



## The unequal distribution of tourism's bounty: Tourism resources and income inequality in China

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### ABSTRACT

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This study quantitatively investigates the relationship between tourism resource development and urban-rural income inequality in China from 2005 to 2022. While tourism is frequently promoted as a strategic tool for regional development and poverty alleviation, its distributional effects remain ambiguous. Diverging from studies that rely on demand-side metrics such as visitor arrivals, this research utilizes panel data from 31 Chinese provinces to distinguish between the endowment of tourism resources (rated scenic spots) and economic flows. We specifically examine the impact of resource quality by differentiating between high-grade (A4-A5) and low-grade (A1-A3) scenic areas. Contrary to the pro-poor tourism hypothesis, which posits tourism as an equalizer, our empirical results, utilizing two-way fixed-effects and instrumental-variable strategies, indicate that the aggregate quantity of tourism resources exerts a statistically significant positive effect on the urban-rural income gap. Specifically, tourism development behaves as a mechanism of “disequalizing growth,” defined as a trajectory of economic expansion that increases overall aggregate wealth but simultaneously widens the income and resource gaps between different socioeconomic groups, such as urban and rural populations. Furthermore, we identify significant spatiotemporal heterogeneity: the inequality-widening effect is most pronounced in the economically developed Eastern region and intensified significantly following the 2008 global financial crisis. These findings suggest that, without targeted redistributive policies and supply-chain linkages, the mere development of tourism infrastructure, particularly capital-intensive, high-grade sites, may exacerbate rather than alleviate the urban-rural divide.

**Contribution/Originality:** This study contributes to tourism geography and development economics by providing novel empirical evidence that capital-intensive tourism resource development, specifically, high-grade scenic areas, exacerbates China's urban-rural income gap. By shifting analytical focus from demand-side visitor flows to supply-side fixed assets, it demonstrates how institutionalized tourism infrastructure fosters disequalizing growth.

### 1. INTRODUCTION

While tourism is globally championed as a robust engine for regional economic growth, its capacity to bridge deep-rooted socio-economic inequalities remains one of the most critical and unresolved challenges in development literature (Cole & Morgan, 2010; Stabler, Papatheodorou, & Sinclair, 2010). In the context of China, the tourism sector has undergone remarkable expansion, evolving into a strategic pillar industry and a crucial driver of development, particularly in regions lagging in traditional industrialization (Zhao & Xia, 2020). Policy narratives frequently laud tourism for its potential to generate employment, stimulate local economies, and alleviate poverty through the presumed “trickle-down” effect (Garsous, Corderi, Velasco, & Colombo, 2017). However, juxtaposed

against these aggregate economic gains are persistent concerns regarding the highly skewed distributional impacts of tourism revenue. Scholars have increasingly questioned whether the industry exacerbates, rather than mitigates, existing socio-economic inequalities (Göymen, 2000; Lee, 2009; Scheyvens, 2002). The central tension lies in the uneven spatial distribution of tourism resources and the drastically varying capacities of different regions, and distinct populations within those regions, to capitalize on tourism opportunities. Consequently, the "bounty" of tourism may be unequally distributed, posing significant challenges for achieving balanced regional development.

Income inequality, particularly the structural urban-rural income gap, remains a formidable challenge in China despite decades of rapid aggregate economic growth (Wang & Bao, 2021). While tourism development is frequently advocated by policymakers as a pragmatic mechanism to bridge this gap by fostering inclusive development in rural areas, where the vast majority of natural and cultural scenic assets are geographically located, empirical evidence regarding its actual efficacy is mixed (Manyara & Jones, 2007). The divergent literature suggests two opposing outcomes: one strand of research argues that tourism acts as an economic equalizer by creating vital non-agricultural employment opportunities in rural peripheries (Garsous et al., 2017), while a critical opposing view contends that the lion's share of financial benefits concentrates in urban centers due to their superior capital and infrastructure. This structural imbalance leads to profound economic 'leakage' and the subsequent widening of wealth disparities (Seckelmann, 2002; Telfer & Sharpley, 2008). This dichotomy necessitates a much more nuanced understanding of how the industry's foundational assets, the physical tourism resources themselves, influence income distribution dynamics on a macro scale.

Existing literature has extensively explored the relationship between general resource distribution (such as natural, human, and financial capital) and income inequality (Lin, Kim, & Wu, 2013; Liu, Hao, & Qiu, 2025). However, within tourism studies, the prevailing analytical focus has predominantly relied on aggregate outcome indicators, such as visitor arrivals or total tourism revenue (Lee, 2009; Nguyen, 2021). Consequently, a notable empirical gap remains concerning the direct and differentiated impacts of tourism resources, specifically their physical quantity, designated quality (grade), and spatial layout, on income inequality. Understanding the foundational role of these specific assets is critical because, unlike fluid visitor flows that fluctuate with short-term seasonal demand, tourism resources are geographically fixed and require specific, often massive, long-term capital investments. These fixed characteristics inherently shape the subsequent flow of economic benefits along the entire tourism value chain.

To address this critical oversight and provide a clearer empirical evaluation of tourism's distributional footprint, this study formalizes the following explicit research questions:

1. How does the physical endowment of tourism resources affect the structural urban-rural income gap across Chinese provinces?
2. Do capital intensity and asset quality, specifically distinguishing between high-grade (4A–5A) and low-grade (1A–3A) scenic areas, differentially influence this distributional outcome?
3. How do these inequality dynamics exhibit spatiotemporal heterogeneity across different geographic regions and macroeconomic periods in China?

This paper departs from traditional revenue-based assessments to rigorously investigate the structural mechanisms driving these distributional outcomes. By shifting the analytical focus from downstream outcomes (revenue/arrivals) to upstream inputs (tourism resources), this study makes three distinct theoretical and empirical contributions to the literature. First, we strictly distinguish between the flow of visitors and the stock of tourism resources. While visitor arrivals are frequently used as a proxy for tourism development, they are highly susceptible to short-term demand shocks and do not accurately reflect the capital investment structure of a destination. By utilizing the official inventory of rated scenic areas, we provide a more robust measure of supply-side capacity that is directly amenable to state policy intervention. Second, we deconstruct the inherent heterogeneity of tourism assets. Existing studies often treat tourism as a monolithic industry; however, we argue that high-grade, capital-intensive sites (4A–5A) have fundamentally different economic footprints from low-grade, community-accessible sites (1A–3A).

This specific differentiation allows us to test the “enclave” hypothesis with far greater precision. Third, we employ a rigorous instrumental variable (IV) strategy using lagged resource data to effectively address endogeneity, thereby providing causal evidence of whether the spatial layout of tourism resources acts as an equalizer or merely entrenches existing urban-rural hierarchies.

## 2. LITERATURE REVIEW

This study situates itself at the intersection of development economics and tourism geography. We review the literature, progressing from the general impacts of resource distribution on inequality, through the theoretical lenses governing tourism’s distributional mechanisms, to the specific institutional context of China’s tourism rating system.

### 2.1. *Spatial Disparities in Resource Distribution and Income Inequality*

Economic geography posits that income inequality is fundamentally rooted in the spatial mismatch of core production factors: natural resources, infrastructure, labor, and capital (Li, Wang, Zhu, & Zhao, 2014; Lin et al., 2013). Regions endowed with abundant resources and integrated infrastructure networks can efficiently access global markets, attracting technology and capital, which mitigates macro-level inequality. Conversely, regions lacking these complementarities face high circulation costs and limited employment diversification, exacerbating income disparities (Liu et al., 2025).

