

Evaluating Leisure Tourism Development in the Central Urban Areas of Chengdu and Chongqing: Tourist Perceptions, Constraints, and the Moderating Role of Travel Frequency

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ABSTRACT: Against the backdrop of the ongoing construction of the Chengdu Chongqing economic circle, the central urban area has become an important window for observing the quality of urban leisure tourism. This article takes 6 central urban areas in Chengdu and 9 central urban areas in Chongqing as the research scope. Based on 450 tourist perception questionnaires, a seven-dimensional development evaluation scale and a five-dimensional constraint factor scale are constructed. Reliability and exploratory factor analysis, inter group difference test, hierarchical regression, Bootstrap mediation test, and moderation effect model are used for analysis. Research has found that the average perceived development of leisure tourism in the central urban area of Chengdu is 3.890, which is higher than the 3.691 in the central urban area of Chongqing; The perceived constraint factor in Chongqing is 3.381, higher than Chengdu's 3.004. Services, management, information, policies, and environmental constraints all have a significant

negative impact on development evaluation, with information constraints and environmental constraints playing a stronger role. Restrictive factors play a partial mediating role between urban type and development perception. The frequency of travel can buffer the negative impact of constraining factors, but this buffering is mainly reflected in the dimensions of information and environment. Research shows that the differences in the central urban areas of Chengdu and Chongqing are not only due to differences in resource endowment but also reflect the degree of matching between service organization, information supply, environmental governance, and tourist experience. Based on this, this article proposes suggestions from four aspects: deepening the quality of Chengdu, experience translation in Chongqing, interconnection of Chengdu Chongqing rules, and differentiated services for tourists.

Keywords: *Chengdu Chongqing Economic Circle; Central urban area; Leisure tourism; Perceptual evaluation; Restrictive factors; Travel frequency.*

1. Introduction

1.1 Research Background and Problem Statement

Against the backdrop of expanding domestic demand, promoting service consumption, and promoting regional coordinated development, the urban function of leisure tourism is undergoing changes. It is no longer just an extension of scenic spot tickets and single visit, but closely connected to neighborhood roaming, cultural participation, dining and shopping, nighttime consumption, and public space experience. For tourists, the leisure quality of a city often depends on whether multiple touchpoints can be smoothly connected. The quantity of resources is certainly important, but accessibility, information clarity, service stability, and on-site order will also affect the final evaluation.

Chengdu and Chongqing are both located in the Chengdu Chongqing economic circle and are well-known tourist cities in the western region. The resource conditions of both cities are outstanding, but their spatial structure and experience organization methods are not the same. The central urban area of Chengdu is mainly observed in areas such as Jinjiang, Qingyang, Jinniu, Wuhou, Chenghua, and Gaoxin. Chunxi Road, Kuanzhai Alley, Jinli, People's Park, Dongjiao Memory, and Jiaozi Park commercial districts together form a relatively continuous urban leisure space. The plain terrain and mature block network make it easier for Chengdu to form slow travel, stay, and lifestyle consumption experiences.

The central urban area of Chongqing includes areas such as Yuzhong, Jiangbei, Nan'an, Jiulongpo, Shapingba, Dadukou, Yubei, Banan, and Beibei. Monument to the people's Liberation, Hongya Cave, Yangtze River cableway, Ciqikou, Guanyin Bridge, Nanbin Road and mountain city trail have strong visual recognition. The mountainous terrain and the Two Rivers landscape have shaped Chongqing's unique urban image, but they also bring additional costs to tourists such as finding routes, transferring, queuing, and evacuating during peak hours. Therefore, comparing two downtown areas is not simply about determining which city has more resources, but rather examining how tourism experiences are organized under different spatial conditions.

Existing research has provided a multifaceted foundation for this issue. Research on the spatial distribution of leisure tourism resources has revealed the mechanisms of resource aggregation, spatial differentiation, and formation in resource-depleted cities ^[1]. Studies of Changsha ^[2], Fuzhou ^[3], and Chengdu ^[4] have further clarified these mechanisms in different urban contexts. Research on the integration of agriculture, culture, and tourism ^[5] and rural creative leisure ^[6] shows that characteristic resources can only be transformed into sustained attractiveness when they enter specific consumption scenarios. Research on sports leisure ^[7] and wine culture tourism ^[8] reaches a similar conclusion. Evidence from rural sports leisure further supports this view ^[9]. At the same time, the dissemination of short videos and regional linkage are changing the way destinations attract customers ^[10], and network traffic and tourism activities will also have non-linear effects on the behavior of urban residents' living circles ^[11]. In the context of high-quality development, research on tourism in border ethnic areas and rural areas further suggests that the evaluation of leisure tourism should not only focus on resources, but also take into account cultural, service, environmental, and governance conditions ^[12] ^[13].

