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Research on the Integration of Tourism Resources in the Chengdu Metropolitan Area from the Perspective of Regional Synergy

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Abstract

The Chengdu Metropolitan Area is a concentric urban structure centered around Chengdu City, coordinating development with three surrounding cities. It focuses on cities with strong radiating and driving functions as its core, breaking down existing administrative boundaries. This facilitates communication and interaction, building a bridge for development across the region. As one of the most economically dynamic, innovative, and open regions in recent years, the Chengdu Metropolitan Area has strongly supported the high-quality development of the Chengdu-Chongqing Economic Circle and contributed significantly to the new pattern of Western Development. Despite its rapid growth, the Chengdu Metropolitan Area faces internal barriers, such as unclear spillover effects from the central city, inadequate traffic connectivity, weak industrial collaboration, and insufficient quality public services. This paper focuses on integrating tourism resources in the Chengdu Metropolitan Area, analyzing the current state of tourism development from the perspective of regional synergy, the value of tourism resource integration, and the mechanisms to support future development. Methodologically, the study adopts an embedded single-case design and combines descriptive statistics, a concentration index and a location quotient (LQ) to measure how tourism resources are distributed relative to economic mass across the four cities. Theoretically, it builds a core-periphery synergistic tourism resource integration (CP-STRI) framework that links factor mobility, spatial connectivity, product complementarity and institutional coordination, and it explicitly examines the administrative, distributional and fiscal resistance that may block synergy rather than assuming synergy to be unconditionally beneficial. The goal is to enable Chengdu to drive the joint development of the surrounding three cities, promoting interconnection, mutual benefits, and shared gains from various regional tourism resources. This seeks the

greatest common ground for regional synergy, facilitating better integration, protection, innovation, and development of tourism resources within the area.

Keywords

Chengdu Metropolitan Area, Regional Synergy, Tourism Resource Integration, Interconnection, Core-Periphery Structure, Location Quotient

1. Introduction

1.1. Background

Chengdu Metropolitan Area Development Plan states that the Chengdu Metropolitan Area is centered around Chengdu City and includes Deyang, Meishan, and Ziyang. With the convergence of major national strategies like the Belt and Road Initiative, the development of the Yangtze River Economic Belt, the new pattern for Western Development, and the construction of the Chengdu-Chongqing Twin City Economic Circle, the Chengdu Metropolitan Area is poised to leverage its economic potential at a higher level.

1.2. Problem Statement and Research Objectives

In recent years, due to significant improvements in national income levels and quality of life, people's desire to travel has increased. Furthermore, in the post-pandemic era, the emergence of "revenge travel" and "commando-style" traveling has contributed to the robust growth of the tourism industry. Popular tourist attractions have become the top choice for travelers during their leisure time. Many of these attractions face saturation or even overcapacity due to the surge in visitors. Meanwhile, lesser-known spots receive little attention, leading to underutilized facilities and wasted resources. This has resulted in the emergence of "hot" and "cold" tourist areas. Tourist hotspots can drive the development of surrounding regions by encouraging visitors from popular areas to explore other locations and attracting visitors to less-visited areas. This mutual exchange can boost tourism revenue, facilitate communication and collaboration across the tourism industry, and ensure the sustainable use of tourism resources. This approach maximizes the synergetic development potential of urban areas.

Despite this potential, the internal structure of the Chengdu Metropolitan Area is highly uneven. Chengdu concentrates the largest share of high-grade attractions and receives the overwhelming majority of visitor flows, whereas Deyang, Meishan and Ziyang remain weakly positioned and are frequently bypassed by tourists. The coexistence of over-capacity in core attractions and under-utilisation in peripheral ones suggests that the problem is not a lack of resources but a lack of coordination in how those resources are combined, positioned and circulated across administrative boundaries. Against this background, the present study pursues three objectives: 1) to diagnose how tourism resources are distributed and specialised

across the four cities; 2) to construct a theoretical framework capable of explaining why a strong core city does not automatically generate tourism spillovers; and 3) to identify the obstacles to—and the resistance against—cross-city tourism resource integration, and to propose corresponding safeguard mechanisms.

1.3. Structure of the Paper

To guide the reader, the remainder of this paper is organised as follows. Section 2 reviews domestic and international research on regional synergy and on tourism resource integration, and identifies the gaps that motivate this study. Section 3 develops the theoretical framework: it critically assesses the applicability of existing integration models to the Chengdu Metropolitan Area and proposes a context-specific core-periphery synergistic tourism resource integration (CP-STRI) framework together with testable propositions. Section 4 describes the research design, data sources and analytical methods. Section 5 provides an overview of the metropolitan area and its tourism resources. Section 6 analyses the feasibility of integration in terms of necessity, the synergy-integration relationship and locational advantages. Section 7 examines the obstacles to integration and, importantly, the resistance and risks that may undermine synergy. Section 8 proposes safeguard mechanisms that respond to each diagnosed obstacle. Section 9 presents the conclusions and expectations in this paper.

2. Literature Review

2.1. Research on Regional Synergy

2.1.1. Overseas Research

Foreign scholars began researching regional synergy early. The theory of regional synergy effects was first articulated by Adam Smith in "The Wealth of Nations." Subsequently, classical location theories, represented by the agricultural location theory of Johann Heinrich von Thünen and the industrial location theories of August Lösch and Alfred Weber, laid the foundation for this field (Cao, 2023). In Western academia, there is extensive research on regional synergy, primarily focusing on economics, policy, and transportation. However, studies integrating tourism are relatively scarce, and existing research in this area lacks depth. Araujo L M D and Bramwell Bstudied regional tourism development partnerships in Northeast Brazil, exploring the impact of socio-economic and political contexts on regional collaboration (de Araujo & Bramwell, 2002). Scholars such as Milne S, Speidel U, and Goodman T have suggested that various New Zealand government policies influence the interaction between tourism, information technology, and regional development. Therefore, the linkage development of regional tourism largely depends on national policies (Milne, Speidel, Goodman et al., 2005). Some scholars have proposed new pathways for the future development of regional synergy and tourism. By analyzing changes in international tourists' interest in the former Soviet states, especially in Central Asia, Rybina L emphasizes the importance of focusing on regional tourism and spreading internet technology across these regions to achieve synergy and exchange (Rybina, 2010).

2.1.2. Domestic Research

Compared to international efforts, domestic research on regional synergy theory started relatively late. Initially, the intersection of multiple disciplines and fields led to unclear boundaries. However, as understanding deepened, regional synergy theory began to integrate with tourism, playing a unique role in advancing the tourism industry. Luo Liangbiao was one of the early scholars in China to propose the theory of synergistic development. He formulated the strategic choice of "overall coordination and synergistic development" for the development pattern of Fujian's outward-oriented economy, focusing on functional, structural, and regional relationships. Later scholars combined regional synergy with tourism in their research, advocating for the integration of tourism development based on regional synergy. Li Yun analyzed the driving factors and influence mechanisms of regional tourism competition, focusing on five aspects: resource conditions, demand conditions, tourism environment, tourism management, and intervention opportunities. She also advocated for cooperation with other tourist destinations in areas such as tourism products, routes, transportation, and marketing to promote regional synergistic development in tourism. Qiu Jiqin pointed out that regional development theory is essentially a regional tourism cooperative development theory aimed at areas that are underdeveloped in tourism, with similar resources and no distinct competitive advantages. In the theoretical analysis, Qiu analyzes the necessity and feasibility of tourism development in the "Golden Triangle" region of Sichuan, Guizhou, and Chongqing, concluding that only through regional synergistic development can the sustained development of scenic areas be promoted.

2.2. Research on Tourism Resource Integration

2.2.1. Overseas Research

Foreign scholars focus their research on the integration of tourism resources primarily on the innovation of theoretical models and practical applications. Based on the fundamental characteristics of culinary cultural tourism resources, Tao S proposed a product model that combines culinary cultural tourism products with modern tourism trends, emphasizing productivity, humanization, and economic efficiency (Tao, 2013). Scholars such as Xin Wang, Dianting Wu, and Xiuqi Fang, achieved the maximization of resource utilization through resource integration. They explored the inevitability and necessity of tourism resource integration from a new perspective, based on the practice of tourism resource development and planning, and provided new insights on the foundations and methods of integration (Wang et al., 2005). Reid MDG developed a framework for integrating tourism into communities and conducted case studies to guide the planning, development, management, research, and evaluation of community tourism projects (Mitchell & Reid, 2001). Additionally, some scholars examine the conditions necessary for integrating tourism resources and analyze the possibilities for achieving such integration. Manente M emphasized that destination management involves integrating various resources, activities, and stakeholders through appropriate

policies and actions (Manente, 2008). The role of government policies and functions is crucial in integrating tourism resources, highlighting the government's dominant position in this process.