These mechanisms are acutely relevant to tourism. Although natural or cultural tourism resources are often geographically fixed in rural or peripheral areas, their commercialization requires complementary mobile resources—capital for hotels, skilled labor for management, and transportation infrastructure. The uneven distribution of these complementary factors across China creates a disconnect (Qin, Xu, & Chung, 2019). Urban centers, possessing superior infrastructure and service capacity, are often better positioned to capture the value generated by rural attractions (Cheng & Ma, 2022). Consequently, resource-rich but infrastructure-poor rural regions may struggle to convert tourism assets into local economic gains.

Furthermore, disparities in human and financial capital amplify this dynamic. Regions with extensive educational resources attract skilled talent, enhancing productivity and income, while peripheral regions suffer from “brain drain” and the retention of low-skilled labor (Autor, 2014; Lerch, 2019). Similarly, the concentration of financial resources in urban centers creates a “siphon effect,” whereby capital flows from resource-scarce to resource-abundant regions in pursuit of higher returns (Beck, Demirgüç-Kunt, & Levine, 2007; Seven, 2022). In the tourism context, this suggests that even if a rural area possesses a high-quality scenic spot, its financing and ownership are likely to originate from urban centers, leading to the repatriation of profits and the “financial repression” of the local host community (Sehrawat & Giri, 2016).

### 2.2. *Tourism Development and Income Distribution*

The academic debate regarding tourism’s impact on income distribution is characterized by two contrasting narratives: the “pro-poor” growth hypothesis and the structuralist “dependency theory” model.

Proponents of tourism as a development tool argue that the industry reduces inequality by diversifying rural economies and creating non-agricultural employment (Ashley, Boyd, & Goodwin, 2000; Garsous et al., 2017; Zhao & Xia, 2020). From this perspective, tourism allows rural residents to monetize local assets, landscapes, culture, and handicrafts, thereby narrowing the gap with urban incomes.

However, a critical body of literature suggests that achieving equitable distribution is structurally difficult, a perspective powerfully articulated through the lens of dependency theory (Britton, 1982; Frank, 1966). Originally developed to explain international economic imbalances, dependency theory has been effectively adapted by tourism scholars to explain subnational urban-rural divides (Mosedale, 2014). Grounded in this framework, scholars argue that urban areas serve as metropolitan “cores,” monopolizing the capital, marketing channels, and transportation

networks necessary for modern tourism. Rural areas, conversely, are relegated to the role of the “periphery,” providing the raw materials, scenic landscapes and cultural backdrops, while being structurally dependent on the urban core for tourist flows and investment.

Within this dependency framework, the economic value generated in the rural periphery is systematically extracted and captured by urban-based tour operators, elite hotel chains, and external transport providers (Göymen, 2000; Telfer & Sharpley, 2008). Because the periphery lacks the structural capacity to retain the surplus value of its own resources, tourism development frequently leads to substantial economic ‘leakage’ back to urban centers (Britton, 1991). This extractive relationship inherently marginalizes local populations, transforming them into low-wage laborers within their own territories and consequently leading to a widening, rather than narrowing, of the urban-rural income gap (Nguyen, 2021).

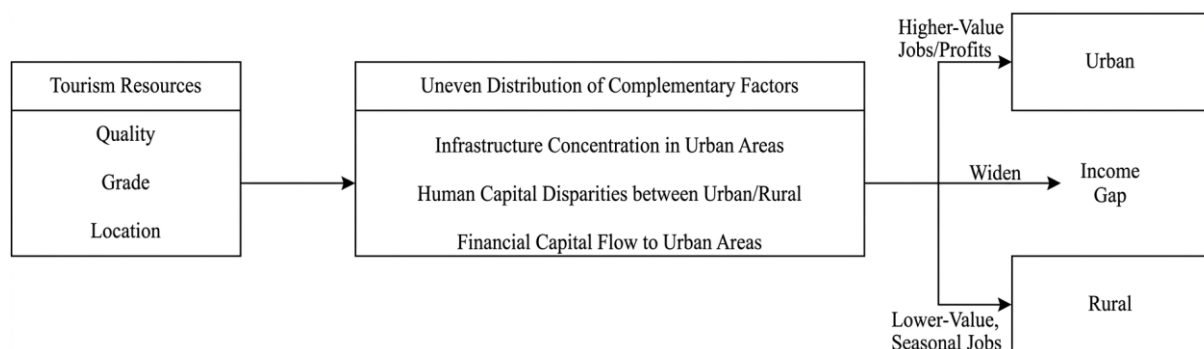


**Figure 1.** Conceptual model of tourism resource development and income inequality.

We propose a conceptual model (Figure 1) in which tourism resources act as foundational assets. Their impact is mediated by the unequal distribution of complementary resources, such as infrastructure and human capital. This interaction creates a dependency-driven “siphon effect,” causing economic leakage from rural to urban areas. This mechanism likely intensified in China after 2008, following the national strategy to boost domestic consumption through large-scale infrastructure and high-speed rail investments, which favored urban connectivity and capital-intensive tourism projects (Sun, Chu, & Ye, 2024).

### 2.3. Institutional Context of China's Tourism Rating System

In China, the theoretical core-periphery divide is explicitly formalized and institutionalized through the national standard, ‘Standard of Classification and Evaluation of Quality Grades of Tourist Attractions’ (GB/T 17775-2003). Promulgated by the central government, this system grades scenic spots from 1A (the lowest) to 5A (the highest), based on a rigorous, quantitative 1,000-point evaluation scale.

Understanding this institutional context is vital because it dictates the capital intensity of tourism supply. Achieving a high-grade designation, particularly 4A or 5A status, is highly coveted by local governments, as it guarantees inclusion in national marketing campaigns and allows for premium ticket pricing. However, the GB/T 17775-2003 standard demands extraordinary, capital-intensive infrastructure to meet these top tiers. Requirements include multilingual, technologically advanced visitor centers, large-scale paved parking facilities, direct connections to national highways, high-capacity ecological flush toilets, and comprehensive digital management systems.

The financial implications of these requirements are profound. Upgrading a rural scenic spot to a 5A standard routinely requires tens to hundreds of millions of RMB in upfront capital. Rural village collectives and local farmers simply do not possess the credit access or financial reserves to meet these exorbitant entry barriers. Consequently, the commercialization of high-grade resources is almost exclusively dominated by well-capitalized urban developers, state-owned enterprises (SOEs), or municipal tourism investment groups (Wang & Bao, 2021).

This institutionalized capital intensity inevitably enforces an exclusionary ownership structure. It facilitates a ‘fly-over’ or ‘enclave’ effect, whereby tourists visit rural sites, but high-barrier revenue streams (ticketing, major concessions, and internal transit) are entirely controlled by urban capital. Local rural communities are thus structurally priced out of the primary tourism value chain, relegated to peripheral, low-margin activities such as selling street food or trinkets outside the enclave’s gates (Harrison, 2008). Therefore, the physical resource remains rural, but the economic function and profit retention become aggressively urban.

#### 2.4. Hypotheses Development

Based on competing perspectives of trickle-down benefits versus dependency-driven enclave development, and considering the highly capital-intensive nature of China’s GB/T 17775-2003-rated scenic areas, we formulate the following hypotheses:

Hypothesis 1 (Urban-Rural Income Gap): The density of tourism resources significantly affects the urban-rural income gap. Specifically, an increase in the stock of scenic areas is expected, on average, to be associated with a widening of the income disparity between urban and rural residents, owing to the urban capture of value-added services through the siphon effect.

