AI and Tourist Behaviour: Insights from the GBA Satisfaction Index

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Leading Hospitality and Tourism



Why Tourist Satisfaction Is Important

- Satisfied tourists return regularly, maximizing customer lifetime value and lowering long-term marketing costs.
- High satisfaction triggers positive online reviews and word-of-mouth recommendations, attracting new travelers at zero acquisition cost.
- Happy visitors exhibit higher willingness to pay, enabling businesses to charge premium prices and earn higher margins.
- Fosters durable regional brand equity, driving sustained economic growth and higher community-wide tax revenues.



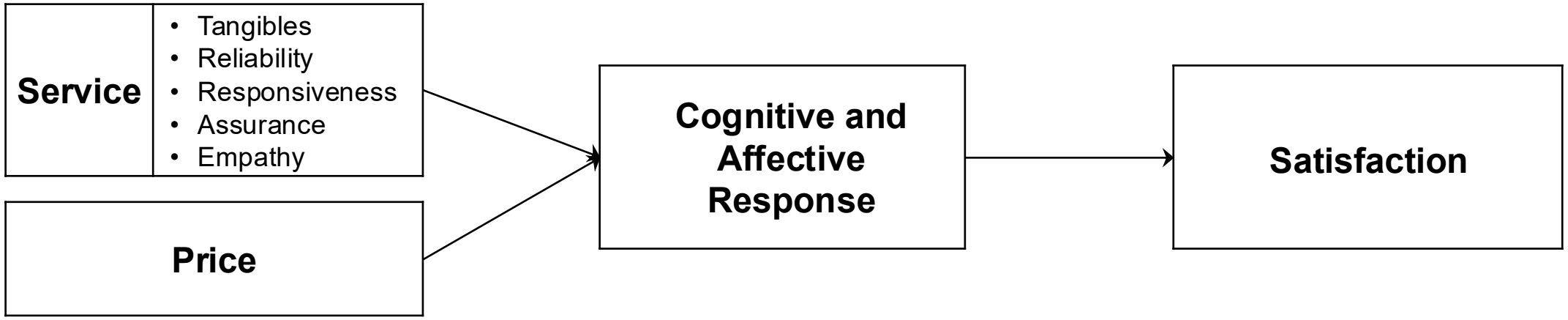
Objectives

- Develop a ***robust tourism monitoring and assessment framework*** covering ***11 cities*** in the GBA, ***various tourism-related*** sectors, and at ***different levels***.



How Tourists Respond to Tourism Services?

A *Framework*



Service and Price are the key factors influencing tourists' satisfaction. ⇨ Visitors' emotional and cognitive responses shared through OTA/social media platforms. ⇨ The tourists' satisfaction with service quality and price are evaluated through online reviews.

Tourists express their thoughts and emotions about tourism services on OTA/social media platforms.

The sentiments expressed in these reviews provide insights into tourists' level of satisfaction.

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How to Evaluate Tourists' Experiences