2.2.2. Domestic Research

Domestic scholars focus on analyzing regions through the lens of tourism resource integration models. Yuan Yaoqing conducted research on the integration and development of tourism resources in four counties in southwestern Hunan (Yuan, 2004). He proposed three major models: the spatial expansion integration model, the tourism image integration model, and the life cycle integration model. Peng Xiaoling believes that the model for integrating tourism resources in the Chang-Zhu-Tan urban agglomeration is influenced by factors such as tourism resources, regional economic development level, locational conditions, tourism service facilities, and tourism corridors (Peng, 2009). She proposes a regional tourism integration model suitable for the Chang-Zhu-Tan urban agglomeration from four aspects: spatial structure, products, market, and enterprises. Zhao Yan, considering the attributes, distribution, and development trends of tourism resources in the Central Plains tourism area, proposed three integration models: the symbiotic integration model, the shared integration model, and the inclusive growth integration model (Zhao, 2011). She also explored integration strategies from both government and enterprise perspectives.

2.3. Research Gaps and the Positioning of This Study

In summary, scholars at home and abroad have confirmed the necessity and feasibility of regional synergy and have proposed several tourism resource integration models, yet three gaps remain. First, most studies analyse regional synergy and tourism resource integration as two separate streams; the mechanisms through which synergy translates into integration are rarely specified. Second, existing integration models are largely context-bound: they were derived from county-level clusters or from relatively balanced multi-centre agglomerations, and their applicability to a strongly monocentric metropolitan area with a dominant core city has not been tested. Third, the literature overwhelmingly adopts a positive tone, treating synergy as an unconditionally desirable outcome, while the administrative, distributional and fiscal resistance that routinely obstructs cross-jurisdictional cooperation is seldom examined. This study positions itself against these three gaps: it develops an explicit conceptual framework tailored to a monocentric metropolitan area, measures the resource-economy mismatch empirically, and treats resistance as an analytical object rather than an omission.

3. Theoretical Framework

To avoid the superficial citation of models criticised above, this section first states the theoretical foundations on which the analysis rests, then critically evaluates why established integration models cannot be transferred directly to the Chengdu Metropolitan Area, and finally proposes a framework tailored to its core-periph-

ery structure.

3.1. Theoretical Foundations

3.1.1. Growth Pole Theory

Perroux argued that growth does not appear everywhere at once; it manifests in "poles" with variable intensity and spreads along different channels (Perroux, 1950). A growth pole generates two opposing forces: polarisation, which draws factors towards the pole, and spread (trickling-down), which diffuses benefits to the periphery. Chengdu functions precisely as such a pole within the metropolitan area: its Gross Domestic Product accounts for 79.3% of the total, and it holds both 5A-level scenic spots in the entire area. The theory is useful because it explains why spillovers are not automatic—spread effects operate only when transmission channels exist and when the pole has reached a stage where congestion costs exceed agglomeration benefits. Its limitation is that it was formulated for industrial and economic space and says little about how cultural and symbolic resources, which are place-bound and non-transferable, are recombined across jurisdictions.

3.1.2. Core-Periphery Theory

Friedmann conceptualised regional development as a core-periphery system in which the core dominates the periphery through six effects: dominance, information, psychological, modernisation, linkage and production effects (Friedmann, 1966). The Chengdu Metropolitan Area exhibits a textbook strong-core/weak-periphery configuration: the core monopolises high-grade resources, brand reputation and transport hubs, while the three peripheral cities supply largely undifferentiated products. However, Friedmann's model presumes a binary and somewhat zero-sum relationship. Tourism does not fit this presumption neatly, because tourist flows are two-directional and potentially reciprocal: a visitor attracted by Chengdu's brand may consume a peripheral city's heritage, and a niche resource such as the Sanxingdui Museum may pull visitors back towards the core's services. A framework for tourism integration must therefore allow for reciprocity, not only for domination.

3.1.3. Synergetics and Collaborative Governance

Haken's synergetics holds that an open system composed of sub-systems can self-organise, under the driving of order parameters, into a qualitatively new ordered state whose performance exceeds the sum of its parts—the "1 + 1 > 2" effect invoked throughout this paper (Haken, 1983). Applied to a metropolitan area, synergy requires that the system be open, that factors (tourist flows, capital, talent, technology and information) circulate freely across sub-system boundaries, and that a shared order parameter—in tourism, a common destination image or joint brand—coordinate otherwise independent actors. Crucially, synergetics also implies that if the system is closed or factor circulation is blocked, the sub-systems simply compete rather than self-organise. This provides the theoretical basis for treating institutional coordination and administrative barriers as core analytical

variables rather than as background noise.

3.2. Critical Assessment of Existing Integration Models

Three frequently cited integration models are examined here against the specific conditions of the Chengdu Metropolitan Area, and all three prove only partially transferable.

Yuan Yaoqing's three models—spatial expansion, tourism image and life cycle integration—were derived from four counties in southwestern Hunan. Their implicit unit of analysis is the county, where administrative coordination is comparatively easy and resource endowments are broadly similar (Yuan, 2004). The Chengdu Metropolitan Area, by contrast, spans four prefecture-level cities with a 21-fold gap in Gross Domestic Product between Chengdu and Ziyang; a strategy of "spatial expansion" alone cannot redistribute flows when the core's gravitational pull is so much stronger.

Peng Xiaoling's four-dimensional model for the Chang-Zhu-Tan agglomeration—spatial structure, products, market and enterprises—presupposes three cities of broadly comparable size that can integrate as near-peers (Peng, 2009). That presupposition does not hold here: with Chengdu contributing 79.3% of Gross Domestic Product, the Chengdu Metropolitan Area is monocentric rather than polycentric, and a model built on peer-to-peer coordination offers little guidance on how a dominant core should deliberately transfer benefits outwards.

Zhao Yan's three models for the Central Plains—symbiotic, shared and inclusive-growth integration—emphasise the sharing of similar resources among culturally diverse but individually weak destinations (Zhao, 2011). Because the Chengdu Metropolitan Area suffers from the opposite problem, namely cultural homogeneity rather than diversity, a purely "sharing" logic risks amplifying sameness instead of reducing it. What the area needs is not the sharing of similar resources but the complementary positioning of differentiated ones. This is precisely the gap the framework below is designed to fill.

3.3. A Context-Specific Framework: Core-Periphery Synergistic Tourism Resource Integration (CP-STRI)

Synthesising the three foundations and responding to the limitations identified above, this paper proposes the core-periphery synergistic tourism resource integration (CP-STRI) framework, which models integration as the joint product of four interacting mechanisms.

1) Factor mobility mechanism. Tourist flows, capital, talent, technology and information must be able to cross municipal boundaries. Because cultural resources themselves are immobile, mobility applies to the consumers and the production factors that activate them. Under a monocentric structure, mobility alone tends to reinforce polarisation; its direction therefore has to be steered.

2) Spatial connectivity mechanism. High-capacity transport corridors, cross-city tourist loop routes and shared visitor services reduce the friction of distance

and convert potential accessibility into actual visitor circulation. Connectivity is the necessary precondition for the other three mechanisms: without it, neither flows nor complementarity can materialise.

3) Product complementarity mechanism. Given the area's cultural homogeneity, integration should be organised around differentiation rather than similarity—each city is assigned a distinct thematic role within a shared destination brand, so that the products substitute less and combine more. Complementarity is the substantive content of integration and the direct antidote to homogenisation.

4) Institutional coordination mechanism. A standing cross-city body, agreed cost-sharing and benefit-sharing rules, joint marketing budgets and compatible statistics convert voluntary goodwill into durable cooperation. This mechanism moderates all the others: where it is absent, factor mobility is likely to produce backwash effects that widen rather than narrow inter-city gaps.

The four mechanisms are not parallel options but a causal chain: connectivity enables mobility, mobility creates the material for complementarity, complementarity generates the joint gains that make cooperation worthwhile, and institutional coordination sustains the whole cycle by containing the distributional conflict that otherwise dissolves it. The expected outcomes are a stronger metropolitan-wide destination brand, faster tourism growth in peripheral cities, higher total regional tourism revenue and more sustainable use of resources. Administrative fragmentation, free-riding incentives and fiscal asymmetry enter the framework as moderators that can suppress the entire chain.