Hypothesis 2 (Heterogeneity by Resource Quality): The distributional impact varies profoundly by resource quality. High-grade (4A/5A) scenic areas, being heavily capital- and infrastructure-intensive due to institutional grading requirements, are expected to exert a stronger inequality-widening effect than low-grade (1A–3A) scenic areas, which may have lower barriers to entry and remain more accessible to local, smaller-scale rural entrepreneurship.

Consistent with the broader economic growth literature, we also anticipate that tourism resource development will positively affect the absolute incomes of both rural and urban residents, even while structurally exacerbating their relative inequality gap.

### 3. METHODOLOGY

#### 3.1. Data Sources and Variable Construction

To rigorously test the proposed hypotheses, this study employs a balanced panel dataset encompassing 31 provinces, municipalities, and autonomous regions in mainland China from 2005 to 2022. The data are sourced from the China Statistical Yearbook, the Yearbook of China Tourism Statistics, and the National Bureau of Statistics database.

The starting year of 2005 was intentionally selected for two critical reasons. First, from an institutional perspective, the foundational national rating standard for scenic spots, GB/T 17775-2003, was promulgated in late 2003 and reached comprehensive nationwide implementation by 2004–2005. Starting the panel in 2005 ensures that the grading criteria (1A to 5A) are structurally consistent and comparable across all provinces, avoiding the data noise of the transition period. Second, from an empirical perspective, reliable and systematic provincial-level data concerning specific tourism asset classifications and standardized urban–rural income metrics became significantly more accessible and robust following China’s First National Economic Census in 2004.

The variables are constructed as follows (see Table 1).

Dependent Variable (Income Inequality): We utilize the urban–rural income gap ( $\ln\text{income}$ ), measured as the natural logarithm of the absolute difference between urban per capita disposable income and rural per capita net income. While the ratio is often used, the absolute gap more accurately reflects the tangible magnitude of welfare disparity. We also examine  $\ln\text{rural}$  (rural income),  $\ln\text{urban}$  (urban income), and  $\text{pgdp}$  (per capita GDP) to decompose the effects on growth versus distribution.

Independent Variables (Tourism Resources): We use the official inventory of A-level scenic areas as a proxy for tourism resources. This supply-side measure reflects established tourism capacity and fixed structural investment. We decompose it as follows:

A5: High-grade scenic areas (4A and 5A ratings). These represent world-class or national-level attractions requiring substantial capital investment and advanced infrastructure.

A3: Low-grade scenic areas (1A, 2A, and 3A ratings). These are typically regional attractions with lower barriers to development.

A: The total number of rated scenic areas.

All resource variables are log-transformed to reduce skewness and stabilize variance.

Control Variables: We control for pgdp (the level of economic development), STR (industrial structure, measured as the ratio of secondary to tertiary industry output), and gpeo (the population growth rate) to account for the broader macroeconomic contexts that influence income distribution. Although controlling specifically for tourism-directed fiscal expenditure would be ideal for further isolating resource development from general infrastructure investment, consistent provincial-level data for this specific metric before 2010 are heavily conflated with broader cultural and sports spending. Therefore, we use pgdp and STR to capture the provinces' overall infrastructural and developmental capacity.

**Table 1.** Variable Descriptions and Constructions.

| Variables Type | Definition              | Variables Name | Construction                                       |
|----------------|-------------------------|----------------|----------------------------------------------------|
| Dependent      | Urban-rural income gap  | lnincome       | ln(Urban income - rural income)                    |
|                | Rural per capita income | lnrural        | ln(Rural per capita income)                        |
|                | Urban per capita income | lnurban        | ln(Urban per capita income)                        |
| Independent    | Low-grade scenic areas  | A3             | ln(Count of 1A-3A scenic areas)                    |
|                | High-grade scenic areas | A5             | ln(Count of 4A-5A scenic areas)                    |
|                | Total scenic areas      | A              | ln(Total count of A-level scenic areas)            |
| Control        | Economic level          | pgdp           | ln(Per capita GDP)                                 |
|                | Industrial structure    | STR            | Secondary industry value / tertiary industry value |
|                | Population growth       | gpeo           | Annual population growth rate (%)                  |

### 3.2. Descriptive Statistics

Table 2 summarizes the descriptive statistics. The mean of lnincome is 9.417, with a standard deviation of 0.766, indicating persistent and varying inequality across provinces. The distribution of tourism resources is highly uneven: the mean log-value of low-grade scenic areas (A3) is 0.235, whereas that of high-grade areas (A5) is 0.140. However, the maximum values indicate that some provinces possess a dense concentration of tourism assets.

**Table 2.** Descriptive Statistics Results.

| Variables Name | Obs. | Mean   | S.D.  | Min.  | Median | Max.   |
|----------------|------|--------|-------|-------|--------|--------|
| lnincome       | 4985 | 9.417  | 0.766 | 7.012 | 9.505  | 10.805 |
| lnrural        | 4985 | 9.138  | 0.666 | 7.171 | 9.216  | 11.194 |
| lnurban        | 4985 | 10.021 | 0.525 | 8.515 | 10.088 | 11.339 |
| pgdp           | 4985 | 10.040 | 2.231 | 7.800 | 10.495 | 12.456 |
| A3             | 4985 | 0.235  | 1.213 | 0.000 | 0.000  | 30.000 |
| A5             | 4985 | 0.140  | 0.736 | 0.000 | 0.000  | 19.000 |
| A              | 4985 | 0.371  | 1.774 | 0.000 | 0.000  | 36.000 |
| STR            | 4985 | 1.090  | 0.799 | 0.000 | 1.051  | 10.706 |
| gpeo           | 4985 | 4.469  | 7.017 | 0.000 | 3.660  | 293.51 |

Visualizing the data using choropleth maps (Figure 2) reveals a positive spatial correlation: provinces with high concentrations of scenic areas, particularly high-grade ones, tend to overlap with regions exhibiting higher levels of

economic development (Eastern and Central China). Preliminary visual inspection also suggests that these regions maintain significant urban-rural income disparities, providing initial support for our hypotheses.