However, there are still three shortcomings in the existing achievements. Firstly, the research scale mostly stays at the level of the city as a whole, metropolitan areas, or scenic spots, and there is relatively insufficient direct comparison between the central urban areas of Chengdu and Chongqing. Secondly, many studies have described differences in development level or spatial distribution, but have provided little explanation for the mechanism of "higher traffic but not necessarily synchronous improvement in evaluation". Thirdly, tourists are often treated as homogeneous groups, and the experience differences represented by travel frequency have not been fully incorporated into the analysis of

constraining factors. Based on these shortcomings, this article focuses on answering three questions: whether there are differences in the perception of leisure tourism development between the two central urban areas; Does the five types of perceived constraints reduce development evaluation; Does perceived constraint mediate the relationship between city type and development evaluation, and does travel frequency change the strength of this effect.

1.2 Research Contributions

The main contributions of this article are threefold. Firstly, promote the comparison between Chengdu and Chongqing to the level of the central urban area, focusing on the blocks, commercial districts, cultural spaces, and transportation nodes that tourists come into contact with the most frequently. Secondly, incorporating perceptual constraints into the "urban type development evaluation" relationship, testing its mediating role, and thus transforming macro urban differences into concrete links that can be governed. Thirdly, introducing travel frequency as a boundary condition to examine whether and how tourist experience buffers the impact of constraining factors, providing empirical basis for differentiated services.

2. Literature Review and Theoretical Framework

2.1 Domestic Research on Leisure Tourism Development Evaluation

Domestic leisure tourism research first attaches importance to resource foundation and its spatial organization. Chen Tan et al. used Jiawang District in Xuzhou City as an example to point out that the distribution of leisure tourism resources in resource depleted cities is influenced by a combination of resource endowment, industrial transformation, transportation conditions, and policy guidance ^[1]. Tang Hong and Xu Chunxiao's research on Changsha found that leisure tourism resources exhibit significant spatial agglomeration, but agglomeration does not automatically mean experience balance ^[2]. Chen Yufen et al. revealed the spatial differentiation of resources in the context of global tourism in the Fuzhou case ^[3]. Li Li et al. used Chengdu as an example to illustrate that the spatial pattern of leisure tourism resources is closely related to the natural background, transportation network, and urban functional structure ^[4]. These achievements provide a spatial research basis for selecting the central urban area as the comparative unit in this article.

Industrial integration is another important research thread. The research on the integration of agriculture, culture, and tourism in Chongqing emphasizes the synergy between agricultural resources, cultural content, and consumption scenarios. Research on rural creative leisure tourism focuses on cultural creativity, scene creation, and brand operation. The research on sports leisure and rural sports leisure focuses on the integration of culture, sports, and tourism, as well as the development of sports resources. The research on wine culture tourism discusses how characteristic resources can be transformed into products that are participatory, consumable, and communicable from the perspective of theme consumption. These studies suggest that evaluating leisure tourism in central urban areas should not only focus on the number of resource points, but also on whether the resources can be organized into a continuous consumption chain.

The impact of tourists' perception and communication environment is also receiving increasing attention. Research on rural leisure tourism from the perspective of tourist perception points out that services, environment, and cultural experience directly affect the quality of destination development ^[13]. The short video matrix can quickly increase destination visibility, but it may also concentrate passenger flow in a few locations ^[10]. Network traffic and tourism activities have a non-linear impact on residents' living circle behavior, indicating that urban tourism governance should not only focus on tourist growth, but also pay attention to the carrying capacity of residents' living spaces ^[11]. The research on high-quality development in border ethnic areas also emphasizes that leisure tourism needs to be combined with local culture, public services, and regional governance ^[12]. Based on this, this article integrates resource supply, service quality, market vitality, transportation accessibility, information services, policy support, and ecological environment into the development evaluation framework.

2.2 Theoretical Foundations and Research Hypotheses

The theory of tourism destination competitiveness suggests that destination advantages do not solely come from core attractions. Service quality, destination management, demand conditions, supporting industries, and environmental factors all affect tourists' comprehensive judgment of the destination. Applying this theory to leisure tourism in central urban areas can operationalize the "development level" into seven dimensions, namely resource supply, service quality, market vitality, transportation accessibility,

information services, policy support, and ecological environment. Chengdu and Chongqing both have strong resource attractiveness, but their spatial structures and governance conditions are different, and tourists' perceptions may also differ. The continuous blocks in Chengdu are more conducive to creating a low friction experience, while the mountainous landscape in Chongqing comes with higher costs of path finding and vertical movement. Hypothesis H1 is proposed based on this: City type significantly affects the perception of leisure tourism development, and the comprehensive perception level in the central urban area of Chengdu is higher than that in the central urban area of Chongqing.

The tourism constraint theory emphasizes that tourists' subjective perception of unfavorable conditions can affect tourism decision-making, experience quality, and destination evaluation. There are more studies discussing the pre-constraints of whether or not to travel, while this article focuses on the issues perceived by tourists after entering their destination. These issues include service response, on-site order, information clarity, policy coherence, and environmental carrying capacity. The terrain in the central urban area of Chongqing is undulating, and popular locations are concentrated. The pressure of holiday passenger flow is high, and tourists may feel stronger costs in finding their way, transferring, queuing, and crowding. The service network in Chengdu is relatively mature, but there is also homogenization and peak load pressure in popular neighborhoods. Hypothesis H2 is proposed based on this: City type significantly affects perceived constraints, with Chongqing's central urban area having higher perceived constraints than Chengdu's central urban area.