The Method

Stage 1: Collecting Data

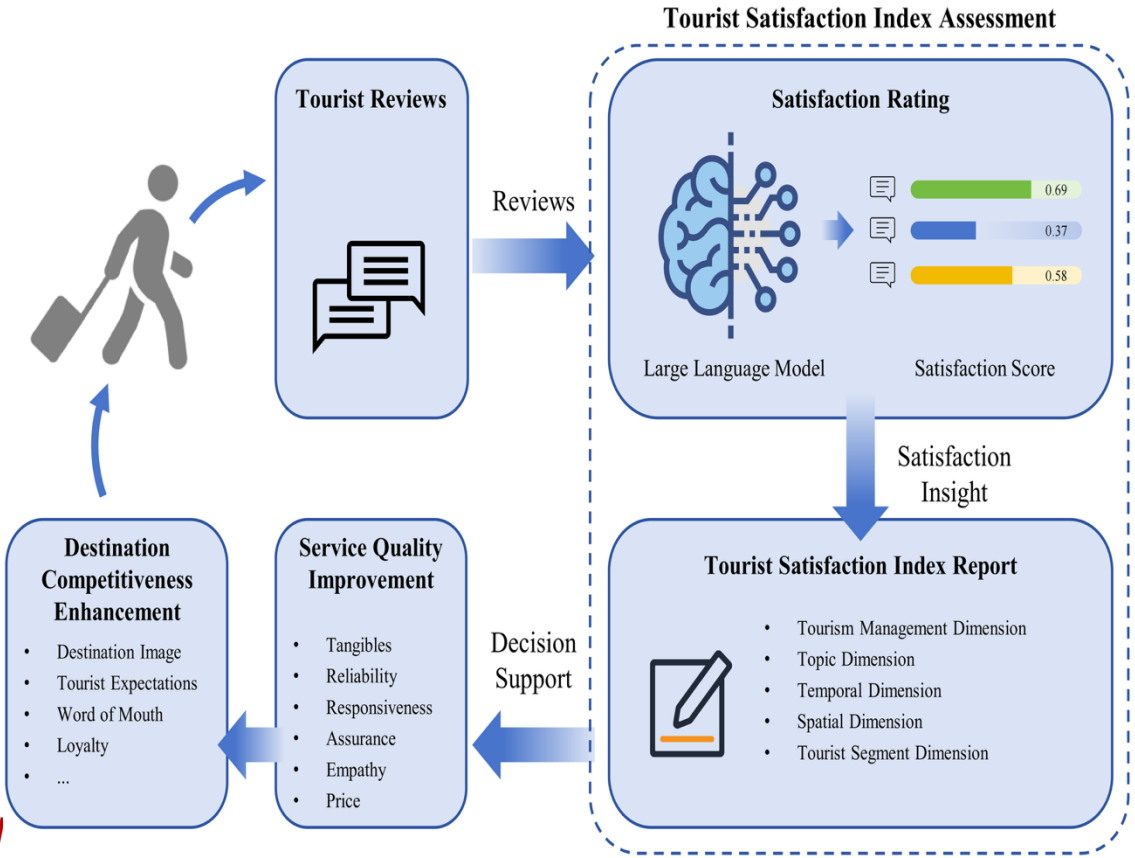
- Special tools (web crawlers) were used to gather *reviews* in different languages from *TripAdvisor*.

Stages 2 & 3: Analysing the Reviews

- A smart AI tool, *large language model (LLM)*, was used to understand the *sentiments* of the reviewers.
- The reviews were broken down into *topics* and analysed for *patterns*.
- Each sentence in the reviews was given a score based on specific *keywords* or *phrases*.

Stage 4: Calculating the TSI Scores

- Final TSI scores were calculated, measuring *service quality* for each individual hotel, attraction, retail shop, and transportation provider.
- These scores were then aggregated to *sectoral* and *destination TSI*



The Data



Ctrip

https://www.ctrip.com/

2,200,000+ reviews

1 Jan 2026 to 30 Jun 2026

TripAdvisor

https://www.tripadvisor.com/

57,000+ reviews

1 Jan 2026 to 30 Jun 2026

Our dataset contains a large amount of real global user reviews in multiple languages, which serves as both a major challenge and a key strength.

GBA Tourist Satisfaction Index

The sectorial trends

Trend analysis offers dynamic insights

Sectoral TSI:

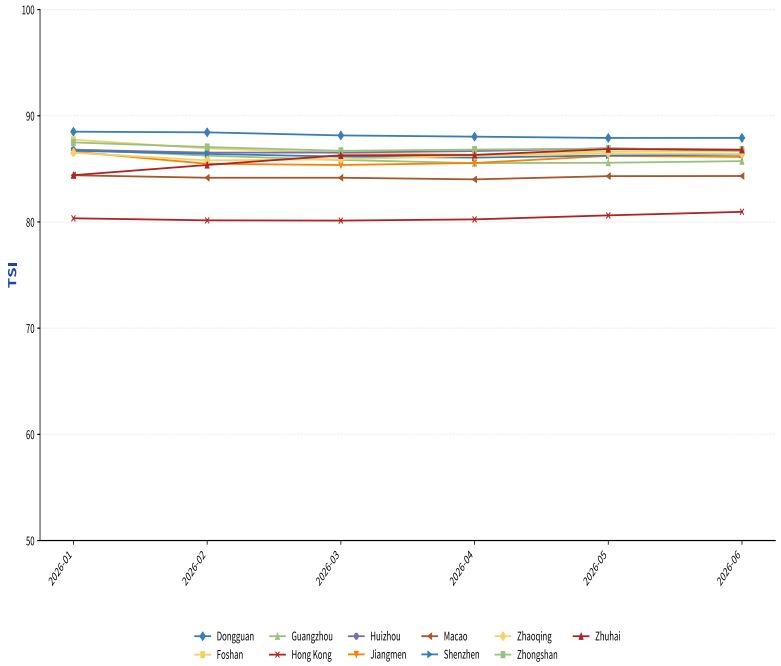
- Relatively stable trends
- Clear sustained gaps among hotels, attractions and restaurants
- Higher TSIs: hotels and attractions.
- Lower TSIs: restaurants.