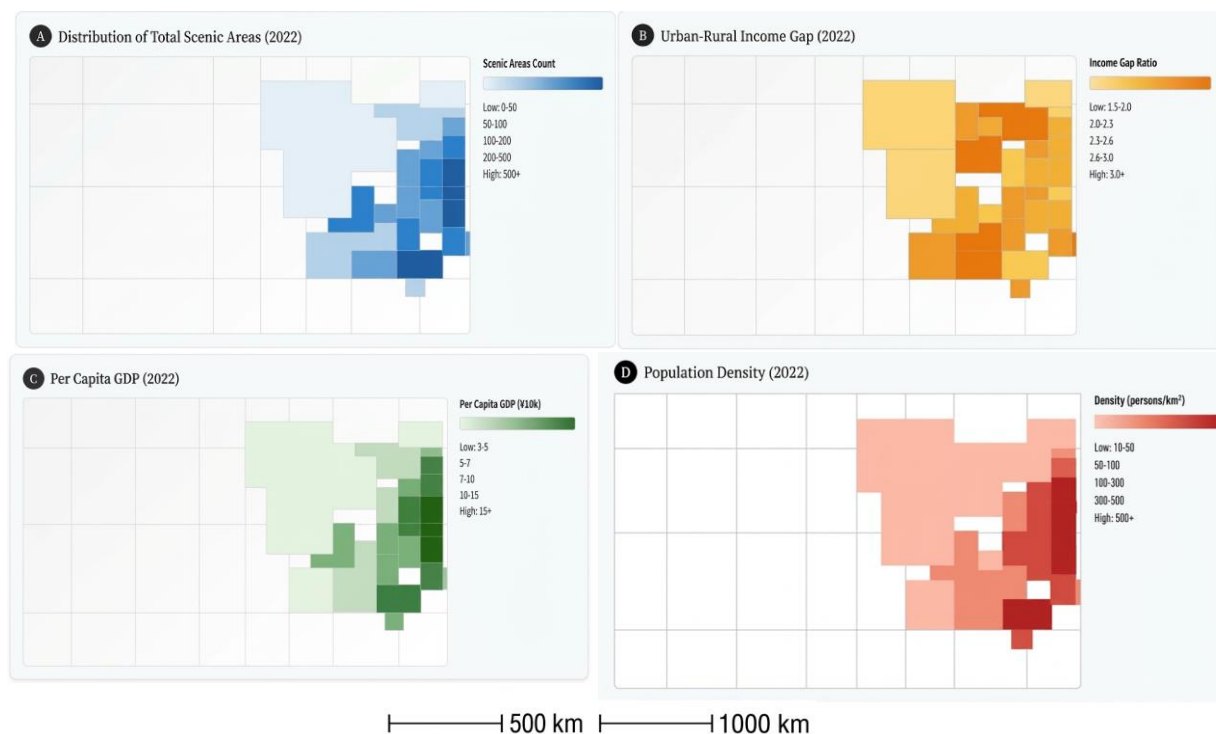


Figure 2. Choropleth Map of Tourism Resources, Economic Development, and Population Distribution in China.

### 3.3. Model Specification and Estimation Strategy

We adopt a two-way fixed-effects (FE) model to mitigate omitted-variable bias. This approach controls for time-invariant, province-specific characteristics (such as geography, topography, and historical culture) and time-varying national shocks (such as sweeping macroeconomic policies or the COVID-19 pandemic).

The baseline estimation equation is formulated as follows:

$$Y_{it} = \alpha_0 + \beta_1 \text{Resource}_{it} + \gamma_1 \text{STR}_{it} + \gamma_2 \text{gpeo}_{it} + \mu_i + \lambda_t + \epsilon_{it} \quad (1)$$

Where  $Y_{it}$  represents the dependent variables ( $\ln \text{income}$ ,  $\ln \text{rural}$ ,  $\ln \text{urban}$ ,  $\text{pgdp}$ ) for province  $i$  in year  $t$ ;  $\text{Resource}_{it}$  denotes the tourism resource variable ( $A$ ,  $A3$ , or  $A5$ ).  $\mu_i$  and  $\lambda_t$  represent province and year fixed effects, respectively. To address potential issues of heteroskedasticity and within-panel serial correlation, a common concern in long-term macroeconomic panel data, all models are estimated using robust standard errors clustered at the province level (Cameron & Miller, 2015). This clustered standard error approach ensures that the statistical significance of our estimates is not artificially inflated by unobserved, province-specific persistence over time.

**Addressing Multicollinearity:** A significant correlation exists between the counts of high-grade and low-grade scenic areas within provinces (correlation  $> 0.7$ ). To avoid multicollinearity, which creates unstable and unreliable coefficient estimates, we estimate separate regressions for  $A3$ ,  $A5$ , and total  $A$ . This approach allows us to accurately isolate the marginal effect of each resource tier.

**Addressing Endogeneity (IV Strategy):** While fixed effects control for unobserved heterogeneity, potential reverse causality remains a concern. For example, wealthier provinces or those experiencing widening inequality may systematically invest more in scenic areas to promote employment. To address this concern, we employ an instrumental variable (IV) strategy using one-period lagged tourism resource measures ( $\text{LA3}$ ,  $\text{LA5}$ , and  $\text{LA}$ ) as instruments for their current values.

The validity of this IV strategy rests on satisfying both relevance and exogeneity conditions. Relevance is strongly supported because infrastructure investment exhibits significant path dependence; historical accumulations

of scenic areas strongly predict current stocks. Crucially, the exogeneity assumption is theoretically sound because the establishment of rated scenic spots, especially capital-intensive, high-grade sites- requires multi-year planning, bureaucratic approval, and construction cycles predicated on historically fixed geographical or cultural assets. Consequently, the lagged stock of these resources is predetermined relative to, and strictly exogenous to, any unobserved, idiosyncratic economic shocks affecting current-year income inequality (Reed, 2015). This temporal separation effectively severs the reverse-causality loop, consistent with the advanced dynamic-panel literature (Bellemare, Masaki, & Pepinsky, 2017).

## 4. RESULTS

This section details the empirical findings, progressing from baseline fixed-effects models to endogeneity corrections and heterogeneity analyses.

### 4.1. Baseline Regression Results

The baseline results obtained using the fixed-effects estimator are reported in Tables 3 through 5. Across all specifications, the results consistently indicate that tourism resource endowment is a significant predictor of income dynamics.

- Impact of Low-Grade Scenic Areas (A3)

Table 3 reveals that low-grade scenic areas have a statistically significant positive effect on the urban-rural income gap. The coefficient of A3 for  $\ln\text{income}$  is 0.0443 ( $p < 0.01$ ). This implies that a 1% increase in the number of low-grade attractions is associated with a 0.0443% increase in the absolute income gap. Importantly, A3 resources positively affect both rural (0.0699) and urban (0.0552) incomes. This confirms that, although tourism promotes growth in both sectors, it does not necessarily narrow the gap between them.

**Table 3.** The Impact of Low-grade Scenic Areas (Fixed Effects).

| Variables              | (1)                | (2)               | (3)               | (4)           |
|------------------------|--------------------|-------------------|-------------------|---------------|
|                        | $\ln\text{income}$ | $\ln\text{rural}$ | $\ln\text{urban}$ | $\text{pgdp}$ |
| A3                     | 0.0443***          | 0.0699***         | 0.0552***         | 0.0367*       |
|                        | -0.00579           | -0.00712          | -0.00589          | -0.0202       |
| STR                    | -0.295***          | -0.450***         | -0.357***         | -0.328***     |
|                        | -0.0118            | -0.0145           | -0.012            | -0.041        |
| gpeo                   | -0.00608***        | -0.0109***        | -0.00805***       | -0.0165***    |
|                        | -0.00095           | -0.00117          | -0.000967         | -0.00331      |
| Constant               | 9.755***           | 9.660***          | 10.43***          | 10.46***      |
|                        | -0.0146            | -0.0179           | -0.0148           | -0.0508       |
| Id                     | Yes                | Yes               | Yes               | Yes           |
| Province fixed effects | Yes                | Yes               | Yes               | Yes           |
| Year fixed effects     | Yes                | Yes               | Yes               | Yes           |
| Observations           | 4,985              | 4,985             | 4,985             | 4,985         |
| R-squared              | 0.141              | 0.208             | 0.192             | 0.021         |

**Note:** \*  $p < 0.1$ , \*\*\*  $p < 0.01$ . T-statistics in parentheses.

- Impact of High-Grade Scenic Areas (A5)

Table 4 presents the results for high-grade resources. The coefficient for A5 on  $\ln\text{income}$  is 0.0828 ( $p < 0.01$ ), which is nearly double the magnitude of the coefficient for low-grade areas. This strongly supports Hypothesis 2: high-grade, capital-intensive tourism development exerts a more powerful disparity-widening effect. While A5 resources significantly boost rural income (0.127) and urban income (0.100), the resulting structural dynamic widens absolute inequality. The impact on per capita GDP is also robustly positive (0.100,  $p < 0.05$ ), confirming the sector's contribution to aggregate economic growth.