From a comprehensive perspective of destination competitiveness and tourism constraint theory, constraining factors can weaken tourists' evaluation of the level of urban development. Service constraints affect professionalism and trust, while management constraints affect the order and safety of relationships. Information constraints increase time costs and uncertainty, while policy constraints affect institutional friendliness. Environmental constraints mainly damage comfort and sustainability. Therefore, hypothesis H3 is proposed: Perceived constraints have a significant negative impact on the perception of leisure tourism development.

The type of city may also indirectly affect development evaluation through constraining factors. In other words, urban branding, spatial structure, and resource organization may

not only directly shape tourists' judgments, but may also first affect the specific problems tourists encounter at the destination, and then further affect the overall evaluation. Hypothesis H4 is proposed based on this: Perceived constraints play a mediating role between urban type and perception of leisure tourism development.

The frequency of travel represents the accumulated experience of tourists. High frequency tourists are usually more familiar with information retrieval, route planning, off peak travel, and alternative solution selection. When faced with the same problem, they may have stronger negotiation skills, or they may propose stricter evaluations due to more experience. Based on the constraint negotiation logic, this article proposes the buffering hypothesis H5: the relationship between perceived constraints on travel frequency positive regulation and perceived development of leisure tourism. The higher the frequency of travel, the weaker the negative impact of constraining factors.

2.3 Theoretical Model

This article constructs a mediation model of "city type perception constraint development perception" and adjusts the impact of perception constraint on development perception through travel frequency. The city type is the independent variable, with Chengdu's central urban area code being 0 and Chongqing's central urban area code being 1. Perceived constraints include five dimensions: service, management, information, policy, and environment. The perception of leisure tourism development includes seven dimensions: resource supply, service quality, market vitality, transportation accessibility, information services, policy support, and ecological environment. Travel frequency is the moderating variable, while gender, age, and education level are the control variables.

Direct effect c' (H1): City type → Perceived leisure tourism development

City type (IV) Chengdu = 0 Chongqing = 1	a (H2) →	Perceived constraints (M) Service; Managerial; Informational; Policy; Environmental	b (H3) →	Perceived leisure tourism development (DV) Seven-dimensional evaluation
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Travel frequency (MOD; mean-centered) buffers the perceived constraints → development evaluation path (H5).

Indirect effect $a \times b$ (H4): City type → Perceived constraints → Perceived leisure tourism development

Figure 1. Conceptual model and hypothesized paths.

3. Research Design

3.1 Study Area, Sample, and Data Sources

The research area is limited to 6 central urban areas in Chengdu and 9 central urban areas in Chongqing. The Chengdu area includes Jinjiang, Qingyang, Jinniu, Wuhou, Chenghua, and Gaoxin, while the Chongqing area includes Yuzhong, Jiangbei, Nan'an, Jiulongpo, Shapingba, Dadukou, Yubei, Banan, and Beibei. This scope covers the main commercial centers, historical districts, cultural venues, waterfront spaces, and public transportation hubs of the two cities, which can better represent the urban leisure tourism scene of the dual core city. The suburban scenic spots such as Dujiangyan Irrigation Project, Qingcheng Mountain, Wulong and Dazu Rock Carvings are not included in the study to avoid confusion between scenic spot tourism and urban leisure tourism in the central city.

The questionnaire targets tourists who have visited the research area in the past three years. The sampling method combines stratified convenience sampling with quota control. The survey is first divided into Chengdu group and Chongqing group by city type, and then quota control is carried out by gender, age, education level, and travel frequency. The questionnaire is distributed through online platforms, scenic areas, commercial districts, transportation hubs, and university communities. To ensure data quality, the study excluded questionnaires that did not pass screening questions, had short response times, selected the same option for 15 consecutive questions, and had missing key demographic variables. Finally, 450 valid questionnaires were obtained, including 225 from the Chengdu group and 225 from the Chongqing group.

In the sample, there were 241 males, accounting for 53.6%; 209 women, accounting for 46.4%. In terms of age, 18-25 years old account for 28.4%, 26-35 years old account for 40.7%, 36-45 years old account for 20.4%, and 46 years old and above account for 10.4%. The education level is mainly undergraduate, accounting for 43.6%; 33.3% have a college

degree, 13.6% have a master's degree or above, and 9.6% have a high school degree or below. In terms of travel frequency, those who travel once a year or less account for 18.2%, those who travel 2-3 times a year account for 35.1%, those who travel 4-5 times a year account for 30.4%, and those who travel 6 times a year or more account for 16.2%. The sample remains balanced between the two cities, and the demographic structure can also meet the basic requirements for inter group comparison and regression analysis.