3.4. Research Propositions

The framework yields four propositions that structure the empirical analysis and can be tested in future research once panel or visitor-flow data become available.

P1: Spatial connectivity is positively associated with the magnitude of Chengdu's tourism spillover to Deyang, Meishan and Ziyang; where cross-city rapid corridors and loop routes are absent, attractions outside the core remain under-visited even when they are of comparable quality.

P2: Product complementarity mediates the relationship between resource similarity and inter-city competition: the more strongly the four cities differentiate their thematic positioning, the weaker the competitive pressure generated by a given degree of resource homogeneity.

P3: Institutional coordination positively moderates the effect of factor mobility on integration performance. In the absence of a cross-city coordination and benefit-sharing mechanism, freer factor mobility tends to strengthen polarisation (backwash) rather than spread, because factors continue to gravitate towards the already-advantaged core.

P4: Peripheral cities whose tourism resources are rich relative to their economic mass—that is, cities with a location quotient clearly above one—hold the greatest unrealised integration potential, and targeted visibility-enhancing measures should yield the highest marginal return for them.

4. Methodology

4.1. Research Design

Following Yin's (2014) case study logic, this study adopts an embedded single-case design with a descriptive-diagnostic purpose. The Chengdu Metropolitan Area constitutes the case; the four cities (Chengdu, Deyang, Meishan and Ziyang) constitute the embedded units of analysis, which permits both cross-unit comparison and within-case pattern matching. The design is explanatory in intent—it asks why the core city's spillover is weak and what blocks integration—but it remains diagnostic rather than confirmatory, because the available data do not permit formal causal identification. Accordingly, the propositions in Section 3.4 are used to organise the evidence and are offered as hypotheses for subsequent testing rather than as tested findings.

4.2. Data Sources and Collection Procedures

Three types of secondary data were collected, and each was cross-checked before use.

First, economic and industrial data. Gross Domestic Product, industrial value added and service-industry value added for the four cities were obtained from the official website of the Sichuan Provincial Government and from the 2023 statistical communiqués on national economic and social development published by the four municipal governments. These data underpin Table 1 and the location quotient computation in Section 5.1.

Table 1. The GDP and proportion of the four cities in the Chengdu metropolitan area.

Region	GDP (Billion)	Rate	Growth Rate
Chengdu	22,074.72	79.3%	6.7%
Deyang	3014.41	10.8%	6.7%
Meishan	1737.00	6.2%	6.2%
Ziyang	1019.22	3.7%	5.8%

Note: The data is sourced from the official website of the Sichuan Provincial Government; n: which themes are shared by how many cities.

Second, tourism resource data. The inventory of A-level scenic areas was compiled from the lists published by the Sichuan Provincial Department of Culture and Tourism and the four municipal culture and tourism bureaus, with 2023 as the cut-off year. Records were collected at the scenic-area level, de-duplicated where a single site appeared in more than one list, and then classified by city and by grade (5A, 4A, 3A, 2A). This yields 95 A-level scenic areas in Chengdu, 33 in Meishan, 23 in Deyang and 16 in Ziyang—167 in total for the metropolitan area.

Third, policy and planning documents. The Chengdu Metropolitan Area Development Plan, the relevant documents on the Chengdu-Chongqing Twin City

Economic Circle, and the transport plans specifying the cross-city corridors ("nine highways and eighteen expressways" between Chengdu and Deyang, "seven highways and sixteen expressways" between Chengdu and Meishan, "four highways and nine expressways" between Chengdu and Ziyang) were read to establish the institutional and infrastructural context.

The collection procedure followed three steps: 1) retrieval and de-duplication of the official scenic-area inventories; 2) cross-verification of economic indicators against the published statistical communiqués; and 3) coding of each resource by attribute (natural or cultural) and by theme (ancient Shu civilisation, Taoist culture, Three Kingdoms culture, historic town settlement, mountain-and-water landscape, and distinctive industry or rural tourism). The coding scheme is the basis for the homogeneity assessment in Table 2.

Table 2. Distribution of tourism resource themes across the four cities.

Theme	Chengdu	Deyang	Meishan	Ziyang	Cities sharing
Ancient Shu civilisation	✓	✓	—	—	2
Taoist culture	✓	✓	✓	—	3
Three Kingdoms culture	✓	—	—	—	1
Historic towns and settlements	✓	—	—	—	1
Mountain and water landscapes	✓	✓	✓	✓	4
Distinctive industry and rural tourism	✓	✓	—	✓	3

Note: "✓" indicates that the city holds at least one representative resource of the theme; "—" indicates none was identified in the 2023 inventory. The overlap column reports how many of the four cities share the theme.

4.3. Analytical Methods

Four methods were applied in sequence, moving from description to diagnosis.

1) Descriptive statistics. The number and grade composition of A-level scenic areas and the Gross Domestic Product of each city are described to expose the unevenness of resource distribution and of economic mass.

2) Concentration (primacy) index. The share of the largest city is computed as $CR1 = R_{max}/\Sigma R$, where R is the number of A-level scenic areas. CR1 expresses how strongly tourism resources are concentrated in the core and provides a single summary measure of the structural imbalance described in Section 5.2.1.

3) Location quotient (LQ). To compare resource endowment against economic mass, the location quotient is computed as $LQi = (ri/R)/(gi/G)$, where ri is city i's number of A-level scenic areas, R the metropolitan total, gi city i's Gross Domestic Product and G the metropolitan total. An LQ above one indicates that a city holds more tourism resources than its economic size alone would predict—that is, resources that are relatively abundant yet under-commercialised—whereas an LQ below one indicates the opposite. This measure is what allows the analysis to dis-

tinguish "few resources" from "under-used resources", a distinction that raw counts alone cannot support.

4) Thematic coding and cross-city comparison. Resources are assigned to the six themes listed in Section 4.2 and arranged in a theme-by-city matrix (Table 2). The degree of overlap across cities within a single theme is read as evidence of homogenisation, and the computed LQ values are compared across cities to identify where the marginal return to integration is highest.

4.4. Limitations of the Data and Methods

Four limitations should be stated in advance so that the findings are not over-read. First, the analysis relies on secondary data; no first-hand visitor-flow data (mobile signalling data, online travel agency bookings or ticket records) were available, so the spillover effects discussed in Sections 6 and 7 are inferred from resource distribution, transport plans and policy documents rather than measured directly. Second, counts of A-level scenic areas measure the quantity and official grading of resources, not their actual attractiveness, carrying capacity or visitor satisfaction; a single 5A site may outweigh dozens of lower-grade ones. Third, the thematic coding involves interpretive judgement, and different coding rules could shift the perceived degree of homogenisation. Fourth, as a single-case study with no formal causal identification, the propositions in Section 3.4 remain to be tested; their generalisation to other monocentric metropolitan areas should be made with caution.

5. Overview of Tourism in the Chengdu Metropolitan Area

5.1. Overview of the Chengdu Metropolitan Area

The Chengdu Metropolitan Area is located in the inner circle of the Chengdu Plain Economic Zone and consists of four cities: Chengdu, Deyang, Meishan, and Ziyang. Within this area, there are 17 districts and 18 counties, covering a total of 33,100 square kilometers. It is one of the most important metropolitan areas in Western China (See Figure 1). The Chengdu Metropolitan Area boasts a superior ecological background and distinct landscape settlement characteristics, featuring a "three zones, two mountains; three axes, three belts" spatial layout. Located at the intersection of the Belt and Road Initiative, the Yangtze River Economic Belt, and the New Western Land-Sea Corridor, it serves as a strategic link for coordinating the development of northern and southern Sichuan. It is a key engine for promoting the construction of an economic fourth pole.

