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Perceptions of the quality of tourist and visitor attractions: a comparative survey of tourists and residents

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ABSTRACT

This study makes a comparative analysis of tourists' and residents' perceptions of the quality of tourist/visitor attractions across five Brazilian macro-regions (North, Northeast, Central-west, Southeast and South). A survey was conducted during 2021 and 2022, with 1,776 participants (700 residents and 1,076 domestic tourists), focusing on 26 quality indicators derived from the TOURQUAL tool. Both residents and domestic tourists participated in the research. The data were analyzed using ANOVA. The analysis found significant differences between the perceptions of residents and tourists for several indicators, which varied from region to region. Overall, tourists tended to evaluate attractions more positively than residents, although there were some notable exceptions. This study contributes to a deeper understanding of consumer behaviour in tourism by highlighting how different stakeholder groups have different perceptions of the quality of tourism attractions and how these differences vary on a regional basis within a country.

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Perceived quality; service quality; tourist attractions; residents; tourists

Introduction

The perception of quality in tourism services is widely understood to be a critical predictor of satisfaction (Koc, 2020; Saut & Bie, 2022) and influences tourists' behavioural intentions, including loyalty (Akroush et al., 2016; Hussain et al., 2023). High-quality services enhance a destination's competitiveness (Apaza-Panca et al., 2024; Khairunnisa & Krisnawati, 2015; Lai et al., 2018) and contribute to the sustainable development of tourist regions (He et al., 2024; Park & Jeong, 2019). Attractions typically serve both tourists and residents of the local area. It is therefore essential to assess the perceptions of both tourists and residents regarding the quality of services provided at the destination's visitor attractions. This is crucial for maintaining customer satisfaction (Saut & Bie, 2022) and ensuring the continued financial viability of businesses (Wang et al., 2020), while also contributing to the destination's sustainable development (Apaza-Panca et al., 2024; Luo, 2018; Nastabiq & Soesanto, 2021).

The customer's perception of quality is fundamental in defining competitive positioning, and variations in customer profiles can lead to changes in perception

(Aksu et al., 2022). Service offerings must consider the characteristics of different consumer types for diverse consumer needs to be addressed more effectively (Barbosa, 2024; Bezerra et al., 2021). Customer segmentation is, therefore, a valuable marketing strategy for distinguishing between various consumer profiles (Barbosa, 2024). In a tourism context, such an approach helps tourism providers understand how different customer characteristics influence their perceptions, thereby providing insights into how they evaluate the importance and performance of various factors in service delivery (Çelik & Dedeoğlu, 2019; Fotiadis & Kozak, 2017).

Existing studies demonstrate that the perception of quality is inherently subjective and can differ significantly between consumer groups (Oliver, 1997; Parasuraman et al., 1988). For instance, tourists and residents often have different expectations and use different criteria when evaluating the quality of tourist attractions (Karimi & Boley, 2023). Studies focusing on quality perception in tourism have effectively identified strengths and areas for improvement in a range of contexts (Mondo & Fiates, 2017; Mondo et al., 2023; Mondo et al., 2024). Most of these studies, however, adopt a

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unified perspective, neglecting the distinct views of residents and tourists (Bhattacharya et al., 2023; Cheunkamon et al., 2023; Hussain et al., 2023; Kirillova, 2023; Lai et al., 2018). This gap highlights the need for a theoretical exploration of the perceptions of these two consumer groups. In addition, the current tourism literature lacks direct comparisons between residents' and tourists' perceptions of quality (Karimi & Boley, 2023). Understanding these differences is vital, as residents interact continuously with local attractions, whereas tourists often have more specific and potentially critical experiences (Bigne et al., 2023; Cassia et al., 2018; Moliner-Tena et al., 2023; Tabaeian et al., 2022).

Moreover, identifying differences in perceptions can aid in developing more effective marketing strategies and adapting services to cater to the needs of both groups (Schuster & Dias, 2023). Furthermore, as noted by Fotiadis and Kozak (2017), consumers' demographic characteristics can influence the perception and the profile of service offerings. Thus, this study aims to compare residents' and tourists' quality perceptions across Brazil's five macro-regions (North, Northeast, Central-West, Southeast, and South): an approach that is relatively uncommon in existing research. According to Cronjé and du Plessis (2020), engaging a broad range of participants is crucial for gaining a comprehensive understanding of tourism competitiveness, while Shariffuddin et al. (2023) emphasise that the quality of tourism services is relevant to establishing a competitive advantage.