3.2 Variable Measurement and Quality Control

The Perception Scale for Leisure Tourism Development consists of 21 items, covering seven dimensions, with 3 items set for each dimension. Resource supply examines the richness and characteristics of resources, while service quality assesses the professionalism, response speed, and completeness of facilities of personnel. Market vitality focuses on consumer scenarios, nighttime economy, and activity supply, while transportation accessibility focuses on external transportation and internal mobility convenience. Information services include guided tours, appointments, customer flow alerts, and platform information consistency. Policy support examines the connection between public services, consumer rights protection, and cross city regulations. The ecological environment examines hygiene, noise, walking comfort, and spatial carrying capacity. The Perceived Constraints Scale consists of 15 items, covering five dimensions: service, management, information, policy, and environment, with 3 items in each dimension. Both types of scales use Likert five point scoring. The higher the perceived development score, the more positive the evaluation; The higher the constraint perception score, the more prominent the problem.

Before the formal investigation, the research will be reviewed by experts and revised through small-scale prediction trials, with a focus on checking whether the semantics are clear, whether the dimension attribution is clear, and whether there are double meanings. In the official data, the Cronbach's alpha of the Leisure Tourism Development Perception Scale is 0.829, and the Cronbach's alpha of the Perceived Constraints Scale is 0.740. All dimensions of alpha are above 0.770, indicating that the internal consistency of the scale has reached an acceptable level. Exploratory factor analysis showed that the KMO value of the Developmental Perception Scale was 0.812, and the Bartlett sphericity test had a chi square of 3284.951 ($df=210$, $p<.001$); The KMO value of the constraint scale is 0.743, and

the Bartlett sphericity test has a chi square of 3988.111 (df=105, $p < .001$). The Development Perception Scale extracts seven factors with eigenvalues greater than 1, with a cumulative explained variance of 71.10%; The constraint scale extracts five factors, with a cumulative explained variance of 85.87%.

Table 1. Measurement structure and reliability

Construct	Dimensions	Items	Cronbach's α	KMO
Perceived Leisure Tourism Development	Resource supply; Service quality; Market vitality; Transportation accessibility; Information services; Policy support; Ecological environment	21	0.829	0.812
Perceived Impediment Factors	Service; Managerial; Informational; Policy; Environmental	15	0.740	0.743

Note: Each dimension contains three items. Both Bartlett tests are significant at $p < .001$.

3.3 Model Specification and Statistical Methods

The sample size estimation is based on Cochran's formula. Under the conditions of unknown overall size, 95% confidence level, maximum variance ratio $p=0.5$, and allowable error $e=0.05$, the theoretical minimum sample size is:

$$n_0 = \frac{Z^2 p(1-p)}{e^2} = \frac{1.96^2 \times 0.5(1-0.5)}{0.05^2} = 384.16 \quad (1)$$

Considering invalid questionnaires, missing values, and the need for comparison between two city groups, the study set the effective sample target to be no less than 450, and the

final sample size meets the requirements. Basic regression model used to test the direct impact of city type on development perception:

$$Y_i = \beta_0 + \beta_1 C_i + \sum_{k=1}^3 \gamma_k X_{ki} + \varepsilon_i \quad (2)$$

Among them, Y1 represents the perception of leisure tourism development by respondent i, C1 is the city type variable, and X2 {ki} is the control variable. To test the mediating effect, estimate the impact of city type on perceived constraints, as well as the joint impact of city type and perceived constraints on development perception:

$$M_i = a_0 + aC_i + \sum_{k=1}^3 \gamma_k X_{ki} + u_i \quad (3)$$

$$Y_i = c'_0 + c'C_i + bM_i + \sum_{k=1}^3 \delta_k X_{ki} + e_i \quad (4)$$

Among them, M1 represents perceptual constraints, and $a \times b$ represents indirect effects. This article uses PROCESS Model 4 for 5000 bootstrap resampling. If the 95% confidence interval does not include 0, the mediation effect is considered significant. The moderation effect model is:

$$Y_i = \beta_0 + \beta_1 C_i + \beta_2 M_i + \beta_3 F_i + \beta_4 (M_i F_i) + \sum_{k=1}^3 \gamma_k X_{ki} + \varepsilon_i \quad (5)$$

Among them, F1 represents travel frequency, and $M2 \times F1$ is the interaction term. Centralize continuous variables before constructing interaction terms. The conditional effect of constraining factors on development perception can be expressed as:

$$\frac{\partial Y_i}{\partial M_i} = \beta_2 + \beta_4 F_i \quad (6)$$

Statistical analysis begins with data cleaning, reliability testing, exploratory factor analysis, and common method bias testing. Subsequently, descriptive statistics, correlation analysis, independent sample t-test, and one-way ANOVA were completed. Finally, hierarchical regression, Bootstrap mediation test, and interaction term model were used to examine the mechanism of action.

4. Empirical Results

4.1 Descriptive Statistics and Common Method Bias Test

Descriptive statistics show that the overall average perceived development of leisure tourism is 3.790, with a standard deviation of 0.323, and the overall evaluation of the

sample is relatively positive. The overall mean of perceived constraints is 3.192, with a standard deviation of 0.511, which is at a moderate level. In terms of dimensions, the scores for ecological environment (3.857) and resource supply (3.853) are relatively high, while the scores for market vitality (3.717) and policy support (3.733) are relatively low. In the constraint dimension, the average service constraint is 3.265, information constraint is 3.239, environmental constraint is 3.187, management constraint is 3.160, and policy constraint is 3.111. The absolute values of skewness and kurtosis of the main variables are generally within an acceptable range, meeting the basic requirements for subsequent parameter testing.