**Table 4.** The Impact of High-grade Scenic Areas (Fixed Effects).

| Variables              | (1)         | (2)        | (3)         | (4)        |
|------------------------|-------------|------------|-------------|------------|
|                        | lnincome    | lnrural    | lnurban     | pgdp       |
| A5                     | 0.0828***   | 0.127***   | 0.100***    | 0.100**    |
|                        | -0.0114     | -0.0141    | -0.0116     | -0.0398    |
| STR                    | -0.295***   | -0.451***  | -0.357***   | -0.327***  |
|                        | -0.0118     | -0.0145    | -0.012      | -0.041     |
| gpeo                   | -0.00628*** | -0.0112*** | -0.00831*** | -0.0167*** |
|                        | -0.000951   | -0.00117   | -0.000968   | -0.00331   |
| Constant               | 9.755***    | 9.661***   | 10.43***    | 10.46***   |
|                        | -0.0146     | -0.018     | -0.0149     | -0.0508    |
| Id                     | Yes         | Yes        | Yes         | Yes        |
| Province fixed effects | Yes         | Yes        | Yes         | Yes        |
| Year fixed effects     | Yes         | Yes        | Yes         | Yes        |
| Observations           | 4,985       | 4,985      | 4,985       | 4,985      |
| R-squared              | 0.14        | 0.205      | 0.19        | 0.022      |

Note: \*\* p<0.05, \*\*\* p<0.01. T-statistics in parentheses.

- Impact of Total Scenic Areas (A)

Table 5 corroborates the findings using the aggregate measure. The total stock of scenic areas positively correlates with the income gap ( $\beta=0.0356$ ,  $p<0.01$ ). This suggests that the "disequalizing growth" effect is a general characteristic of tourism development in China, not limited to a specific tier, although its intensity varies.

**Table 5.** The Impact of All Scenic Areas (Fixed Effects).

| Variables              | (1)         | (2)        | (3)         | (4)        |
|------------------------|-------------|------------|-------------|------------|
|                        | lnincome    | lnrural    | lnurban     | pgdp       |
| A                      | 0.0356***   | 0.0556***  | 0.0440***   | 0.0337**   |
|                        | -0.00429    | -0.00528   | -0.00437    | -0.015     |
| STR                    | -0.294***   | -0.450***  | -0.357***   | -0.327***  |
|                        | -0.0118     | -0.0145    | -0.012      | -0.041     |
| gpeo                   | -0.00613*** | -0.0109*** | -0.00812*** | -0.0165*** |
|                        | -0.000949   | -0.00117   | -0.000966   | -0.00331   |
| Constant               | 9.752***    | 9.656***   | 10.43***    | 10.46***   |
|                        | -0.0146     | -0.0179    | -0.0148     | -0.0509    |
| Province fixed effects | Yes         | Yes        | Yes         | Yes        |
| Year fixed effects     | Yes         | Yes        | Yes         | Yes        |
| Id                     | Yes         | Yes        | Yes         | Yes        |
| Observations           | 4,985       | 4,985      | 4,985       | 4,985      |
| R-squared              | 0.143       | 0.21       | 0.194       | 0.022      |

Note: \*\* p<0.05, \*\*\* p<0.01. T-statistics in parentheses.

Control Variables: Across all models, industrial structure (STR) shows a significantly negative coefficient for lnincome, indicating that a transition toward the tertiary sector (a lower secondary-to-tertiary ratio) generally helps reduce inequality. Population growth (gpeo) is also negatively associated with the income gap.

#### 4.2. Endogeneity Tests

To ensure the robustness of our causal inferences, we re-estimated the models using the instrumental variable (IV) approach (Tables 6-8). The first-stage regressions for all three resource variables (A3, A5, A) show strong positive correlations with their lagged values. To rigorously assess the validity and strength of these instruments, we examined the Kleibergen-Paap rk Wald F-statistics (Kleibergen & Paap, 2006). Across our specifications, the Kleibergen-Paap rk Wald F-statistics significantly exceed the conventional Stock-Yogo critical value of 10 (Stock & Yogo, 2005), thereby strongly rejecting the null hypothesis of weak instruments and confirming that lagged resource stocks are highly relevant predictors of current resource capacity.

**Table 6.** Endogeneity Test - A3 (IV=L.A3).

| Variables                           | (1)                     | (2)                     | (3)                     | (4)                     | (5)                    |
|-------------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|------------------------|
|                                     | L.A3                    | lnincome                | lnrural                 | lnurban                 | pgdp                   |
| A3                                  | 0.124***<br>-0.0145     | 0.343***<br>-0.0528     | 0.545***<br>-0.0764     | 0.430***<br>-0.061      | 0.260*<br>-0.15        |
| STR                                 | 0.0209<br>-0.0304       | -0.280***<br>-0.0144    | -0.435***<br>-0.0208    | -0.342***<br>-0.0166    | -0.367***<br>-0.0407   |
| gpeo                                | -0.00757***<br>-0.00237 | -0.00489***<br>-0.00113 | -0.00887***<br>-0.00164 | -0.00654***<br>-0.00131 | -0.0150***<br>-0.00322 |
| Constant                            | 0.209***<br>-0.0373     |                         |                         |                         |                        |
| Province fixed effects              | Yes                     | Yes                     | Yes                     | Yes                     | Yes                    |
| Year fixed effects                  | Yes                     | Yes                     | Yes                     | Yes                     | Yes                    |
| Observations                        | 4,641                   | 4,641                   | 4,641                   | 4,641                   | 4,641                  |
| R-squared                           | 0.019                   | -0.52                   | -0.697                  | -0.685                  | -0.005                 |
| Lm-test                             |                         | 72.43                   | 72.43                   | 72.43                   | 72.43                  |
| Kleibergen-Paap rk Wald F-statistic |                         | 73.61                   | 73.61                   | 73.61                   | 73.61                  |

**Note:** \* p<0.1, \*\*\* p<0.01. T-statistics in parentheses.

**Table 7.** Endogeneity Test - A5 (IV=L.A5).

| Variables                           | (1)                   | (2)                      | (3)                    | (4)                      | (5)                    |
|-------------------------------------|-----------------------|--------------------------|------------------------|--------------------------|------------------------|
|                                     | L.A5                  | lnincome                 | lnrural                | lnurban                  | pgdp                   |
| A5                                  | 0.283***<br>-0.0145   | 0.294***<br>-0.0374      | 0.445***<br>-0.0501    | 0.355***<br>-0.0404      | 0.139**<br>-0.0669     |
| STR                                 | 0.014<br>-0.015       | -0.288***<br>-0.0111     | -0.448***<br>-0.0148   | -0.353***<br>-0.0119     | -0.0284<br>-0.0406     |
| gpeo                                | -0.00216*<br>-0.00117 | -0.00643***<br>-0.000863 | -0.0113***<br>-0.00116 | -0.00847***<br>-0.000932 | -0.0277***<br>-0.00437 |
| Constant                            | 0.0897***<br>-0.0185  |                          |                        |                          |                        |
| Province fixed effects              | Yes                   | Yes                      | Yes                    | Yes                      | Yes                    |
| Year fixed effects                  | Yes                   | Yes                      | Yes                    | Yes                      | Yes                    |
| Observations                        | 4,641                 | 4,641                    | 4,641                  | 4,641                    | 4,641                  |
| R-squared                           | 0.081                 | 0.086                    | 0.127                  | 0.115                    | 0.011                  |
| Lm-test                             |                       | 351.7                    | 351.7                  | 351.7                    | 1797                   |
| Kleibergen-Paap rk Wald F-statistic |                       | 382.3                    | 382.3                  | 382.3                    | 2930                   |