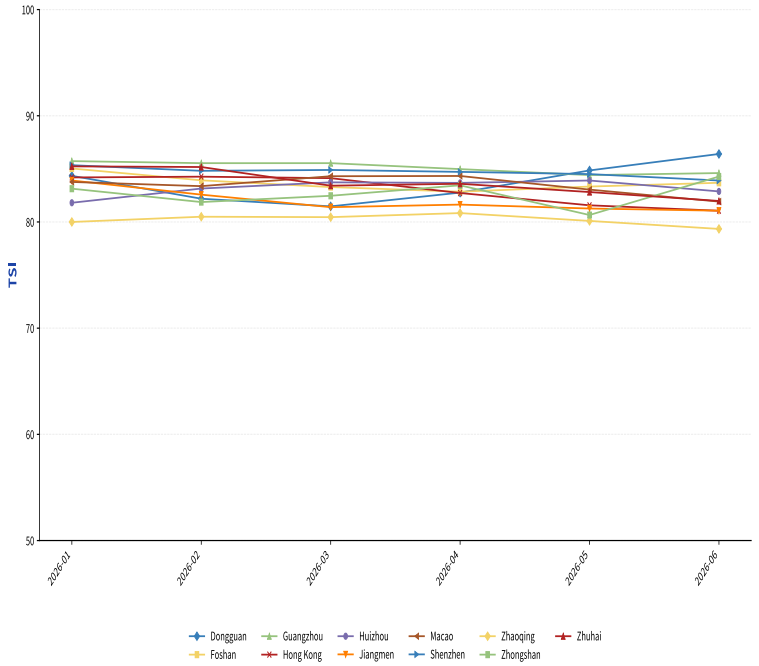
GBA Tourist Satisfaction Index

The sectorial trends

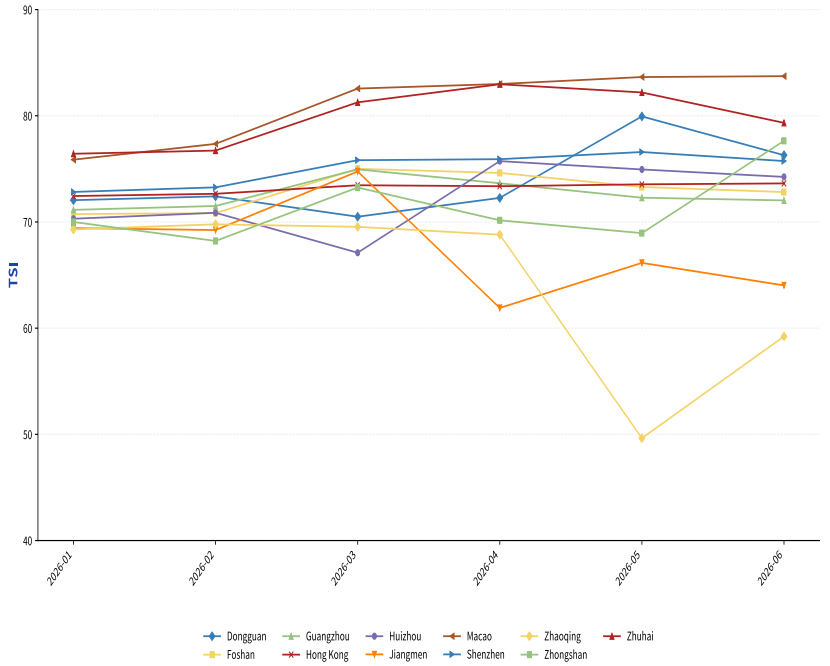
Hotel



Attraction



Restaurant



Sectoral TSI:

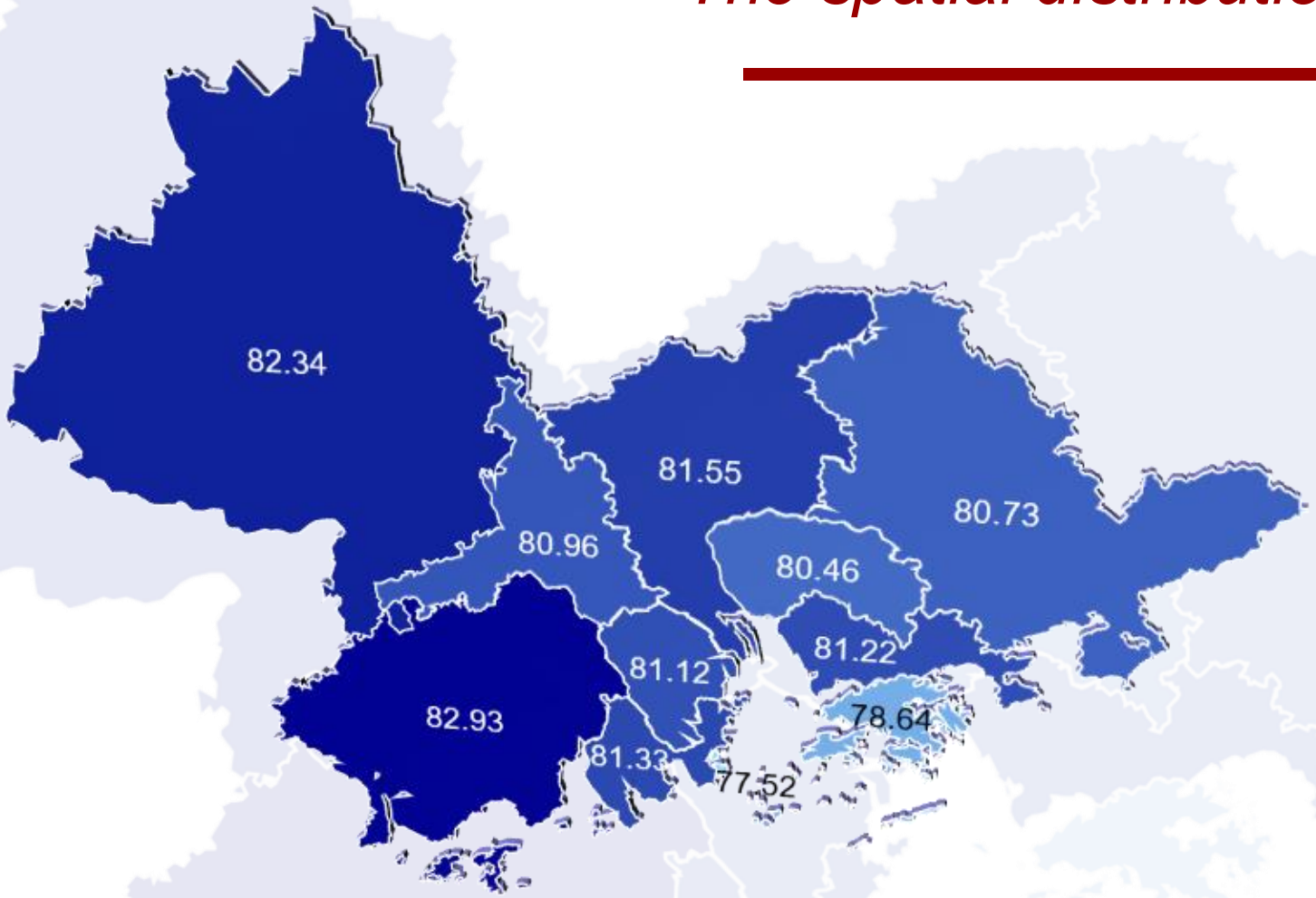
- **Hotel TSIs**: High & stable, slight fluctuations; **Attraction TSIs**: Moderate volatility, narrow value range; **Restaurant TSIs**: Strong temporal heterogeneity, sharp rise-and-fall

GBA Tourist Satisfaction Index

The spatial distribution

Spatial distribution data reveals tourist satisfaction across GBA cities .