Due to the fact that the data comes from self-reported questionnaires of the same respondents at the same time, Harman's one-way test was used to evaluate the common method bias in this study. After including 36 scale items in the unrotated factor analysis, the first factor eigenvalue was 6.300 and the explained variance was 17.05%, which is below the empirical threshold of 40%. The risk of common method bias is generally controllable, but this method cannot completely exclude all method effects. Subsequent research still needs to be validated through multi-source data or time separation design.

4.2 Between-City Group Difference Tests

Independent sample t-test shows that the average perceived development of leisure tourism in the central urban area of Chengdu is 3.890, while in the central urban area of Chongqing it is 3.691, with significant differences ($t=6.883$, $p<.001$). Perceived constraints show opposite directions, with Chengdu at 3.004 and Chongqing at 3.381, with equally significant differences ($t=-8.404$, $p<.001$). This indicates that Chengdu's advantages are not only reflected in resource attraction, but also in service continuity, information accessibility, and consumption scenario organization. The higher perception of constraints in Chongqing is related to the pressure of mountainous spatial organization and high flow popular locations.

Table 2. Group differences in core variables

Variable	Chengdu Mean (SD)	Chongqing Mean (SD)	t	p
Perceived Leisure Tourism Development	3.890 (0.297)	3.691 (0.317)	6.883	<.001

Variable	Chengdu Mean (SD)	Chongqing Mean (SD)	t	p
Perceived Impediment Factors	3.004 (0.484)	3.381 (0.466)	-8.404	<.001
Service Impediments	3.030 (1.005)	3.501 (0.937)	-5.145	<.001
Managerial Impediments	2.997 (0.968)	3.323 (0.985)	-3.539	<.001
Informational Impediments	3.033 (0.946)	3.444 (0.975)	-4.547	<.001
Policy Impediments	2.917 (0.989)	3.305 (0.943)	-4.260	<.001
Environmental Impediments	3.044 (1.009)	3.330 (1.040)	-2.959	.003

Note: Chengdu n = 225; Chongqing n = 225. Welch correction is applied.

From a dimensional perspective, Chengdu is significantly higher than Chongqing in terms of resource supply, service quality, market vitality, information services, and policy support. The test value for the accessibility dimension of transportation is $t=2.001$, $p=.046$, which only reaches the marginal significance level and should be interpreted as weak differences rather than stable advantages. The difference in ecological environment dimension did not reach a significant level ($p=.316$). This result indicates that what truly widens the experience gap is not simply "whether one can arrive", but whether tourists can easily understand, move smoothly, and stay comfortably after arriving.

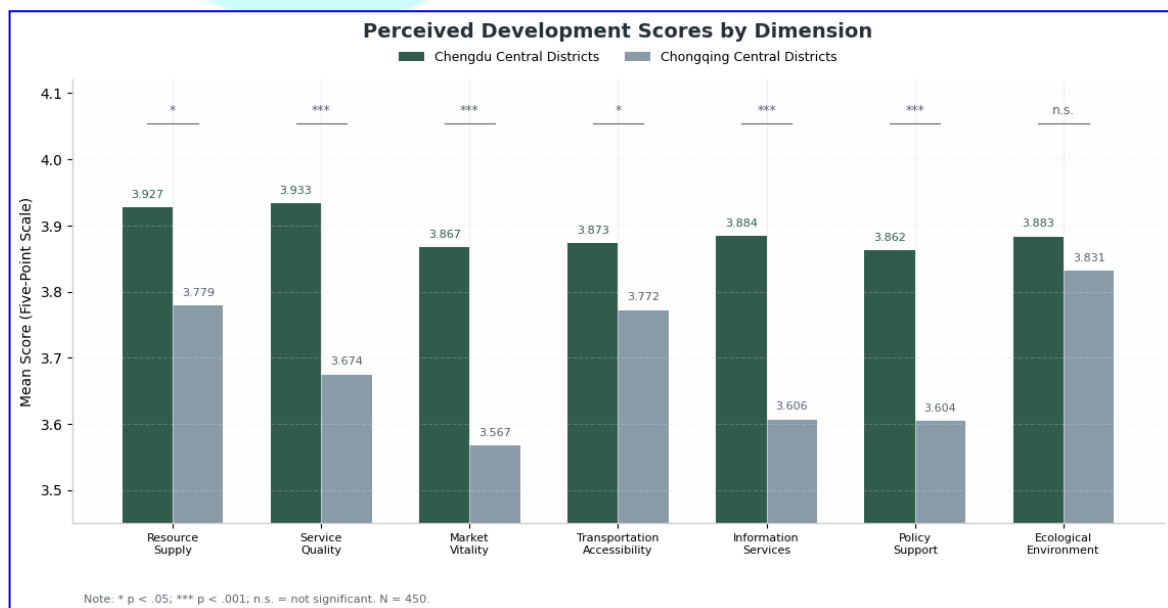


Figure 2. Perceived development scores by dimension.