According to statistics, in 2023, the gross domestic product (GDP) of the Chengdu Metropolitan Area reached 2784.535 billion yuan, accounting for 46.3% of the province's total. There are significant differences in GDP among the four cities (See Table 1). It is projected that by 2025, the Chengdu Metropolitan Area's total economic output will exceed 3.3 trillion yuan. As a typical agglomerative metropolitan area, the Chengdu Metropolitan Area effectively gathers resources and boasts abundant, high-quality human resources. It holds a significant share in population, regional GDP, and total trade imports and exports, with a prominent

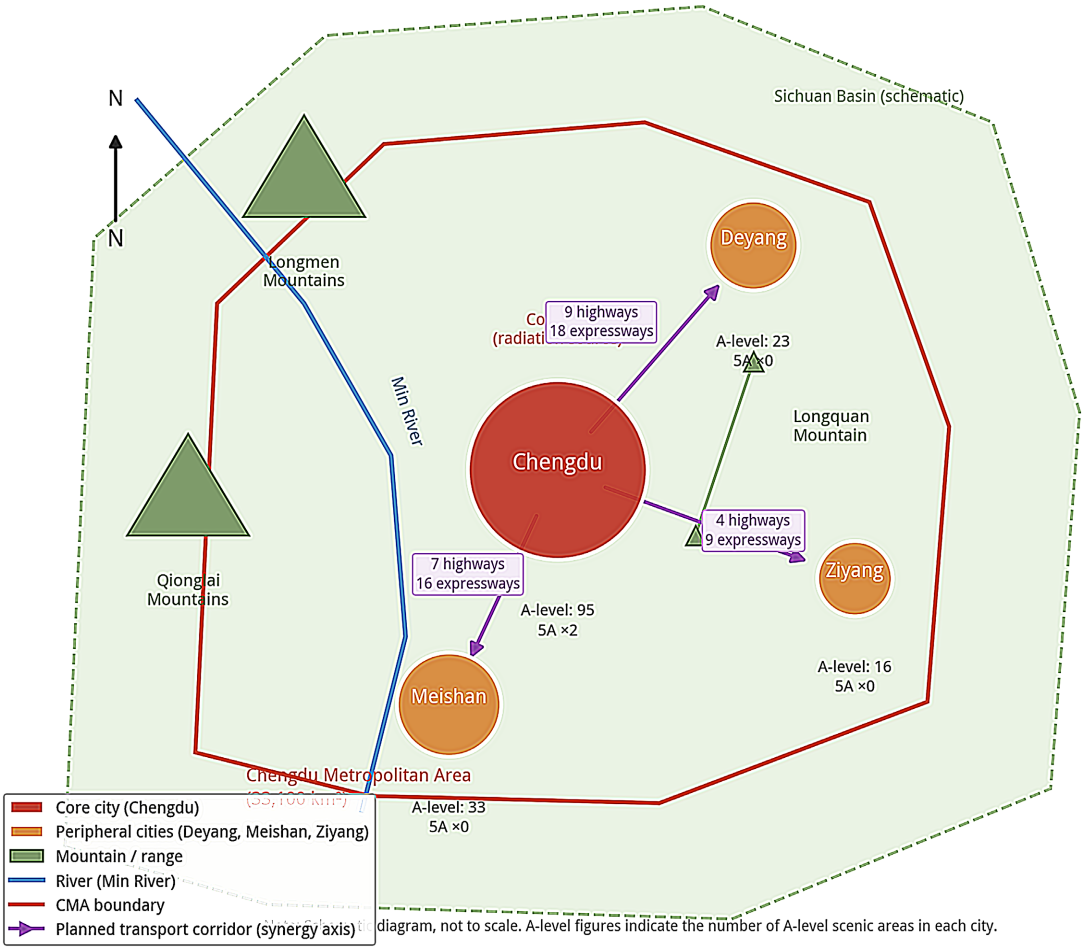


Figure 1. Location and spatial structure of the Chengdu Metropolitan Area (schematic, not to scale). The red boundary delimits the metropolitan area; arrows indicate the planned cross-city transport corridors. Figures in italics give the number of A-level scenic areas per city.

position within the metropolitan area. With the development of the Belt and Road Initiative, the Chengdu Metropolitan Area is transitioning from an economic hinterland to an open frontier. External infrastructure and transportation facilities are gradually improving, and the total volume of imports and exports is steadily increasing. At the same time, the Chengdu Metropolitan Area is focusing on the road network principle of "building major corridors externally, constructing major networks internally, and jointly establishing major hubs." By developing communication and coordination mechanisms and planning integrated city-level networks, it is implementing a rapid transit network system. This includes the "Nine Highways and Eighteen Expressways" between Chengdu and Deyang, the "Seven Highways and Sixteen Expressways" between Chengdu and Meishan, and the "Four Highways and Nine Expressways" between Chengdu and Ziyang. This accelerates the coordinated operation of the twin cities. This series of measures helps establish a collaborative and mutually beneficial industrial circle, an open and cooperative network, an efficient commuting circle, and a convenient living circle, thereby accelerating the development of the "four circles."

Concentration of Tourism Resources and the Location Quotient Analysis

To move beyond a purely descriptive account, the resource endowment of each city is compared with its economic mass using the indicators introduced in Section 4.3. Table 3 reports the number of A-level scenic areas, each city's share of the metropolitan total, its share of metropolitan Gross Domestic Product, and the resulting location quotient.

Table 3. Distribution of A-level scenic areas, economic share and location quotient by city.

City	A-level scenic areas (ri)	Share of resources (%)	Share of GDP (%)	Location quotient (LQi)
Chengdu	95	56.9	79.3	0.72
Deyang	23	13.8	10.8	1.27
Meishan	33	19.8	6.2	3.17
Ziyang	16	9.6	3.7	2.62
Total	167	100.0	100.0	—

Note: The location quotient is computed as LQi = (ri/R)/(gi/G) using the data in Table 1 and the 2023 A-level scenic area inventory. LQ > 1 indicates that a city holds more tourism resources than its economic size alone would predict.

Two results deserve emphasis. First, the concentration index CR1 equals 95/167 = 56.9%, confirming that more than half of the graded resources in the metropolitan area lie within a single city; this is the quantitative expression of the monocentric structure discussed in Section 3.1. Second, and more revealing, the location quotients diverge sharply from the raw counts. Chengdu's LQ is only 0.72, meaning that despite holding the largest absolute number of resources, it holds fewer than its economic weight would predict—its prominence rests on quality and reputation rather than on relative resource abundance. Meishan (3.17) and Ziyang (2.62), by contrast, possess resources that are rich relative to their economic mass but that remain weakly commercialised and poorly recognised. This distinction matters practically: it indicates that the integration problem is not simply that the periphery lacks resources, but that peripheral resources are under-utilised. Consistent with proposition P4, visibility-enhancing and connectivity measures should therefore yield the highest marginal return in Meishan and Ziyang, and these two cities are the priority targets of the mechanisms proposed in Section 8.

5.2. Overview of Tourism Resources in the Chengdu Metropolitan Area

5.2.1. Analysis of the Tourism Resource Survey Results

According to statistics, Chengdu City has 95 A-level tourism resources, including two 5A-level scenic spots: the Qingcheng Mountain-Dujiangyan Scenic Area and Anren Ancient Town Scenic Area, the only 5A-level spots in the Chengdu Metropolitan Area. Deyang City has 23 A-level tourism resources but no 5A-level scenic

spots. Similarly, Meishan City and Ziyang City have no 5A-level scenic spots, with their A-level tourism resources totaling 33 and 16, respectively.

The Chengdu Metropolitan Area has many A-level tourist attractions, but their distribution is uneven. Chengdu City's tourism resources account for half of those in the metropolitan area. Meishan City, Ziyang City, and Deyang City have fewer tourism resources than Chengdu. Chengdu's primacy is evident, as the provincial capital has superior tourism infrastructure and resources compared to other cities. Chengdu also enjoys high recognition and reputation, with unique offerings such as the enduring culture of the Three Kingdoms, the tranquility of Taoist mountains, thriving urban districts, and flavorful Sichuan cuisine—all contributing to a unique Chengdu identity. Chengdu City's tourism resources are clearly positioned, and its unique attractions draw visitors from across the country. In contrast, Meishan, Ziyang, and Deyang lack 5A-level scenic spots and have fewer tourism resources overall, with relatively weak attraction and unclear positioning. Although the remaining three cities in the Chengdu Metropolitan Area lack significant tourism advantages compared to Chengdu, Deyang's Sanxingdui Museum and Ziyang's lemon industry showcase the region's unique characteristics. In future tourism development, the regions should collaborate, benefit mutually, and fully leverage resource integration to highlight synergies. While utilizing common attributes across the areas, it's also important to emphasize the uniqueness of each region's tourism resources, ultimately crafting a distinctive tourism image within the Chengdu Metropolitan Area.