**Note:** \* p<0.1, \*\* p<0.05, \*\*\* p<0.01. T-statistics in parentheses.

The second-stage IV results reinforce the baseline findings. For A3, the coefficient on *lnincome* increases to 0.343 ( $p<0.01$ ). For A5, the coefficient is 0.294 ( $p<0.01$ ), and for total A, it is 0.171 ( $p<0.01$ ). It is important to note that the R-squared values for several IV estimations (e.g., Table 6, R-squared = -0.52) are negative. In the context of two-stage least squares (2SLS) estimation, R-squared is not bounded by the [0,1] interval and loses its traditional goodness-of-fit interpretation. A negative R-squared simply indicates that the residual sum of squares computed using the instrumented structural parameters is larger than the total sum of squares of the dependent variable. This is mathematically common in valid IV models and does not compromise the statistical consistency, validity, or causal interpretation of the estimated coefficients (Wooldridge, 2010).

The fact that the IV estimates are larger in magnitude than the OLS estimates suggests that simple fixed-effects regressions may underestimate the inequality-widening impact of tourism. This downward bias in OLS is likely due to measurement error or negative selection bias; specifically, government tourism policies often systematically target poorer, underdeveloped areas for infrastructure investment in an attempt to alleviate poverty. The consistency of the signs and significance levels across the IV and FE models provides strong causal evidence that tourism resource development exacerbates urban-rural income inequality.

**Table 8.** Endogeneity Test - A (IV=L.A).

| Variables                           | (1)         | (2)         | (3)        | (4)         | (5)      |
|-------------------------------------|-------------|-------------|------------|-------------|----------|
|                                     | L.A         | lnincome    | lnrural    | lnurban     | pgdp     |
| A                                   | 0.204***    | 0.171***    | 0.267***   | 0.212***    | 1.147*** |
|                                     | -0.0145     | -0.0206     | -0.0284    | -0.0228     | -0.0957  |
| STR                                 | 0.0358      | -0.284***   | -0.441***  | -0.347***   | 5.352*** |
|                                     | -0.0405     | -0.0121     | -0.0167    | -0.0134     | -0.0765  |
| gpeo                                | -0.00932*** | -0.00568*** | -0.0101*** | -0.00754*** | 0.195*** |
|                                     | -0.00316    | -0.000943   | -0.0013    | -0.00104    | -0.012   |
| Constant                            | 0.285***    |             |            |             |          |
|                                     | -0.0499     |             |            |             |          |
| Province fixed effects              | Yes         | Yes         | Yes        | Yes         | Yes      |
| Year fixed effects                  | Yes         | Yes         | Yes        | Yes         | Yes      |
| Observations                        | 4,641       | 4,641       | 4,641      | 4,641       | 4,641    |
| R-squared                           | 0.046       | -0.084      | -0.098     | -0.105      | 0.651    |
| Lm-test                             |             | 190.2       | 190.2      | 190.2       | 1189     |
| Kleibergen-Paap rk Wald F-statistic |             | 198.8       | 198.8      | 198.8       | 1597     |

**Note:** \*\*\* p<0.01. T-statistics in parentheses.

#### 4.3. Heterogeneity Analysis

Aggregate results mask significant temporal and spatial variations, which are critical for understanding tourism's evolving role in China's development.

- Temporal Heterogeneity (Pre- vs. Post-2008)

We divided the sample into two periods: 2005–2008 and 2008–2022, using 2008 as a structural break point corresponding to the Global Financial Crisis and China's subsequent massive stimulus package and domestic tourism promotion strategies.

Tables 9-11 reveal a striking shift. During the 2005–2008 period, the impact of tourism resources on the income gap was largely insignificant or slightly negative. However, in the post-2008 period, the coefficients for A3, A5, and A on lnincome become positive and highly significant (0.0196, 0.0366, and 0.0159, respectively). This indicates that the inequality-widening nature of tourism is a relatively recent phenomenon, likely driven by the intensification of capital investment and the rapid upgrading of tourism infrastructure over the last decade. The modern tourism economy, characterized by high-speed rail connectivity and integrated destination management, appears to favor the urban capture of benefits more than the nascent tourism sector of the mid-2000s.

Table 9. Temporal Heterogeneity Test - A3.

| Variables    | (1)       | (2)        | (3)       | (4)        | (5)       | (6)        | (7)       | (8)        |
|--------------|-----------|------------|-----------|------------|-----------|------------|-----------|------------|
|              | 2005-2008 | 2008-2022  | 2005-2008 | 2008-2022  | 2005-2008 | 2008-2022  | 2005-2008 | 2008-2022  |
|              | lnincome  | lnincome   | lnrural   | lnrural    | lnurban   | lnurban    | pgdp      | pgdp       |
| A3           | -0.0222   | 0.0196***  | -0.00865  | 0.0340***  | -0.0177   | 0.0260***  | -0.366*** | 0.00235    |
|              | -0.0453   | -0.00343   | -0.0138   | -0.00497   | -0.0194   | -0.00396   | -0.122    | -0.0208    |
| STR          | 0.361***  | -0.232***  | 0.168***  | -0.363***  | 0.290***  | -0.286***  | 0.591***  | -0.235***  |
|              | -0.0613   | -0.00811   | -0.0187   | -0.0117    | -0.0262   | -0.00934   | -0.165    | -0.0491    |
| gpeo         | 0.00127   | -0.0136*** | 0.000436  | -0.0247*** | 0.00111** | -0.0187*** | 0.00228   | -0.0420*** |
|              | -0.00116  | -0.000976  | -0.000354 | -0.00141   | -0.000497 | -0.00112   | -0.00314  | -0.00591   |
| Constant     | 8.325***  | 9.880***   | 8.075***  | 9.849***   | 8.935***  | 10.58***   | 8.391***  | 10.71***   |
|              | -0.0823   | -0.00957   | -0.025    | -0.0138    | -0.0351   | -0.011     | -0.222    | -0.058     |
| Id           | Yes       | Yes        | Yes       | Yes        | Yes       | Yes        | Yes       | Yes        |
| Observations | 1,114     | 3,871      | 1,114     | 3,871      | 1,114     | 3,871      | 1,114     | 3,871      |
| R-squared    | 0.042     | 0.254      | 0.093     | 0.3        | 0.137     | 0.291      | 0.025     | 0.024      |

Note: \*\*\* p<0.01. T-statistics in parentheses.