The inter group differences of the five types of constraining factors are significant. The service constraints (3.501), management constraints (3.323), information constraints (3.444), policy constraints (3.305), and environmental constraints (3.330) in the central urban area of Chongqing are all higher than the corresponding dimensions in Chengdu. The difference between service and information constraints is particularly noteworthy. When tourists are unfamiliar with mountainous cities, problems such as slow service response, insufficient guidance, and inconsistent platform information are more likely to be magnified. The concentration of peak passenger flow will also make queuing, crowding, price transparency, and return guarantee key touchpoints that affect comprehensive evaluation.

The grouping test of travel frequency also provides supplementary evidence. There are significant differences in the development perception of different travel frequency groups ($F=8.700$, $p<.001$), and there are also significant differences in perceived constraints ($F=3.059$, $p=.028$). Overall, the higher the frequency of travel, the higher the development evaluation; However, the constraint perception did not decrease synchronously, but was slightly higher in the high-frequency group. This indicates that high-frequency tourists may be both more mature and have higher demands for destination services.

4.3 Effects of Perceived Constraints on Development Evaluation

Relevant analysis shows that there is a significant negative correlation between perceived and perceived constraints on the development of leisure tourism ($r=-0.471$, $p<.001$), and a weak positive correlation with travel frequency ($r=0.232$, $p<.001$). The hierarchical regression results show that the explanatory power of the model is very low when only control variables are included; After adding the city type, R^2 increased to 0.096; After incorporating perceptual constraints, R^2 increased to 0.244; After adding travel frequency and interaction terms, R^2 increased to 0.322 and 0.347, respectively. The gradual improvement of the explanatory power of the model indicates that the perceived differences between the two cities cannot be explained solely by demographic characteristics, as both constraining factors and tourist experience have independent contributions.

After incorporating five types of constraints into the regression model, service constraints ($B=-0.029$, $p=.033$), management constraints ($B=-0.037$, $p=.007$), information constraints

($B=-0.085$, $p<.001$), policy constraints ($B=-0.031$, $p=.025$), and environmental constraints ($B=-0.078$, $p<.001$) all significantly negatively affect development perception. From the perspective of standardization coefficients, information constraints ($\beta=-0.258$) and environmental constraints ($\beta=-0.247$) have the strongest effects. This result suggests that in modern urban leisure tourism, tourists are not only sensitive to traditional service attitudes, but also to information transparency, spatial comprehensibility, and environmental comfort.

The coefficient of policy constraints is relatively small, but still reaches a significant level. This indicates that institutional factors such as cross city rule integration, refund and reform policies, and complaint handling have entered the evaluation framework for tourists towards their destinations. For twin city tourist destinations like Chengdu Chongqing, institutional experience is no longer a backend issue, but will directly translate into tourists' feelings about the level of regional collaboration.

4.4 Mediation Effects and the Moderating Role of Travel Frequency

Bootstrap mediation test shows that city type has a significant positive impact on perceived constraints ($a=0.379$), while perceived constraints have a significant negative impact on perceived development ($b=-0.262$). The indirect effect $a \times b$ is -0.099 , with a 95% confidence interval of $[-0.131, -0.071]$, excluding 0, indicating a significant mediating effect. After adding the mediator variable, the direct effect of city type remains -0.100 and significant. Therefore, perceptual constraints play a partial mediating role between urban type and development perception. More precisely, the differences between Chengdu and Chongqing are not entirely caused by urban brands or resource endowments, but are partly transmitted through controllable factors such as services, management, information, policies, and environment.

Table 3. Mediation and moderation estimates

Test	Estimate	Statistic / Interval	Conclusion
a: City type → perceived impediments	0.379	Significant	Established
b: Perceived impediments →	-0.262	Significant	Established

Test	Estimate	Statistic / Interval	Conclusion
development			
Direct effect c' after mediator entry	-0.100	Significant	Partial mediation
Indirect effect $a \times b$	-0.099	95% CI [-0.131, -0.071]	Significant
Impediments $\times$ travel frequency	0.100	$p < .001$	Buffering moderation
Conditional effect at low frequency	-0.389	$M - 1$ SD	Stronger negative effect
Conditional effect at high frequency	-0.196	$M + 1$ SD	Weaker negative effect

Note: The mediation test uses 5,000 Bootstrap resamples. Continuous variables are mean-centered.

The moderation effect test showed that the main effect of perceived constraint was significantly negative, and the main effect of travel frequency was significantly positive, with an interaction coefficient of 0.100 ($p < .001$). This indicates that travel frequency can buffer the negative impact of constraining factors on development evaluation. The conditional effect results showed that the effects of the constraining factors were -0.389, -0.292, and -0.196 at low travel frequency, average level, and high travel frequency, respectively, and the negative effect weakened with increasing travel frequency.