- A clear pattern of higher satisfaction in ***inland mainland cities*** and lower scores in ***coastal SARs***.
- No extreme high-value outliers; scores concentrate within 77-83



GBA Tourist Satisfaction Index

The periodical reports



- Regional comparison among GBA cities
- Trend analysis of each city
- TSI scores of various dimensions
- Highlights of the best and worst reviews

GBA Tourist Satisfaction Index

Short-term on-demand Reports



- Customised, almost real-time reports during holidays
- Actionable feedback
- On-demand convenience
- Data-driven improvements and competitive edge

Benefits for Business and Destination

Real-time intelligence and actionable recommendations

- **Massive Scale & Granular Coverage**
  - Processes vast volumes of user-generated content far beyond human coding capacity
- **Nuanced Sentiment Analyses**
  - Advanced LLM-enhanced models better capture subtle language patterns, context, and domain-specific sentiment compared to traditional rule-based or basic lexicon models
- **Multi-Dimensional & Spatial Insights**
  - Breaks down satisfaction across specific sub-sectors (such as transport, hotels, attractions, retail, and restaurants) and maps regional or spatial disparities
- **Demographic & Behavioral Breakdown**
  - Uncovers how satisfaction varies across visitor types (e.g., business vs. solo travelers) and linguistic/cultural groups
- **Data-Driven Strategic Planning**
  - Provides policymakers and tourism operators with actionable, real-time intelligence to pinpoint service quality bottlenecks


GUANGXI TSI

Guangxi Tourist Satisfaction Index

01
Data

209K+ reviews

Time: Jun–Aug 2026

Region: Guangxi

Platform: Ctrip.com

02
Review

Segment all reviews into over ***310K+*** sentences using LLM

03
Satisfaction

Analyse multi-dimensional visitor satisfaction via statement ***semantics*** and ***themes***