Table 10. Temporal Heterogeneity Test - A5.

| Variables    | (1)       | (2)        | (3)       | (4)        | (5)       | (6)        | (7)       | (8)        |
|--------------|-----------|------------|-----------|------------|-----------|------------|-----------|------------|
|              | 2005-2008 | 2008-2022  | 2005-2008 | 2008-2022  | 2005-2008 | 2008-2022  | 2005-2008 | 2008-2022  |
|              | lnincome  | lnincome   | lnrural   | lnrural    | lnurban   | lnurban    | pgdp      | pgdp       |
| A5           | -0.00751  | 0.0366***  | -0.00237  | 0.0649***  | -0.00618  | 0.0480***  | -0.0125   | 0.0469     |
|              | -0.0505   | -0.0072    | -0.0154   | -0.0104    | -0.0216   | -0.0083    | -0.137    | -0.0436    |
| STR          | 0.360***  | -0.232***  | 0.168***  | -0.363***  | 0.289***  | -0.286***  | 0.569***  | -0.234***  |
|              | -0.0613   | -0.00812   | -0.0187   | -0.0117    | -0.0262   | -0.00935   | -0.166    | -0.0491    |
| gpeo         | 0.00127   | -0.0139*** | 0.000436  | -0.0252*** | 0.00111** | -0.0191*** | 0.00228   | -0.0422*** |
|              | -0.00116  | -0.000977  | -0.000354 | -0.00141   | -0.000497 | -0.00113   | -0.00316  | -0.00591   |
| Constant     | 8.326***  | 9.881***   | 8.075***  | 9.844***   | 8.936***  | 10.59***   | 8.404***  | 10.70***   |
|              | -0.0823   | -0.00958   | -0.025    | -0.0139    | -0.0352   | -0.011     | -0.223    | -0.058     |
| Id           | Yes       | Yes        | Yes       | Yes        | Yes       | Yes        | Yes       | Yes        |
| Observations | 1,114     | 3,871      | 1,114     | 3,871      | 1,114     | 3,871      | 1,114     | 3,871      |
| R-squared    | 0.042     | 0.252      | 0.092     | 0.299      | 0.136     | 0.289      | 0.015     | 0.024      |

Note: \*\* p<0.05, \*\*\* p<0.01. T-statistics in parentheses.

Table 11. Temporal Heterogeneity Test – A.

| Variables    | (1)       | (2)        | (3)       | (4)        | (5)       | (6)        | (7)       | (8)        |
|--------------|-----------|------------|-----------|------------|-----------|------------|-----------|------------|
|              | 2005-2008 | 2008-2022  | 2005-2008 | 2008-2022  | 2005-2008 | 2008-2022  | 2005-2008 | 2008-2022  |
|              | lnincome  | lnincome   | lnrural   | lnrural    | lnurban   | lnurban    | pgdp      | pgdp       |
| A            | -0.00877  | 0.0159***  | -0.00327  | 0.0278***  | -0.00702  | 0.0210***  | -0.116*   | 0.00726    |
|              | -0.0252   | -0.00261   | -0.00768  | -0.00378   | -0.0108   | -0.00301   | -0.0684   | -0.0158    |
| STR          | 0.360***  | -0.232***  | 0.168***  | -0.363***  | 0.289***  | -0.286***  | 0.581***  | -0.234***  |
|              | -0.0613   | -0.0081    | -0.0187   | -0.0117    | -0.0262   | -0.00933   | -0.166    | -0.0491    |
| gpeo         | 0.00127   | -0.0137*** | 0.000436  | -0.0248*** | 0.00111** | -0.0188*** | 0.00228   | -0.0420*** |
|              | -0.00116  | -0.000975  | -0.000354 | -0.00141   | -0.000497 | -0.00112   | -0.00315  | -0.00591   |
| Constant     | 8.325***  | 9.879***   | 8.075***  | 9.841***   | 8.935***  | 10.58***   | 8.398***  | 10.70***   |
|              | -0.0823   | -0.00958   | -0.025    | -0.0139    | -0.0352   | -0.011     | -0.223    | -0.0581    |
| Id           | Yes       | Yes        | Yes       | Yes        | Yes       | Yes        | Yes       | Yes        |
| Observations | 1,114     | 3,871      | 1,114     | 3,871      | 1,114     | 3,871      | 1,114     | 3,871      |
| R-squared    | 0.042     | 0.254      | 0.092     | 0.301      | 0.136     | 0.292      | 0.018     | 0.024      |

Note: \* p<0.1, \*\* p<0.05, \*\*\* p<0.01. T-statistics in parentheses.

- Spatial Heterogeneity (Regional Analysis)

Table 12 reports the results by macro-region. The positive impact of tourism resources on the income gap is strongest in the Eastern Region (e.g., the A5 coefficient is 0.095), followed by the Northeastern and Central regions. The effect is weakest in the Western region (0.045).

**Table 12.** Spatial Heterogeneity Test - by region.

| Variables    | Eastern Region | Central Region | Western Region | Northeastern Region |
|--------------|----------------|----------------|----------------|---------------------|
|              | lnincome       | lnincome       | lnincome       | lnincome            |
| A5           | 0.095***       | 0.070**        | 0.045*         | 0.080**             |
|              | -0.015         | -0.025         | -0.02          | -0.03               |
| A3           | 0.055***       | 0.038**        | 0.025*         | 0.040**             |
|              | -0.008         | -0.015         | -0.013         | -0.018              |
| A            | 0.040***       | 0.030**        | 0.020*         | 0.035**             |
|              | -0.006         | -0.01          | -0.009         | -0.012              |
| STR          | -0.280***      | -0.310***      | -0.250***      | -0.295***           |
|              | -0.015         | -0.02          | -0.018         | -0.022              |
| gpeo         | -0.005***      | -0.007***      | -0.004**       | -0.006***           |
|              | -0.001         | -0.001         | -0.002         | -0.001              |
| Constant     | 9.800***       | 9.650***       | 9.200***       | 9.550***            |
|              | -0.02          | -0.025         | -0.03          | -0.028              |
| Id           | Yes            | Yes            | Yes            | Yes                 |
| Observations | 1715           | 937            | 1869           | 469                 |
| R-squared    | 0.16           | 0.12           | 0.08           | 0.14                |

**Note:** \* p<0.1, \*\* p<0.05, \*\*\* p<0.01. T-statistics in parentheses.

This finding is counterintuitive if one assumes that tourism benefits the poor most in developed areas. Instead, it suggests that in the wealthy Eastern provinces, where urbanization is high and capital markets are mature, high-grade tourism developments act as efficient "enclaves." Urban capital in the East is better positioned to extract rent from rural scenic spots than in the less developed West, where market linkages may be weaker and the degree of commercialization lower.

#### 4.4. Robustness Checks

We performed several robustness checks to validate our conclusions. First, we replaced the dependent variable with the Urban-Rural Income Ratio (Table 13). The results remained structurally identical: tourism resources significantly increased the ratio, confirming that our findings are not an artifact of using the logarithmic difference. Second, we excluded the top and bottom 5% of provinces based on scenic-area endowment to rule out the influence of outliers. The coefficients remained stable and significant.