Conditional Effects of Perceived Impediments

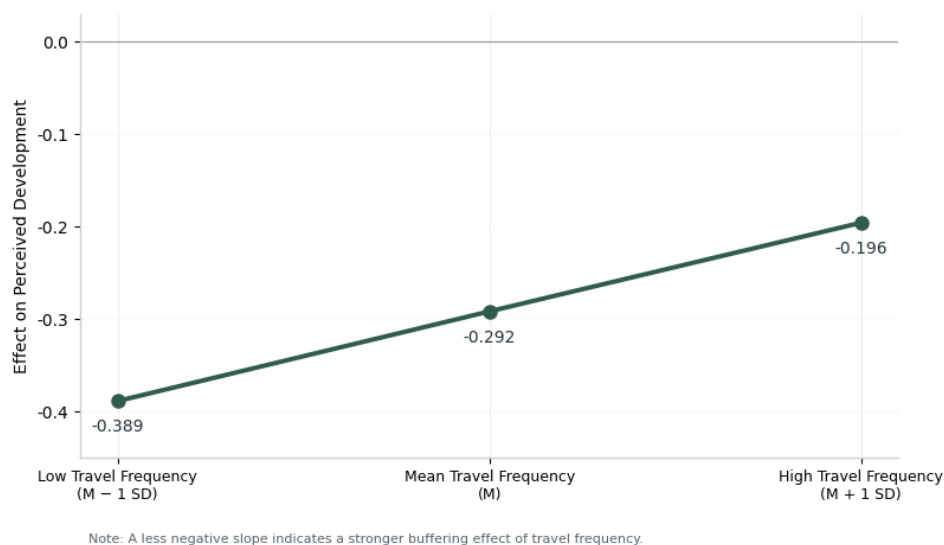


Figure 3. Conditional effects of perceived impediments by travel frequency.

Low frequency tourists rely more on clear guidance, standardized services, and deterministic information. When encountering difficulties in finding a way or problems with on-site order, their evaluation decreases more significantly. High frequency tourists can reduce adverse effects by planning ahead, staggered tours, comparing multiple platforms, and choosing alternative routes. The dimensional results also show that the interaction between information constraints, environmental constraints, and travel frequency is significant, while service constraints are close to significant. The interaction between management constraints and policy constraints is not significant. Tourist experience can partially avoid the problems of insufficient information and crowded environment, but it cannot replace public governance such as on-site queuing order, passenger flow diversion, and safety management.

5. Discussion

5.1 From Resource Competition to Experience-Chain Competition

The research results support the multidimensional perspective of destination competitiveness theory. If we only compare the attractiveness of resources, the central urban area of Chongqing is not weaker than Chengdu. Chongqing even has distinct advantages in urban visual recognition, night scene dissemination, and social media check-in. However, the perceived level of development is the result of the combined effects of resources, services, markets, transportation, information, policies, and environment. The high visibility of popular attractions does not automatically translate into high satisfaction. Scenes such as Hongya Cave and Monument to the people's Liberation can bring strong traffic, but if the peak is crowded, the tour is unclear or the return journey is inconvenient, the overall evaluation will still be affected. The slow living atmosphere in Chengdu has the advantage of continuity, but the convergence of street formats and pressure on holiday services may also weaken the uniqueness of the destination.

This conclusion complements the spatial research on leisure tourism resources. Previous studies have revealed the spatial distribution characteristics of leisure resources in resource-based cities ^[1] and Changsha ^[2]. Related studies have revealed comparable spatial patterns in Fuzhou ^[3] and Chengdu ^[4]. This article further explains that spatial agglomeration is only a development condition, and perceived performance also depends on whether tourists can understand, reach, and consume these resources at a lower cost.

For the central urban area, the focus of governance needs to shift from "increasing resource points" to "organizing experience chains". This includes establishing clear pedestrian connections, information connections, service connections, and public transportation connections between popular resources.

5.2 Digital Traffic, Residents' Life Circles, and Destination Governance

Short video platforms and social media have become important infrastructure for the dissemination of urban tourism destinations. Short video matrix and regional linkage can enhance the visibility of the destination ^[10], but concentrated traffic may also lead to instantaneous congestion and spatial polarization. Network traffic and tourism activities have a nonlinear impact on residents' living circle behavior ^[11]. This means that destination management cannot only pursue the growth of tourist numbers, but also needs to evaluate the impact of tourism activities on residents' commuting, public space use, commercial prices, and peaceful living. This article incorporates environmental constraints into the model, which is a response to the pressure of shared space between hosts and guests.

The research on industrial integration also suggests that the central urban area should not simply replicate the scene of internet celebrities. A more feasible direction is to combine culture, commerce, sports, community life, and nighttime economy into differentiated experiences. Chengdu can combine traditional street culture with park cities, technological consumption, and cultural creative spaces. Chongqing can transform its mountainous landscapes, industrial heritage, riverside spaces, and anti Japanese cultural resources into a multi-level urban experience. Maintaining differentiated positioning between the two cities is more conducive to the construction of the Bashu Cultural Tourism Corridor than homogeneous competition.