This study has the following research questions: (i) *Do residents and tourists perceive the performance of the same quality indicators similarly?* (ii) *How do visitors perceive the quality of Brazilian tourist attractions in terms of performance?* and (iii) *What differences are there in the assessment of quality indicators among the most-visited attractions across different Brazilian regions?* These research questions focus on comparing quality assessments between these two groups and among Brazil's five macro-regions. Addressing these questions is essential for developing strategies that optimise satisfaction and loyalty for both residents and tourists, thereby promoting the sustainable development of tourism (Barbosa & Ferreira, 2023; Sharpley, 2020).

This study contributes to consumer-behaviour theory in tourism by expanding knowledge on how different groups perceive the quality of tourism services (Karimi & Boley, 2023). It also adds to the existing literature on quality management in tourism by providing new perspectives on measuring perceived quality. To the best of authors' knowledge, this study is the first to conduct a nationwide quality-assessment survey of tourism. From a managerial perspective, the findings can inform

quality improvement policies and marketing strategies aimed at enhancing the satisfaction and loyalty of both tourists and residents (Karimi & Boley, 2023; Luo, 2018). These insights can guide destination and tourist-attraction managers in tailoring services to meet the expectations of both consumer groups. This, in turn, can enhance the competitiveness of destinations, enabling each region to effectively address its quality indicators through a process of continuous improvement.

Literature review

Measuring quality perceptions

Perceptions of quality in the consumption context are based on the subjective evaluations of specific brands (Shi et al., 2022), products (Wilcox et al., 2023), or services (Khudhair et al., 2020). Such evaluations are, in turn, based on factors such as the presentation of the product, service efficiency, customer service, and brand reputation (Shokouhyar et al., 2020). Understanding these factors, as well as exploring their antecedents and consequences, is the focal point of numerous studies (PJ et al., 2023). Parasuraman et al. (1988) introduced the SERVQUAL model as a standardised way to measure service quality. The SERVQUAL model is rooted in the disconfirmation paradigm articulated by Oliver (1980), which argues that customer satisfaction arises from a comparison between two key elements: customers' expectations of the service quality before consumption and their evaluations of the quality of service afterwards. The SERVQUAL model analyzes service quality through five dimensions, each of which contains a standard set of items that can be measured using pre-tested scales. SERVQUAL was intended to be applicable to any service sector, including tourism (Fick & Brent Ritchie, 1991). Tourism scholars have, however, often questioned its full applicability, particularly given the inherent complexities of consumption in the tourism context (Hosany et al., 2022; Mondo et al., 2024). Service-quality perceptions in tourism are particularly important, however, because they not only strongly influence behavioural intentions (PJ et al., 2023) but are also shaped by a range of functional and emotional factors (Barbosa & Ferreira, 2023). This highlights the limitations of applying generalised service models and scales within the unique context of tourism, suggesting that a bespoke model is required.

Quality perceptions of tourism attraction

Tourist attractions represent the backbone of destinations insofar as they comprise their major draw-

factors. Indeed, tourist attractions can have a range of emotional impacts on tourists, positioning them as key contributors to the service-delivery process (Chen et al., 2023). Specific examples of tourist attractions include museums and cultural centres, natural attractions, accommodation, beaches, public fairs and markets, and theatres. The degree of attractiveness of these attractions depends greatly on the quality of the experiences they facilitate (Khairi & Darmawan, 2021).

Schlesinger et al. (2020) argue that analyzing service performance is a crucial management tool for tourist attractions, as it focuses on attributes that can be influenced by managers with the aim of improving their quality. Consumer evaluations can also reveal trends and new demands that could otherwise be overlooked by managers. Such evaluations need to be undertaken regularly because visitors' perceptions and interactions with tourist attractions may evolve over time (Çelik & Dedeoğlu, 2019; Šerić, 2018).

Given the complexities involved in evaluating the quality of tourism experiences, successive authors have built upon the work of Parasuraman et al. (1988) to develop quality-measurement scales tailored specifically to tourism. These include measurement scales for historic attractions (Frochot & Hughes, 2000), accommodation (Falces Delgado et al., 1999; Šerić, 2018), resorts (Figuroa et al., 2015), restaurants (Stevens et al., 1995), national parks (Khan, 2003), and casinos (Bradley & Wang, 2022). The use of such bespoke scales is intended to enhance the detail and accuracy of the resulting quality assessments.

Mondo and Fiates (2017), meanwhile, introduced the TOURQUAL model. First applied in Brazil, it comprises 26 indicators for measuring service quality at tourist attractions. The model has since been applied to various tourism contexts around the world, including museums (Chacón & Casas, 2022; Mondo et al., 2016), restaurants (Mondo et al., 2022), and accommodation (Leal & Maracajá, 2021). It has also been adapted for use in diverse research settings including restaurants (Mondo et al., 2022), bars (Mondo et al., 2023), and UNESCO World Heritage sites (Souza-Neto et al., 2022). More than 500 tourist sites have been evaluated using TOURQUAL, with over 70,000 questionnaires administered to visitors. The scale has demonstrated strong internal consistency and adaptability (Mondo et al., 2024), making it a good option for assessing service quality in tourist attractions.

