strictly follow APA formatting to ensure the traceability of ideas and data. Additionally, the study balances diverse viewpoints in the literature (e.g., differing arguments on whether globalization narrows or widens educational gaps) and acknowledges limitations such as potential biases in secondary data, to ensure the objectivity of the conclusions drawn.

5. Findings

Regional educational inequality in China shows a “coastal - inland” gradient gap. Coastal areas have significant advantages in educational input (such as the number of teachers and universities) and output (such as employment quality). Beijing, the Yangtze River Delta, the Pearl River Delta, etc. are high-value regions [9]. From 2003 to 2019, the overall inequality in regional education in China narrowed. Education in inland rural areas developed rapidly, and the gap between the central and western regions decreased. However, the urban-rural gap within the region became the main source of inequality [1]. The proportion of the population with higher education in coastal areas is significantly higher than that in inland areas. For instance, it is 50.33% in Beijing and 14.19% in Yunnan. In terms of the average years of education, it is 12 years in coastal cities and 6 years in inland rural areas [5].

First, the interaction between economy and education is significant. Coastal areas achieve a positive cycle of economy and education through globalization, while the predicament of “economic backwardness - insufficient investment in education” in inland areas highlights the role of education as the core of human capital accumulation [11]. Second, there is an interactive influence between institutions and globalization. The superimposition of fiscal decentralization and the household registration system with globalization factors leads to an imbalance in resource distribution, confirming the view in institutional economics that “collective action shapes educational opportunities” [1]. Third, there are boundaries to policy effects. Although policies such as fiscal transfer payments have narrowed the gap, they have failed to counteract the resource aggregation effect brought about by globalization, indicating that policies need to take into account both domestic balance and global competitiveness [4].

6. Discussion

The research finds that regional educational inequality in China presents a “coastal - inland” gradient feature. Coastal areas significantly lead in terms of educational input (teachers, the number of colleges and universities), output (employment quality), and the proportion of the population with higher education (such as 50.33% in Beijing vs. 14.19% in Yunnan). Moreover, 68% of the “Double First-Class” universities are concentrated in coastal areas. From 2003 to 2019, the regional gap narrowed overall, but the urban-rural gap became the main source. Meanwhile, globalization exacerbated the imbalance through resource aggregation and the “siphon effect”, and the household registration system further restricted the educational opportunities of inland groups [9,5].

This study mainly adopts the method of literature review. The conclusion is derived from the sorting out of relevant literature in education and economics, but lacks quantitative data support from real school scenarios, and the empirical persuasiveness needs to be strengthened. The research focuses on the educational inequality between China’s coastal and inland areas, with a limited coverage. It is difficult to adapt to different social and cultural backgrounds such as areas where ethnic minorities live in compact communities and border areas, and the universality of the conclusion is insufficient. Meanwhile, the analysis mostly starts from an economic perspective, drawing less on theories from the fields of education and sociology, and fails to comprehensively interpret the issue from a multi-disciplinary Angle.

For policymakers, it is necessary to pay attention to the combined impact of globalization and domestic systems such as household registration and fiscal decentralization on the educational gap. In addition to the existing fiscal transfer payment policies, measures such as encouraging inland areas to retain high-quality teachers and relaxing restrictions on the children of floating population attending schools in coastal areas should be introduced. School administrators, especially those in charge of inland schools, need to promote the alignment of their curricula with global industrial demands and introduce high-quality educational resources from coastal areas to enhance the quality of their schools. NGOs can build an exchange platform between coastal and inland schools, organize teachers to teach in remote areas and students to exchange, and also carry out educational public welfare projects in inland rural areas to supplement the weak links in education that are not covered by policies.

The subsequent research can add an empirical link to collect quantitative data such as school funds and teaching staff in different regions. Expand the research scope to include ethnic minority areas, border areas, etc., to enhance the applicability of the conclusion; At the same time, integrate theories from multiple disciplines such as educational equity and social stratification to analyze regional educational inequality from multiple dimensions and improve the research framework.

7. Conclusion

This study systematically explores the evolution of regional educational inequality between China's coastal and inland areas under the influence of globalization, focusing on how capital, talent, and technology flows reshape such disparities and the resulting challenges. Through a comprehensive review of literature spanning 2000–2025, the findings confirm that China's regional educational gap presents a distinct “coastal-inland gradient” pattern, with coastal regions maintaining significant advantages in educational input (e.g., concentration of “Double First-Class” universities, high-quality teaching staff), output (e.g., employment quality, higher education attainment rates), and internationalization (e.g., international schools, research collaborations). Globalization emerges as a critical external driver exacerbating this imbalance. It strengthens coastal regions' status as “core areas” through capital agglomeration (e.g., clustering of foreign-funded educational projects), talent siphoning (e.g., migration of outstanding teachers and students), and technological dominance (e.g., updated curricula aligned with global markets), while inland regions, as “peripheral areas”, struggle with lagging resource accumulation and a weakened capacity to participate in global educational and economic networks. This dynamic reinforces the Matthew effect, where initial advantages in coastal areas accumulate over time, trapping inland regions in a cycle of “backward education and stunted development”. Domestic factors such as the household registration system, fiscal decentralization, and urban-rural dual structure interact with globalization to further widen the gap. Although policies like fiscal transfer payments have narrowed regional educational disparities to some extent, they fail to counteract the resource concentration effects of globalization, highlighting the need for more targeted strategies that integrate domestic balance with global competitiveness. By integrating core-periphery theory, human capital theory, and institutional economics, this study clarifies the mechanisms through which globalization interacts with regional development and institutional settings to shape educational inequality. This analytical framework addresses the fragmentation in existing research (Much of it has focused primarily on domestic factors). Also delivers a more holistic grasp of how external global forces interact with internal structural constraints. For policy practice, the study highlights the urgency of alleviating globalization's adverse impacts on inland education systems. Concrete measures might involve expanding inland regions' access to global educational resources (e.g., facilitating international collaborative initiatives for universities in inland areas), introducing targeted incentives to retain high-caliber teaching professionals, and removing institutional barriers (e.g., easing household registration limits that restrict educational mobility) to balance the distribution of resources. For other developing nations, the study's findings serve as a cautionary reference: proactive policy interventions are essential to prevent globalization from widening regional educational gaps and to foster more inclusive development. The study has limitations, including its dependence on secondary literature—a factor that may constrain the depth of analysis regarding specific regional dynamics. Future research could adopt case study methodologies or quantitative modeling to further unpack the nuanced interactions between capital, talent, and technology flows in shaping educational inequality, thereby offering more granular insights to inform policy design.

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