6. Conclusions and Recommendations

6.1 Research Conclusions

Based on 450 questionnaire data, this article draws four conclusions. Firstly, the overall perception of leisure tourism development in the central urban area of Chengdu is higher than that in Chongqing, with differences mainly reflected in dimensions such as resource supply, service quality, market vitality, information services, and policy support. Transportation accessibility only shows significant differences at the edges, while

ecological environment differences are not significant. Secondly, the perception of the five types of constraints in the central urban area of Chongqing is higher than that in Chengdu, with service constraints and information constraints being more prominent. The key issue facing Chongqing is not resource scarcity, but how to transform strong landscape attractiveness into low friction, predictable, and sustainable tourism experiences. Thirdly, perceived constraints have a significant negative impact on development evaluation and play a partial mediating role between urban type and development evaluation. Fourthly, the frequency of travel can buffer the constraint effect, but this buffering has boundaries, especially cannot replace on-site management and public governance.

6.2 Policy Recommendations

Firstly, the central urban area of Chengdu should shift from receiving traffic to deepening quality. Traditional popular areas such as Jinjiang, Qingyang, and Wuhou should avoid simple replication of catering, cultural and creative, performing arts, and retail formats. A differentiated business format update mechanism can be established based on the cultural theme of the block, retaining old brands, community markets, and small cultural spaces, and reducing the dilution of locality by purely card based business formats. Chunxi Road, Kuanzhai Alley, Jinli and other areas can pilot time-sharing reservation, temporary walkability, volunteer guided tours and multi-point diversion during holidays. Chenghua and Gaoxin can also be incorporated into Chengdu's urban leisure narrative, forming a complementary destination image of "traditional modern" through technology consumption, cultural creativity, youth lifestyle, and park city scenes.

Secondly, the central urban area of Chongqing should transform complex terrain into an understandable urban experience. Yuzhong, Jiangbei, Nan'an, Shapingba and other areas require unified pedestrian signage, vertical transportation guidance, rail transfer prompts, and nighttime return information. On this basis, gradually form a three-dimensional navigation system covering map platforms, on-site guides, and official mini programs. Popular areas such as Hongya Cave, Monument to the people's Liberation, Yangtze River cableway and Ciqikou can reduce the sense of crowding through time-sharing reservation, real-time passenger flow release, recommendation of alternative routes around and delayed service of public transport at night. At the same time, we should improve service response speed and consumer transparency, improve clear pricing, fast complaint handling,

multilingual services, and online customer service. Beibei, Banan, Dadukou and other districts can undertake ecological leisure, industrial culture and riverside experiences, thereby alleviating the passenger flow pressure in hot areas such as Yuzhong and Shapingba.

Thirdly, Chengdu Chongqing collaboration should move from joint marketing to rule-based interconnection. The cultural and tourism resources of the two cities each have their own advantages, and collaboration should not be limited to joint promotion, joint routes, and mutual promotion activities. In the near future, a cross city tourism information page can be established to provide centralized information on intercity transportation, scenic spot reservations, real-time passenger flow, weather, accessible facilities, and complaint channels. In the medium term, a cross city consumer rights protection mechanism can be explored to provide tourists with relatively consistent refund, complaint, and dispute resolution services when traveling continuously between two cities. Around high-speed railways and intercity railways, the "last mile" connection after arrival should also be optimized. In the longer term, joint monitoring indicators can be established for the central urban area of the Bashu Cultural Tourism Corridor, incorporating tourist perception, resident perception, and ecological environment carrying capacity into the same evaluation system.

Fourthly, implement tiered services for different travel frequency groups. For low-frequency tourists, more deterministic services should be provided, such as official recommended routes, standardized ticket prices, transfer maps, real-time passenger flow reminders, and fast customer service. For mid-range tourists, themed products such as city strolls, food, museums, night scenes, and parent-child activities can be provided. For high-frequency tourists, community cultural experiences, industrial heritage updates, exploration of non popular neighborhoods, festival activities, and cross city niche routes can be increased. Layered services are not about labeling tourists, but recognizing differences in experience, allowing different tourists to obtain experiences that are suitable for themselves at a lower cost.

6.3 Limitations and Future Research

There are still several limitations to this article. Firstly, the samples mainly come from online platforms and on-site convenience sampling in central urban areas, rather than strict

probability sampling. Therefore, caution should be exercised when generalizing the conclusions to other regions, seasons, and tourist groups. Secondly, the study utilizes perceptual data. This type of data can reflect tourist experience, but cannot replace official tourism statistics, mobile communication data, POI data, online reviews, and nighttime lighting data. Again, cross-sectional questionnaires are difficult to strictly identify causal relationships. Although the mediating and moderating effects have theoretical basis, further verification through longitudinal tracking or experimental design is still needed. Finally, the binary variable of urban type may mask internal differences within the central urban area, and in the future, a multi-level model can be used to distinguish between "urban effects" and "inter regional effects".

Subsequent research can be advanced from five directions. Firstly, expand the sample size and use confirmatory factor analysis or structural equation modeling to improve measurement robustness. Secondly, segment local residents, close range tourists, remote tourists, and international tourists, and compare the perceived constraints of different groups. Thirdly, distinguish between holidays and weekdays, peak season and off-season, and examine the dynamic impact of passenger flow pressure on the evaluation mechanism. Fourth, combine social media text, online comments, and location data with questionnaire data to identify inconsistencies between online image and offline experience. Fifth, expand the research scope to other node cities in the Chengdu Chongqing economic circle, and test whether the leisure experience in the central urban area can spread to secondary cities.

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