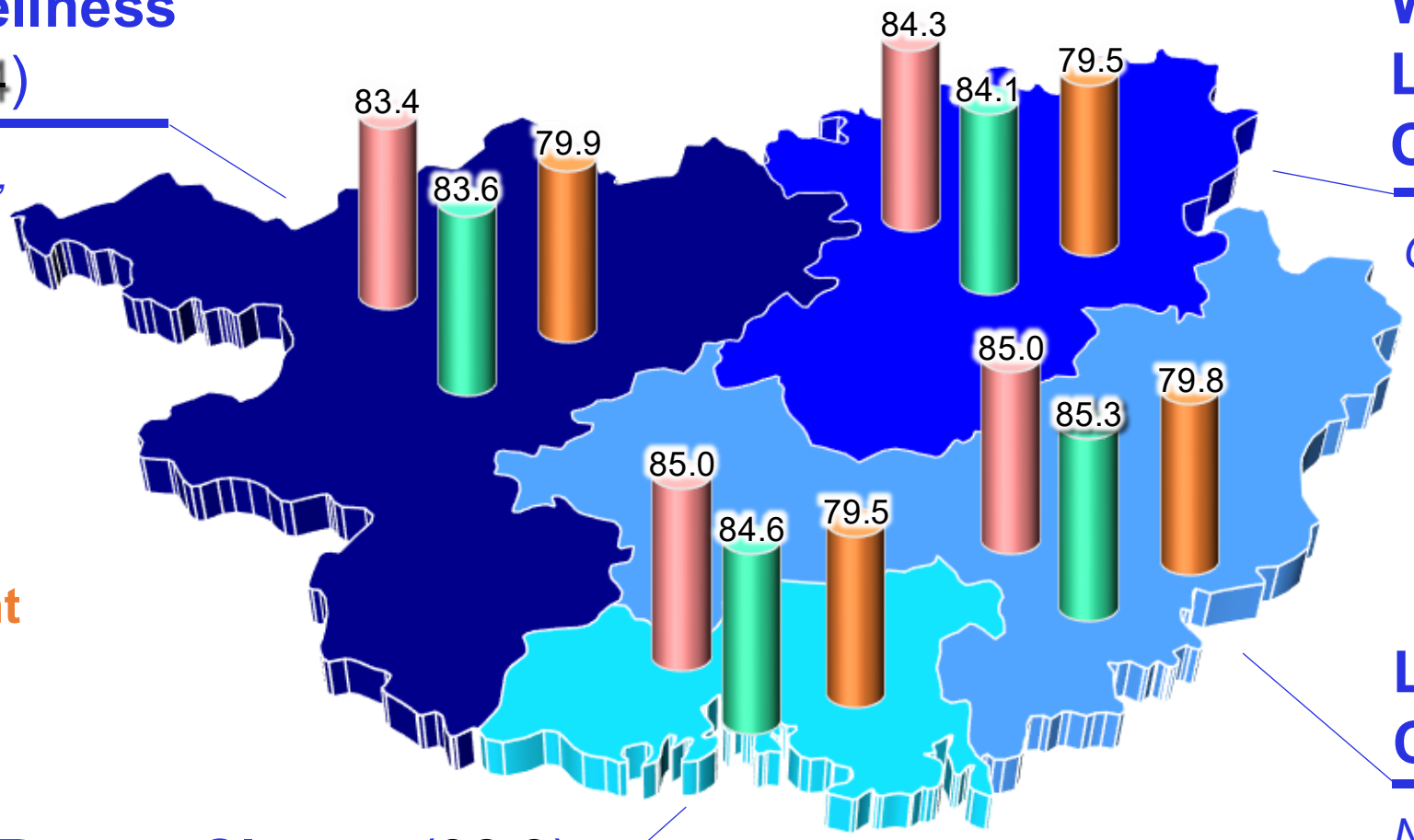
04
Index

Aggregate scores across various ***dimensions*** to compute the satisfaction index

Guangxi Tourist Satisfaction Index

Border & Wellness Cluster (82.4)

Chongzuo, Baise, Hechi



Attraction

Hotel

Restaurant

World-famous Landscape Cluster (82.4)

Guilin, Liuzhou, Laibin

Lingnan Cultural Cluster (83.4)

Nanning, Wuzhou, Yulin, Guigang, Hezhou

Coastal Resort Cluster (82.8)

Beihai, Qinzhou, Fangchenggang

Guilin Tourist Satisfaction Index

Guilin's TSI is slightly above the Guangxi average (**83.0** vs **82.8**)



Likes



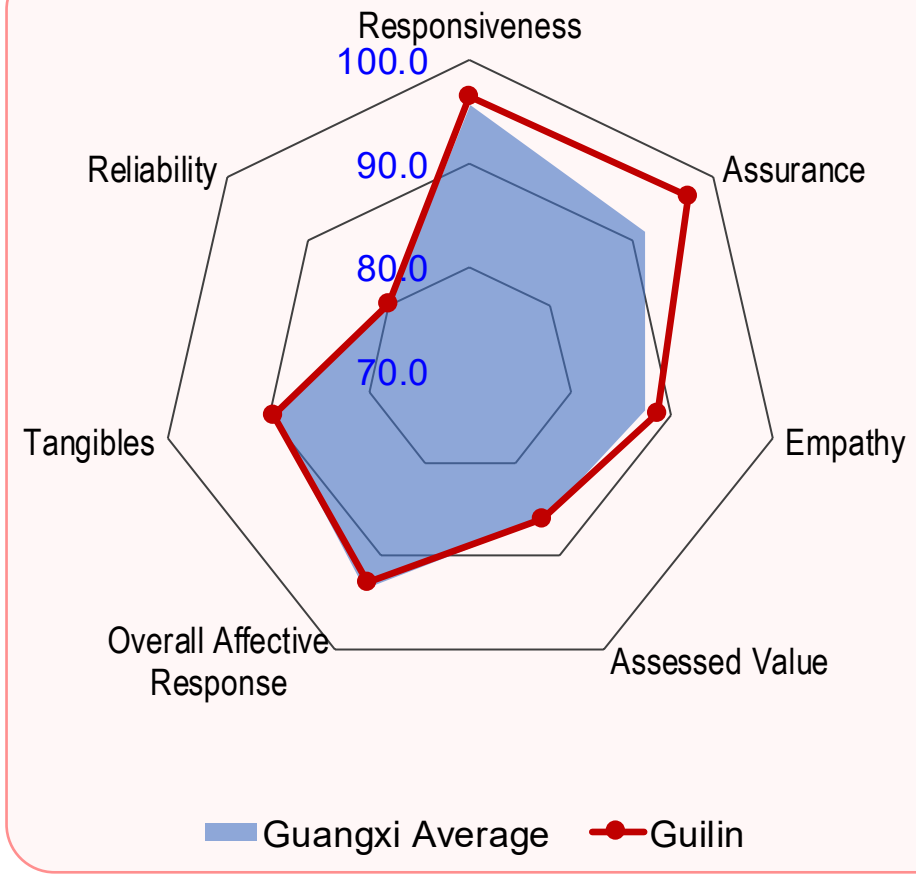
- Karst scenery and local cuisine are praised
- Convenient location and attentive services