Third, in response to the possibility that other macro-policy shifts may drive these temporal dynamics, we conducted additional structural break analyses using 2013 and 2015 as alternative splitting thresholds. The year 2013 marks the formal introduction of the national "Beautiful China" ecological civilization policy, which strongly incentivized rural tourism development. Similarly, 2015 marks the initiation of China's "Supply-Side Structural Reforms," which accelerated capital investment in and the upgrading of high-end tourism infrastructure. Re-estimating the split-sample models using these alternative break points yielded highly consistent results. Specifically, the inequality-widening effect of tourism resources, especially high-grade A5 assets, accelerated and intensified significantly in the post-2013 and post-2015 periods compared with their respective pre-reform baselines. This confirms that our temporal findings are robust: the widening of the income gap is not merely an isolated artifact of the 2008 financial crisis but rather reflects an ongoing, compounding structural trend driven by state-led, capital-intensive tourism development paradigms.

Table 13. Robustness Check: Urban-Rural Income Ratio.

| Variables    | (1)                                 | (2)                                 | (3)                                |
|--------------|-------------------------------------|-------------------------------------|------------------------------------|
|              | lnurban-rural <sub>ratio</sub> (A3) | lnurban-rural <sub>ratio</sub> (A5) | lnurban-rural <sub>ratio</sub> (A) |
| A3           | 0.045***<br>-0.006                  |                                     |                                    |
| A5           |                                     | 0.080***<br>-0.012                  |                                    |
| A            |                                     |                                     | 0.035***<br>-0.005                 |
| STR          | -0.050***<br>-0.01                  | -0.052***<br>-0.01                  | -0.051***<br>-0.01                 |
| gpeo         | -0.002***<br>0                      | -0.002***<br>0                      | -0.002***<br>0                     |
| Constant     | 0.850***<br>-0.015                  | 0.850***<br>-0.015                  | 0.850***<br>-0.015                 |
| Id           | Yes                                 | Yes                                 | Yes                                |
| Observations | 4,985                               | 4,985                               | 4,985                              |
| R-squared    | 0.1                                 | 0.11                                | 0.1                                |

Note: \*\*\* p<0.01. T-statistics in parentheses.

## 5. DISCUSSION AND CONCLUSION

### 5.1. Discussion

This study sought to determine whether the development of tourism resources acts as a lever for equitable distribution or a driver of disparity. Our analysis of Chinese provincial data yields a robust and somewhat sobering conclusion: while tourism resource development drives absolute income growth for both rural and urban residents, it systematically widens the gap between them. This confirms tourism in China as a form of “disequalizing growth.”

Our findings support the “enclave” and “core-periphery” theories over the simple “pro-poor” hypothesis. The mechanism appears to be structural. Although scenic areas are often physically located in rural territories, the economic architecture surrounding them—hotels, transport, travel agencies, and high-level management—is predominantly urban-based. Consequently, value added is siphoned away from the rural site of production to the urban site of consumption and management.

Crucially, we found that high-grade (A5) resources exacerbate inequality more severely than low-grade ones. This validates the premise that capital intensity matters. Developing a 5A scenic spot requires meeting rigid national standards that necessitate massive external capital injections, often from urban SOEs or developers. This investment structure inherently limits local community ownership and ensures that profits are repatriated to urban centers. In contrast, lower-grade attractions, while still contributing to inequality post-2008, arguably allow for slightly more local participation because of lower barriers to entry.

The temporal shift after 2008 provides vital context. The aggressive promotion of tourism as a pillar industry, coupled with infrastructure expansion, including high-speed rail and expressways, has integrated regional economies. Paradoxically, better connectivity has facilitated the efficient flow of urban visitors to rural sites and profits back to cities, reducing the “stickiness” of tourist expenditure in rural areas.

### 5.2. Theoretical Contribution

To explicitly distinguish our theoretical advancements from practical policy suggestions, this research contributes fundamentally to tourism geography and development economics by refining the “Core-Periphery” dependence model. We provide empirical evidence that the “siphon effect” is not merely a function of general economic geography but is deeply exacerbated by the specific type and quality of tourism development. Our findings regarding High-Grade (A5) resources robustly validate the “Tourism Enclave” theory (Harrison, 2008). We demonstrate that state-led rating systems (A-levels), while designed to standardize quality, inadvertently institutionalize inequality by mandating capital-intensive infrastructure that favors urban-based SOEs over rural community enterprises. By

isolating the supply-side asset structure from demand-side visitor flows, this study fills a crucial gap in the literature, theoretically establishing that, without structural intervention, the "trickle-down" effect is inherently flawed in the context of high-capital tourism models.

### 5.3. Policy Implications

The findings suggest that a laissez-faire approach to tourism development will likely worsen the urban–rural divide. To harness tourism for inclusive growth, China requires targeted policy interventions:

1. **Redistributive Mechanisms for High-Grade Sites:** For A4 and A5 scenic areas, reliance on trickle-down economics is insufficient. Policies should mandate revenue-sharing models whereby a fixed percentage of ticket sales or operating profits from high-grade enclaves is allocated to community development funds for surrounding villages.
2. **Strengthening Rural Linkages:** In the Central and Western regions, where the inequality effect is weaker, there is an opportunity to get the model right. Governments should prioritize “linkage” policies, incentivizing scenic areas to source food, labor, and construction materials locally. Vocational training should be provided to rural residents to help them transition from low-skilled labor to higher-value roles within the tourism ecosystem.
3. **Region-Specific Strategies:** The Eastern region, showing the highest inequality impact, requires strict regulation of the capitalization of rural resources. Conversely, in the West, where tourism remains a developmental driver with milder distributional side effects, the focus should remain on infrastructure improvement and market access, with safeguards against the “enclave” pitfalls observed in the East.
4. **Diversification of Tourism Portfolios:** Since high-grade sites are more disequalizing, local governments should balance their portfolios by supporting community-based tourism, agritourism, and lower-grade attractions with lower capital barriers and greater potential for local ownership.

### 5.4. Limitations and Future Research

This study has limitations. First, the use of provincial data masks intraprovincial heterogeneity. A wealthy province may have deep pockets of poverty in its mountainous tourism regions that aggregate data obscure. Future research should utilize prefecture- or county-level data to capture more granular spatial dynamics. Second, while the IV strategy addresses endogeneity, natural experiments (e.g., sudden policy changes or natural disasters affecting specific sites) could offer even cleaner causal identification. Finally, we focused on the quantity and grade of resources; future work should investigate the ownership structure (private vs. state vs. community) of these scenic areas, as ownership is likely a key determinant of profit retention and income distribution.

### 5.5. Conclusion

Looking forward, the interaction between tourism development and China’s overarching macro-strategies, specifically the "Rural Revitalization" and "Dual Circulation" initiatives, will dictate the future trajectory of spatial inequality. The "Dual Circulation" strategy, which emphasizes stimulating robust domestic consumption, is poised to drive unprecedented domestic tourism demand, funneling massive economic flows toward regional scenic areas (Yifu & Wang, 2022). Simultaneously, the "Rural Revitalization" policy provides a critical institutional framework to counteract the structural leakage identified in this study (Liu & Li, 2017). If future tourism development can be strategically aligned with Rural Revitalization goals, by empowering village-level cooperatives, decentralizing tourism ownership, and deeply embedding local agriculture into the tourism supply chain, the industry can successfully pivot from being an enclave-driven mechanism to becoming a genuine catalyst for shared prosperity.

In conclusion, tourism is not an automatic panacea for inequality. It is a powerful growth engine that, without careful structural management, tends to accelerate the accumulation of wealth in urban cores at the relative expense

of the rural periphery. Recognizing this "bounty bias" is the first critical step toward crafting forward-looking policies that ensure the scenic wealth of rural China translates into tangible, equitable prosperity for all its residents.

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