5.2.2. Characteristics of Tourism Resources

An overview of the tourism resources in the Chengdu Metropolitan Area reveals that they are divided into two main categories: natural and cultural. Their characteristics are as follows:

Natural Tourism Resources—Abundant Reserve and Picturesque Landscapes

The Chengdu Metropolitan Area is located in the heart of the Sichuan Basin, with the four cities occupying most of the Chengdu Plain. The region features diverse terrain, primarily consisting of plains, along with mountains, hills, and plateaus. On the western edge of the Chengdu Metropolitan Area lie the Longmen Mountains and the Qionglai Mountains, with the Min River serving as the dividing line between the two ranges, situated to the north and south respectively. As a result, the Chengdu Metropolitan Area boasts abundant natural tourism resources, featuring various famous mountains and peaks. Notable among them are Mount Qingcheng, renowned for its tranquility; Xiling Snow Mountain, with its unique snowy landscapes; and the Jiulong Mountain—Lutang Mountain tourist area, which blends nature with leisure. Other notable mountains include Tiantai Mountain, Yinghua Mountain, Wawu Mountain, Pengzu Mountain, and Lao'e Mountain. The picturesque and magnificent mountain landscapes, coupled with the region's dense network of waterways, create vivid tourism vistas within the Chengdu Metropolitan Area.

Cultural Tourism Resources—Distinctive and Long-Standing

As cities with a long history and rich cultural heritage, Chengdu, Deyang, Meishan, and Ziyang boast numerous cultural tourism resources. These include Sanxingdui, Wuhou Shrine, Du Fu Thatched Cottage, Sansu Shrine, and Anyue Stone Carvings, among others, forming the distinct characteristics of cultural tourism resources in the Chengdu Metropolitan Area.

Shu culture features prominently

The Chengdu Metropolitan Area is a significant birthplace of Shu culture, with numerous ancient Shu cultural relics in the region. Shu culture is essentially an inland agricultural culture, with its origins and evolution closely linked to water management. The tourism resources centered around this culture include the Dujiangyan Irrigation System, the ancient city of Guanxian, and the Li Bing Cultural Tourist Area. At the same time, the region also features some of the earliest developed commercial districts, including Jinli, which is the oldest and most commercial street in the history of Western Shu, and Kuanzhai Alley, which was built during the Qing Dynasty. Other ancient towns with rich Shu cultural charm include Huanglongxi, Anren Ancient Town, Pingle Ancient Town, Luodai Ancient Town, and Yuantong Ancient Town. Additionally, the area is home to sites with unique ancient Shu cultural characteristics, such as the Sanxingdui Ruins, the Baodun Ruins, and the Jinsha Ruins.

Deep Taoist cultural heritage

As a traditional religion of the Chinese nation, Taoist culture has a profound influence on China and is a significant component of traditional Chinese culture, often hailed as a treasure of Eastern culture. Heming Mountain, known as the "Sacred Land of Taoist Origins," is located in Dayi County within the Chengdu Metropolitan Area, with an elevation of over 1000 meters. It is named for its crane-like shape, presence of stone cranes, and habitat for celestial cranes. Mount Qingcheng, a famous Taoist mountain in China and the sacred site of the Quanzhen Longmen Sect, is rich in Taoist culture. It houses Taoist structures such as Tianshi Cave, Zushi Hall, Shangqing Palace, and Laojun Pavilion. In Meishan, the Taoist sacred Wawu Mountain stands prominently at an elevation of 2830 meters in the Qinyi River Basin. The Qiang people of Qinyi facilitated the spread of Taoism in the region, infusing it with the cultural essence of ethnic minorities. Additionally, the Chengdu Metropolitan Area is home to other Taoist sites such as Qingyang Palace, Xinjin Chunyang Temple, Xinjin Laojun Mountain, and Deyang Yuhuang Temple.

A Diverse Array of Distinctive Industrial Cultures Flourish

Although the tourism resources within the Chengdu Metropolitan Area are generally similar, research indicates that the tourism resources in each city, district, and county still differ. A diverse array of distinctive industries flourishes in the region. Qionglai is renowned for its brilliant and unique wine culture, exceptional brewing conditions, and numerous famous wine brands. Throughout history, many literati have penned memorable poems about Qiong wine, including ancient figures like Zhuo Wenjun, Sima Xiangru, Li Baiyao, Wei Zhuang, Lu You,

Li Shangyin, Du Fu, and modern writers such as Zhu Ziqing and Guo Moruo. The tourism resources centered around Qiong wine are drawing visitors to the area. Known as the "Lemon Capital of China," Anyue is renowned nationwide for its high-yielding, high-quality, and resilient lemons. Anyue's lemons dominate over 80% of the national market share and it is the only county in the country designated as a commercial production base for lemons. Activities such as sightseeing, planting, picking, and health tourism experiences have positioned Anyue as a rural tourism area centered around lemons. As one of the first Sichuan intangible cultural heritage brands, Mianzhu New Year Paintings have developed from the Northern Song Dynasty to the present day, attracting numerous tourists each year to the New Year Painting Village to experience various folk customs and create traditional New Year paintings. Chongzhou Bamboo Art Village, with its bamboo architecture and bamboo culture as its foundation, has expanded into sectors such as tourism, accommodation, and handicraft experiences. It has been developed into an "Innovative and Creative Demonstration Zone for Cultural and Creative Tourism," not only boosting the local economy but also revitalizing tourism resources.

5.2.3. Thematic Coding and the Degree of Cross-City Overlap

Applying the coding scheme of Section 4.2, the resources described above are rearranged into a theme-by-city matrix (Table 2). The matrix converts the impression that "resources are similar" into an observable patter.

The matrix shows that overlap is not uniform. Mountain-and-water landscapes are present in all four cities and Taoist culture in three, so these two themes carry the highest risk of direct substitution: a visitor who has seen one sacred Taoist mountain has a weak reason to see another. Ancient Shu civilisation is shared by Chengdu and Deyang but is anchored by qualitatively different flagship sites (the Jinsha and Baodun ruins versus Sanxingdui), so its substitutability is lower than its count suggests. Conversely, Three Kingdoms culture, historic-town settlements and most distinctive industries are effectively exclusive to one city each; these are the resources on which a differentiation strategy can most plausibly be built. This pattern directly informs the product-complementarity mechanism of the CP-STRI framework and the differentiated positioning proposed in Section 8.2.

6. Feasibility Analysis of Integrating Tourism Resources from the Perspective of Regional Synergy

6.1. The Necessity of Integrating Tourism Resources

The Chengdu Metropolitan Area benefits from a favorable geographical location, convenient transportation, high-quality tourism resources, and a wide variety of attractions, providing a solid foundation for tourism development. However, there are significant disparities in the distribution of tourism resources among the cities within the Chengdu Metropolitan Area. Chengdu, Deyang, Meishan, and Ziyang face challenges of unbalanced and insufficient development in the tourism

sector. At the same time, since the Chengdu Metropolitan Area is currently in its initial stages, it has not yet achieved the agglomeration effect seen in more mature metropolitan areas. Most resources still tend to flow towards Chengdu, which has stronger resource endowments, while the spread to the surrounding three cities is relatively limited. The spillover effects of the central city are not very evident. Additionally, the high similarity of tourism resources within the Chengdu Metropolitan Area and the lack of diversity in tourism products could lead to increased competition among the four cities if resources are not integrated. This would hinder Chengdu's ability to drive development, further widening the gap between the cities. It would also negatively impact the overall cooperative development of the tourism industry and render the integrated tourism development of the Chengdu Metropolitan Area ineffective.

Therefore, to further unleash the vitality of the tourism industry in the Chengdu Metropolitan Area, enhance the industry's capacity, and cultivate a favorable business environment for tourism, it is necessary to effectively integrate the tourism resources of the Chengdu Metropolitan Area. In the process of integration, it is essential to continuously improve the tourism infrastructure in each region and optimize the tourism development and business environment. This will help the Chengdu Metropolitan Area establish more renowned and reputable tourism IPs, create higher-quality tourism brands, and enhance its recognition nationwide and globally. By integrating tourism resources, the accumulation of tourism elements can be accelerated to meet the needs of upgrading the tourism industry. This will highlight the unique historical, cultural, aesthetic, and educational values of these resources, allowing more people to understand Shu culture and appreciate the beauty of the Shu region. Through cooperative, complementary integration, this will achieve high-quality development of the tourism industry in the Chengdu Metropolitan Area.