Dislikes



- Gaps between booking promises and on-site service
- Hotel maintenance and dining experience

Satisfaction with Attractions



Expert Guiding

Assurance scores 96.9, 5.4 points above Guangxi average; Guides and on-site staff generate positive sentiments

Karst Scenery Well Received

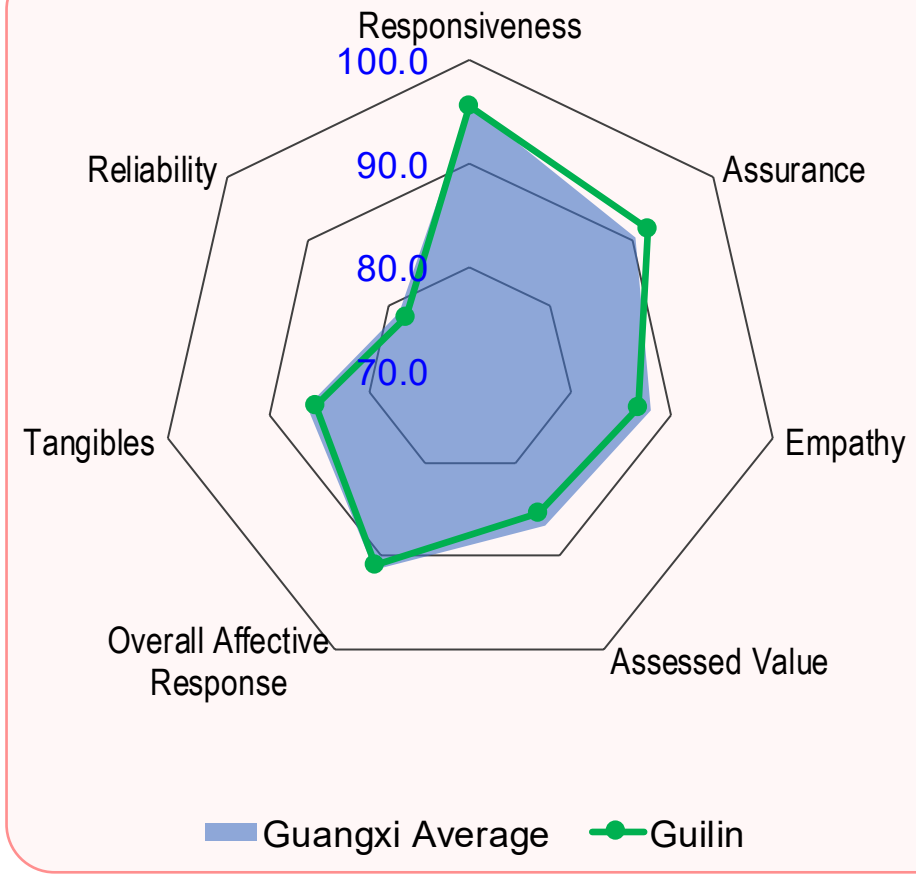
Li River scenery and sightseeing are the main sources of praise

Gaps in Trip Coordination

Ticketing, check-in and transfers do not always match promises; extra charges reduce perceived value