6.2. The Relationship between Regional Synergy and Tourism Resource Integration

Regional synergy is essential for integrating tourism resources and serves as the foundation for the Chengdu Metropolitan Area to achieve high-quality, integrated development. Through cross-regional synergistic development, the division of labor, collaboration, and shared integration between regions can be achieved. This approach considers the characteristics and interests of all parties while actively seeking relevant strategies and measures. By leveraging Chengdu's advantageous position, it can drive the in-depth development of Deyang, Meishan, and Ziyang, narrowing regional disparities and realizing more coordinated regional synergistic development. On the basis of regional synergy, enhance the efficiency of tourism resource integration in each area and establish a robust development mechanism for integrating tourism resources. Chengdu should play a leading and exemplary role, addressing the tourism shortcomings of less advantaged areas by directing more flow to them. This will facilitate the concentration of various ele-

ments within the metropolitan area and benefit all regions through its radiating and driving effect. Regional synergy will promote infrastructure interconnection, facilitating the construction of comprehensive and rapid transportation corridors and improving transportation accessibility for tourists within interconnected regions. This will also enhance the exchange and connectivity of tourism resources, benefit the creation of market-friendly tourism products, and achieve locational advantages where 1 + 1 is greater than 2.

The integration of tourism resources requires essential elements such as transportation, talent, markets, and technology. Regional synergy acts as a bridge, maximizing the utility of these elements. Relying on each region's resource advantages and utilizing regional coordination mechanisms can enhance the circulation of various elements within the area. This will help build a strong and dynamic growth pole, create unique tourism routes, and provide higher-quality tourism products. Efforts should focus on strengthening tourism infrastructure and promoting the tourism image, particularly highlighting the ancient Shu culture, Taoist culture, and other aspects of the Chengdu Metropolitan Area. This will make the tourism brand more representative and maximize the value of tourism resource integration.

6.3. Advantages of Integrating Tourism Resources

6.3.1. Factors of Production

The Chengdu Metropolitan Area, the most important economic zone in the Chengdu Plain region, is one of the most economically dynamic, innovative, and open regions in the country. It has a strong foundation for integrating tourism resources. The region's innovation advantages are evident, with a leading number of research institutions and personnel. It has 72 higher education institutions and over 120 national-level innovation platforms, such as key national laboratories. Additionally, major national strategies like the Belt and Road Initiative, the new Western Development pattern, the Yangtze River Economic Belt development, and the Chengdu-Chongqing Economic Circle have enabled the Chengdu Metropolitan Area to attract high-quality labor resources and exhibit strong economic development momentum. In regional synergy, areas leverage their advantages by drawing from others' strengths and incorporating them into collaborative development. This approach complements weaknesses and maximizes the value of resources. Such synergy is crucial for integrating tourism resources. The aggregation of these elements enhances the vitality and potential of the tourism industry in the Chengdu Metropolitan Area, forming a unique tourism image through complementary integration.

6.3.2. Demand Factors

As economic levels rise, people's expectations for a better life increase daily. In a busy and stressful work environment, individuals hope to escape the fast-paced lifestyle, relieve physical and mental stress, and integrate with nature and culture. At this point, the tourism industry plays an indispensable role. Effectively inte-

grating tourism resources requires promptly adjusting development strategies and launching tourism IPs that align with current trends. The Chengdu Metropolitan Area leverages Chengdu's central role to maximize the comparative advantages of Deyang, Meishan, and Ziyang, creating a development pattern characterized by collective leadership, interconnected axes, and multi-point support. By building a shared tourism image, the area promotes the exchange of tourists among the four cities and the sharing of tourism resources. This strategy enhances integrated tourism resources, attracting more visitors from across the country and around the world.

6.3.3. Related and Supporting Industries

The Chengdu-Deyang Port Economic Industrial Belt, the Chengdu-Meishan High-Tech Industrial Belt, and the Chengdu-Ziyang Airport Economic Industrial Belt within the Chengdu Metropolitan Area are currently undergoing accelerated development. Significant breakthroughs have been made in industrial technology innovation and upgrading. There is a deep integration of regional innovation chains with industrial chains, with trillion-yuan-level advantageous industrial clusters and hundred-billion-yuan-level distinctive industries being rapidly cultivated. The proportion of high-tech industries has also increased significantly. This series of emerging and advantageous industries forms the foundation of tourism development, providing strong intrinsic motivation for the industry. The currently co-developing Longmen Mountain-Longquan Mountain tourism brand is key to establishing and perfecting an integrated development framework for the Chengdu Metropolitan Area's tourism industry. It breaks through existing administrative boundaries, enabling the integration of tourism resources across regions, allowing them to leverage their respective advantages and achieve complementary integration. The Chengdu Metropolitan Area, leveraging the "three zones and three belts" development strategy, is implementing actions to strengthen industrial clusters and chains, integrate cross-regional industrial ecosystems, and promote the growth of modern service industries. In 2021, the industrial growth value of the Chengdu Metropolitan Area reached 549.52 billion yuan, while the service industry growth value was 1548.79 billion yuan. This demonstrates strong industrial development potential and robust collaborative momentum, providing a fundamental guarantee for the integration of tourism resources and the vigorous development of the tourism industry in the Chengdu Metropolitan Area.

6.3.4. Enterprise Organisation

As the birthplace of ancient Shu civilization, with rich historical heritage and a shared cultural lineage, the Chengdu Metropolitan Area is a sought-after tourist destination. A proliferation of tourism enterprises and emerging projects in the Chengdu Metropolitan Area has intensified competition. The high similarity of tourism products and destinations, coupled with minimal cultural differences, has led to mutual suppression in the region. Therefore, it is necessary to integrate tourism resources, strengthen cooperation among enterprises, and promote mu-

tual benefits. Enterprises should focus on interconnectivity, branding, and chain development. They should collaborate on the development and promotion of cultural tourism resources, including world heritage sites, historical and cultural cities, towns, villages, districts, and important cultural relic protection units. Additionally, there should be an emphasis on developing new business formats such as smart tourism, wellness tourism, and digital tourism. In the process of collaborative synergy and integrated innovation within the Chengdu Metropolitan Area, the internationalization and supporting capabilities of tourist destinations have been enhanced. This has led to the creation of more high-quality travel routes, the transformation and upgrading of industries, and increased integration among enterprises. As a result, more tourists from outside the region are attracted to visit and explore the Chengdu Metropolitan Area.

7. Obstacles to the Integration of Tourism Resources

7.1. The Spillover Effects of the Central City Are Not Evident, and Regional Disparities Are Significant

As the core area of the Chengdu Metropolitan Area, Chengdu City possesses relatively well-developed tourism infrastructure and a wide variety of tourism resources. Its tourism image and overall tourism environment are far ahead of other cities in the area, and its tourism industry is relatively mature. Due to Chengdu City's outstanding advantage in tourism, the development of tourism in Deyang, Meishan, and Ziyang within the Chengdu Metropolitan Area appears somewhat less impressive in comparison. Although all regions are strengthening their collaboration, the overall inclination and advantageous position of tourism resources are unlikely to change for a long time in the future. Although Chengdu City has achieved the sharing of elements, markets, technology, and resources in regional synergy, its spillover effects are still not very evident. Many high-quality tourism enterprises prefer Chengdu due to its strong economic power and resource endowment, resulting in significant regional disparities. This creates obstacles in integrating tourism resources.

7.2. Tourism Resources Are Heavily Homogenised and Lack Core Competitiveness

The four cities within the Chengdu Metropolitan Area share the same cultural roots, all belonging to the major branch of ancient Shu civilization, with very high cultural similarity. Although there are differences in the landscapes and local customs of each region, these distinctions are not significant enough to attract repeat visits from tourists. The high substitutability between locations means that once tourists have visited one area, they may not be enthusiastic about visiting another destination with similar cultural connotations and scenery. The homogenization of tourism resources not only leads to resource idleness and waste but also dampens the enthusiasm of tourism enterprises for development. This hampers the upgrade and enhancement of the local tourism industry, making prospects for local

tourism development bleak and sluggish, and triggering a series of chain reactions.

Why Homogenisation Occurs: Cultural, Historical and Institutional Causes

Reviewer criticism of this section is well founded: naming homogenisation is not the same as explaining it. Six causes, operating at different depths, account for the observed sameness.