Scenery wins praise; **Guiding** builds trust; **Coordination** falls short

Satisfaction with Hotels



Convenient Location, Warm Service

Easy access, friendly front desk, attentive care for elderly guests

Assurance Slightly Above Guangxi

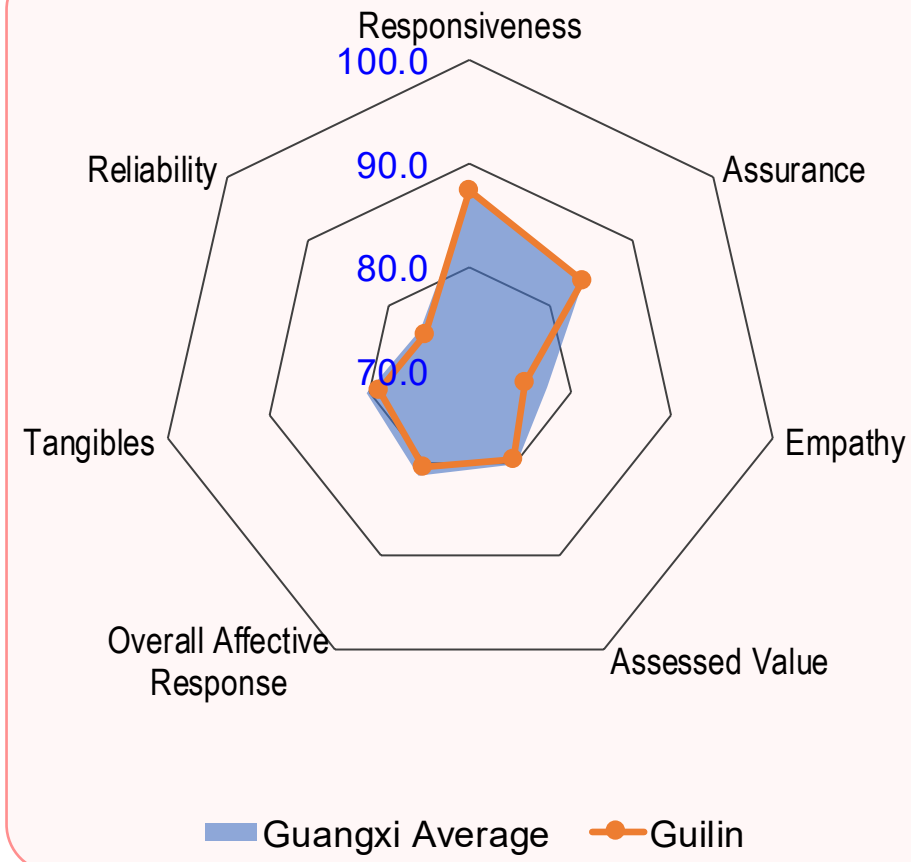
Assurance 92.0, 1.4 points above Guangxi average

Maintenance Needs Attention

Issues relating to damp and musty odors, sound insulation and equipment maintenance generate negative reviews

Location is an asset; **Service** is warm; **Facilities** lag behind

Satisfaction with Restaurants



Local Flavours Are Popular

Rice noodles, beer fish and braised pork belly are highly praised

Pricing Needs More Transparency

Value for money is a main concerns of tourists

Performance Gap in Dining Comfort

Peak-hour waiting time, seating and air-conditioning issues; empathy scores 2.2 points below Guangxi average

Flavours stand out; **Service** slows at peaks; Empathy & Reliability fall short

Overall Assessment

“Guilin performs slightly above the Guangxi average, but unevenly across sectors.

Attractions Are Key Strength	Attraction scores 84.7, 0.3 points above Guangxi; assurance scores 96.9, 5.4 points higher, with guides and on-site staff highly praised.
Hotels & Restaurants below average	Hotels 83.9 and restaurants 79.1, each about 0.6 points below Guangxi TSI; most of the seven dimensions fall below the provincial average.
Restaurants Score Lowest	Restaurants trail attractions by 5.6 points and hotels by 4.8; empathy 75.4, 2.2 points below Guangxi TSI.
Reliability Needs Reinforcement	Reliability is the lowest of the seven dimensions; significant gaps in booking promises, transfers and hotel maintenance.

Recommendations

- Implement fast queueing and improve restaurant comfort, including seating and air-conditioning.
- Ensure on-site travel, transfers, ticketing, and amenities match advertised package descriptions.
- Eliminate hidden attraction fees and clearly display restaurant portion sizes to improve value for money.
- Address critical guest complaints regarding room dampness, musty odors, soundproofing, and slow elevators.
- Elevate hospitality frontline care to match the exceptionally high performance of local tour guides.



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The Research Centre for Digital Transformation of Tourism (RC*d*TT) leverages digital upgrading to enhance travel experiences, achieve dual sustainability for ecosystems and commercial operations, and ultimately improve global quality of life.



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Data-driven decision-making empowers high-quality destination development.

Thank you!

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