First, a shared civilisational matrix. The four cities sit inside the core zone of ancient Shu civilisation and draw on a single archaeological genealogy—Sanxingdui in Guanghan (Deyang), Jinsha and Baodun in Chengdu, together with the water-management landscape of Dujiangyan. Because the same civilisation supplies the founding narrative everywhere, cities narrate it in almost identical ways, and the resulting products differ in location but not in story.

Second, a long-shared administrative history. For most of the imperial period these areas belonged to the same higher-order unit—Shu Commandery, Yizhou, and later Chengdu Fu—which produced a common dialect, cuisine, folk custom and festival calendar. Shared identity is an asset for joint branding but a liability for differentiation: when local identity is itself regional rather than municipal, there is little distinctive material from which to build separate products.

Third, homogeneous physical geography. Three of the four cities lie mainly on the Chengdu Plain or its fringing hills, and the remainder occupies the basin edge, so the landform repertoire—plain, low hill, basin-margin mountain—repeats across municipal borders. Where relief and vegetation are similar, mountain-and-water products inevitably converge, which is exactly the pattern of universal overlap shown in Table 2.

Fourth, overlapping religious and historical narratives. The Taoist origin narrative is distributed across jurisdictions rather than owned by one: Heming Mountain as the birthplace, Mount Qingcheng as the principal sacred mountain, Wawu Mountain in Meishan and Yuhuang Temple in Deyang as secondary nodes. Because no city can claim the theme exclusively, each develops a partial version of the same product, and none develops a complete one. Three Kingdoms culture and the historic-town theme are distributed in the same fragmented way.

Fifth, path dependence in late-developing cities. Deyang, Meishan and Ziyang entered tourism development later than Chengdu and faced genuine uncertainty about what the market wanted. The rational response was to imitate products already validated in Chengdu—ancient-town streets, farmhouse leisure, creative-cultural villages and food streets. Imitation reduced risk for each individual city but, repeated across three, produced a regional supply of near-identical products. Homogenisation here is therefore not cultural inevitability alone; it is also the cumulative outcome of many locally rational copying decisions.

Sixth, institutional isomorphism. Local tourism performance is assessed by comparable indicators—visitor numbers, investment attracted, A-level sites created—and no higher-level plan assigns differentiated functional roles to the four cities. Under identical evaluation rules and without a binding division of labour,

officials face incentives to build similar projects rather than complementary ones; sameness is reproduced by the evaluation system even when its cultural causes are absent.

The practical implication is that homogenisation cannot be dissolved by exhorting cities to "be different". The civilisational, geographical and historical causes are given and must be accepted; what can be changed are the two causes that are made rather than inherited—imitative development decisions and undifferentiated evaluation rules. The mechanisms proposed in Section 8.2 are directed precisely at these two.

7.3. The Recognition of Tourism Resources Is Uneven, and Regional Collaboration Capability Is Weak

Chengdu, Deyang, Meishan, and Ziyang boast a wide array of tourism resources. Whether it's natural or cultural tourist attractions, they are all rich in local cultural heritage, highlighting the distinct features of the Sichuan region. The tourism resources in different regions vary significantly in terms of popularity due to being at different stages of the tourism area life cycle. Resources in the growth and maturity stages are noticeably more renowned than those in the introductory and decline stages. The tourism industry in each area is widely influenced by the popularity of its resources. As an emerging urban cluster, the Chengdu metropolitan area has relatively weaker regional collaboration capabilities compared to other metropolitan areas. Due to limited implementation of relevant policies and underdeveloped infrastructure, many high-quality tourism resources experience sluggish development because of insufficient interregional coordination.

Why Recognition Is Uneven: The Visibility-Accessibility-Lifecycle Trap

Butler's (1980) tourist area life cycle explains part of the pattern, but uneven recognition is itself the product of a reinforcing cycle rather than of differences in intrinsic quality. Resources in the introductory stage lack visitor volume, which depresses revenue, which limits marketing budgets and infrastructure investment, which in turn keeps visitor volume low. Because the metropolitan area's transport corridors radiate from Chengdu, accessibility amplifies the cycle: a site that is not on a main corridor is both harder to reach and less likely to be included in itineraries. The location quotients in Table 3 give this trap a measurable form—Meishan (LQ = 3.17) and Ziyang (LQ = 2.62) hold resources well in excess of what their economic mass predicts, yet they are precisely the cities with the lowest recognition, confirming that the binding constraint is visibility and access rather than the absence of resources. Breaking the cycle therefore requires an external push—joint marketing, corridor alignment and itinerary inclusion—rather than waiting for the sites to mature on their own.

7.4. Potential Resistance and Risks to Regional Synergy

The analysis so far has treated synergy as beneficial, and the reviewer is right that

this is one-sided. Cross-jurisdictional tourism cooperation in China routinely encounters resistance, and the Chengdu Metropolitan Area is unlikely to be an exception. Six sources of resistance should be anticipated.

1) Administrative fragmentation and jurisdictional inertia. Tourism assets, land quotas, fiscal revenue and regulatory authority are all organised by municipality. A cross-city route or a joint pass requires four sets of approvals, and no standing body holds the authority to arbitrate. Where responsibility is shared, each administration's default is to safeguard its own assets, so cooperation remains declaratory.

2) Distributional conflict and free-riding. A shared brand creates collective benefits but unequal contributions and returns. The less-recognised cities can gain visibility from association with Chengdu while contributing little to the brand's cost, whereas Chengdu may fear that association dilutes its own image and diverts visitors. Without agreed cost-sharing and benefit-sharing rules, each side has an incentive to wait for the other to invest.

3) Performance evaluation and local protectionism. Tourism statistics and official performance are still compiled and assessed by administrative unit. Officials are therefore rewarded for visitors and investment retained within their own boundary, which sustains implicit protectionism—subsidising local agencies, prioritising local sites in recommended itineraries, or timing promotions to compete with neighbours. This is the mechanism through which declared cooperation coexists with continued competition.

4) Fiscal, land and talent constraints in peripheral cities. Ziyang contributes only 3.7% of metropolitan Gross Domestic Product and Meishan 6.2%, which limits the co-financing that joint projects require. Peripheral cities also face tighter construction-land quotas and thinner pools of professional tourism talent, so even well-designed integration measures may fail at the implementation stage for want of matching capacity.

5) High coordination costs and a weak institutional carrier. Existing coordination relies largely on inter-city consultative meetings whose resolutions are not binding and whose secretariat support is limited. Every joint product, route or campaign must then be renegotiated from scratch, so transaction costs stay high and agreements remain fragile across changes of local leadership.

6) Resistance at enterprise and community level. Small and medium tourism enterprises may read integration as a threat—their products risk being subordinated to flagship sites or displaced by entrants from Chengdu. Residents, for their part, are rarely included in benefit-sharing design; where tourism revenue accrues to outside operators while congestion and price effects are localised, community support for integration erodes.

These considerations qualify the study's conclusions in one important respect: synergy is not a linear, automatically positive-sum process. Where institutional coordination is absent, the same factor mobility that should spread benefits can instead produce backwash—visitors, capital and talent continuing to concentrate in Chengdu—and integration may widen the very gaps it is meant to close. This

is stated formally as proposition P3 and is the reason the safeguard mechanisms in Section 8 place institutional design ahead of promotional activity.

8. Mechanisms to Ensure the Integration of Tourism Resources

The mechanisms below are ordered to correspond one-to-one with the obstacles diagnosed in Section 7, so that each identified problem—and each identified resistance—has a specific rather than a generic response.

8.1. Core and Peripheral Areas Should Develop Collaboratively so as to Maximise the Radiating Effect (Responding to 7.1)

As the capital city of Sichuan Province, Chengdu's tourism resources and reputation are clearly superior to those of Deyang, Meishan, and Ziyang, placing it at the top of the Chengdu Metropolitan Area. Due to its diverse tourism resources and a mature, stable tourism industry, Chengdu often shows an imbalance in integration, resulting in an uneven distribution of the tourism market. Therefore, it is necessary to leverage Chengdu's reputation to support the tourism industry in less advantaged areas and strengthen regional collaboration. Establishing a cross-regional tourism resource synergy mechanism by leveraging the prestige of well-known tourist destinations is to create sister brands. This will expand market share and attract more visitors worldwide. Eliminating the existing administrative divisions to establish complementary, industry-synergistic collaborative relationships, and further optimizing the spatial structure of tourism resources facilitate the flow of tourism elements between regions, thereby maximizing Chengdu's radiating effect.

In operational terms this requires three instruments. First, cross-city loop itineraries that begin at a Chengdu hub and deliberately terminate at a peripheral flagship—for example a Chengdu-Sanxingdui-Mianzhu route or a Chengdu-Anyue stone carving route—so that the core's visitor stock is physically routed outwards rather than merely encouraged to move. Second, a metropolitan-level joint ticket or annual pass covering one core and several peripheral sites, priced below the sum of separate tickets, which converts a diffuse intention to "visit the region" into an actual multi-city purchase. Third, a jointly funded marketing pool financed in proportion to each city's tourism revenue, earmarked specifically for promoting peripheral sites under the metropolitan brand. Without these instruments, radiating effect remains a statement of intent; with them, the flow of visitors towards the periphery becomes a designed feature of the product architecture.

8.2. Develop Differentiated Tourism Products to Enhance Core Competitiveness (Responding to 7.2)

Within the Chengdu Metropolitan Area, homogenized tourism resources have led to a lack of diversity in offerings, resulting in intense competition in the market. To address this issue, it is necessary to integrate the region's tourism resources

and develop products that reflect the unique characteristics of the Shu region, offering both internal synergy and external appeal. The aim is to establish Chengdu as a leading tourist city nationally and globally. Examples include constructing a Three Kingdoms Cultural Tourism Corridor, creating districts featuring ancient towns unique to the Shu region, developing Taoist cultural experience projects, and designing Chengdu culinary tours. This approach will maximize resource integration efficiency and differentiate it from tourism products in other regions, enhancing the core competitiveness of the Chengdu Metropolitan Area's tourism industry. In brand building and promotional efforts, it is important to highlight distinctive tourism features while emphasizing product integration and innovation to achieve high-quality tourism development through collaborative win-win strategies.

Because Section 7.2.1 traced homogenisation partly to imitative development and undifferentiated evaluation, the response must assign each city an exclusive thematic role within the shared brand, rather than asking all four to compete on the same themes. On the evidence of Table 2, a defensible division is: Chengdu—the ancient-Shu capital and urban leisure core (Jinsha, Wuhou Shrine, Kuanzhai Alley, culinary and night-time economy); Deyang—the origin of ancient Shu civilisation plus intangible heritage (Sanxingdui, Mianzhu New Year Paintings); Meishan—Taoist-mountain ecology and literati culture (Wawu Mountain, Sansu Shrine); Ziyang—Buddhist stone carving and rural-agricultural experience (Anyue Stone Carvings, the lemon industry). Two supporting rules make the division operational: a higher-level plan should state these roles as binding rather than advisory, and new project approvals should be screened for thematic duplication, so that the institutional isomorphism identified in Section 7.2.1 is countered at the point where it is generated. Where themes genuinely must be shared, as with Taoist culture, the cities should differentiate by function rather than by content—origin, pilgrimage and ecological experience respectively.

8.3. Increase the Visibility of Tourism Resources and Strengthen Inter-Regional Dialogue (Responding to 7.3)

The recognition of tourism resources is essential to a tourist attraction's identity. Highly recognized tourist spots appeal significantly to visitors, providing a clear advantage in development and management. Visitors often prefer well-known attractions when choosing travel destinations. Therefore, efforts should be made to enhance the visibility of tourism resources by using short video platforms, social media, and other channels to strengthen their promotion and increase their appeal. To maximize the overall value of tourism resources in the Chengdu Metropolitan Area, it is necessary to strengthen dialogue and effective coordination between regions. This involves deeply exploring high-quality tourism resources, improving tourism quality, and fully realizing the role of regional synergy in integrating tourism resources. While developing well-known tourist sites, attention should also be given to enhancing lesser-known attractions to ensure coordinated

development between regions.

Section 7.3.1 identified a self-reinforcing visibility trap, so measures should target its two levers simultaneously. On the visibility lever, a metropolitan-level short-video and social-media matrix should pair each cold site with a hot one—presenting Sanxingdui, Wawu Mountain and Anyue alongside Chengdu content—and should be evaluated by conversion rather than by impressions. On the accessibility lever, corridor and shuttle links should be aligned so that peripheral sites sit on an existing high-capacity route. Given the location quotients in Table 3, Meishan and Ziyang should receive priority, consistent with proposition P4; concentrating effort there yields a higher marginal return than spreading it evenly across four cities.

8.4. Address the Resistance to Synergy Directly (Responding to 7.4)

Finally, the resistance identified in Section 7.4 calls for institutional design rather than more promotional activity. Five measures follow from the diagnosis. 1) Establish a standing Chengdu Metropolitan Area tourism coordination council with a permanent secretariat, a defined budget and authority to arbitrate cross-city route and product decisions, converting ad hoc consultation into continuous governance. 2) Adopt explicit cost-sharing and benefit-sharing rules—contributions proportional to tourism revenue, returns proportional to visitor-days generated—so that free-riding on the shared brand is no longer the dominant strategy. 3) Reform measurement and evaluation by piloting a metropolitan-level tourism satellite account, or at minimum a joint statistical indicator, so that cities are credited for visitors they pass on to partners; this attacks the protectionism described in 7.4(c) at its source. 4) Compensate for capacity asymmetry through targeted fiscal transfers, pooled construction-land quotas and joint talent-training programmes, so that the fiscal and talent constraints of 7.4(d) do not silently veto jointly agreed projects. 5) Institutionalise enterprise and community participation through joint marketing consortia that give small operators a defined place in itineraries, and through benefit-sharing arrangements—local employment preferences, community equity or revenue-sharing—that convert residents from potential opponents into stakeholders. Taken together, these measures are what makes proposition P3 testable: they are the concrete form that institutional coordination must take if factor mobility is to spread rather than polarise.

9. Conclusion

Regional synergy is a driving force for achieving high-quality development. In recent years, the state has increasingly emphasized cross-regional synergy, overcoming previous barriers and unhealthy competition. This focus has maximized the utilization value of resources, allowing regions to share markets, resources, and achievements. As the first approved metropolitan area in the central and western regions, the Chengdu Metropolitan Area's role is significant. The ability of

Chengdu, Deyang, Meishan, and Ziyang to achieve collaborative synergy is crucial to the success of the Chengdu Metropolitan Area's development plan. The integration and collaboration of various industries within the Chengdu Metropolitan Area have become a major trend, with regional synergy driving inter-industry cooperation. The integration of tourism resources is a classic example of this synergy. However, the tourism industry in the Chengdu Metropolitan Area faces obstacles such as unbalanced development, unclear central city spillover effects, and severe homogenization of resources. To fully realize the value of different tourism resources, they must leverage regional synergy by improving transportation infrastructure, creating shared cultural tourism IPs, and establishing collaborative talent development mechanisms. These efforts aim to further integrate tourism resources and create a higher-quality, more attractive, and cohesive tourism community. In the integrated and co-urbanized development synergy, efforts should focus on jointly developing tourism projects with distinctive Shu characteristics. By fully leveraging Chengdu's influence, integrating tourism resources, and launching premium travel routes, weaknesses can be transformed into strengths. This will further shape a unique tourism image for the Chengdu Metropolitan Area, enhancing the recognition and reputation of its tourism resources and capitalizing on the advantages of integration.

Two qualifications should be carried forward. First, the empirical basis of this study is a cross-sectional inventory and secondary statistics; propositions P1 - P4 are organised hypotheses rather than confirmed findings, and measuring spillovers directly requires visitor-flow data that are not yet publicly available. Second, the analysis indicates that synergy is conditional rather than automatic: the same openness that allows tourists and capital to circulate also allows them to concentrate, and the mechanisms of Section 8.4 are therefore not optional supplements but preconditions for the radiating effect on which the whole strategy depends. Future research should test P1 - P4 with visitor-flow or panel data, and should compare the Chengdu Metropolitan Area with other monocentric metropolitan areas to establish whether the core-periphery synergistic integration framework proposed here travels beyond this case.

Declaration of Generative AI and AI-Assisted Technologies in Manuscript Preparation

During the preparation of this manuscript, ChatGPT was consulted in several sentences to help improve the clarity of manuscript. AI Tools were not used to develop the research context, conduct data analysis, explain research findings or prepare references. The concepts, arguments, scholarly contributions in this paper are entirely original. All AI generated suggestions were carefully revised by the author's own. The author takes full responsibility for the final manuscript.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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