Existing studies have found that quality perceptions may vary significantly across categories of attraction. Liu et al. (2022), for example, found variations in tourists' preferences among cultural attractions, proposing different subcategories. Daskalaki et al. (2020) identified differences in service-quality perceptions among visitors

to archaeological and technological museums in Greece. Saayman et al. (2016), meanwhile, found that service quality assessments in African national parks fluctuate throughout the year, which was deemed partly due to external factors such as adverse weather conditions. Broader comparative studies across attraction categories are scarce in the literature, underscoring the need for such assessments that can provide new insights for research on quality perception patterns and their contextual determinants.

Differences in quality perceptions between tourists and residents

Previous studies have noted differences in the service-quality perceptions of tourists and residents (Cassia et al., 2018; Karimi & Boley, 2023). Karimi and Boley (2023), for example, found significant differences with respect to the attributes of cultural attractions such as crowd levels, noise, family participation in tourist activities, and security. Both tourists and residents, in contrast, expressed dissatisfaction with features such as river conditions, road and highway maintenance, and public transportation. The study recommends prioritising residents' concerns, as they are the primary stakeholders who experience both the positive and negative impacts of tourism. Cassia et al. (2018), meanwhile, examined residents' and tourists' perceptions of the image of a city across various dimensions including services, leisure, security, municipal facilities, and entertainment. Their findings indicated that only 'municipal facilities' presented a significant perceptual difference, with residents having a more negative perception than tourists. The dimensions of 'services' and 'leisure', meanwhile, received high ratings from all participants, indicating these factors as strengths in the city's overall image.

McDowall (2010) explored the perceptions of service quality at a festival and suggested that cleanliness was rated the lowest by both groups, but particularly by residents, while price was one of the most positively evaluated aspects, but particularly among tourists. Styliadis et al. (2016) focused on residents' perceptions to investigate the image of a destination, finding that the social environment, encompassing elements such as safety and cleanliness, played a crucial role in shaping it. Residents placed high value on such factors generally, while tourists focused particularly on safety aspects (Amalia et al., 2023).

Styliadis et al. (2017) found differences in tourists' and residents' willingness to recommend a destination based on its climate. Climate did not significantly influence residents' intention to recommend their location as a tourist destination. This was ascribed to them being

accustomed to the local weather conditions. In a later study, however, Styliadis (2018) found that climate can play an important role in shaping residents' images of the place where they live. Soler and Gemar (2017), meanwhile, found that while climate is highly valued among tourists, it exhibits limited potential for differentiation between destinations.

Method

Research design and data collection

The study employs a cross-sectional survey design. Conducted in collaboration with the Brazilian Network of Tourism Observatories and the developers of the TOURQUAL protocol, a nationwide survey was carried out to assess the quality of tourist services and attractions in Brazil. The tourism observatories were responsible for the recruitment of attractions through which the survey would be administered. The attractions were then responsible for promoting the survey and encouraging visitors to complete the online questionnaire at the end of their experience. Attractions were selected from all five Brazilian macro-regions. Each tourism observatory informed the attractions about the survey's purpose and provided guidance on inviting visitors to participate. Of the 301 attractions that showed initial interest, 223 actively proceeded with the study.

The population targeted by the survey consisted of residents or tourists visiting the attractions concerned. The question used to categorise respondents as either tourists or residents was: 'Do you live in the surrounding region where the attraction is located, or do you consider yourself a tourist?' The survey targeted Brazilian nationals, so only domestic tourists were included. The decision to include only domestic tourists was based on the timing of the survey, which was from November 2021 and May 2022 – a time when tourism was only beginning to recover following the Covid-19 pandemic (López, 2024; Soares, 2024). The profile of international tourists was atypical at the time and it was therefore considered inefficient to include this group.

The survey used a five-point Likert scale for item evaluation (1 = Terrible, 2 = Bad, 3 = Average, 4 = Good, 5 = Excellent). The items followed the standard TOURQUAL model (Mondo et al., 2024). The questions therefore encompassed a wide range of aspects of service quality at tourist attractions. The questionnaire also captured demographic information including respondents' Brazilian state of origin, resident status, gender, marital status, income, and age. A pre-test with 20 individuals was conducted to assess readability, clarity,

comprehensibility, and correctness of response format. Some minor changes were made based on these comments, mainly in the form of correcting grammatical errors and clarifying sentence structure.

Characterisation of the regions

To better illustrate the context of the research, the main aspects of the five regions investigated will now be described. It is important to highlight that, in this study, we use the term tourist attractions broadly, encompassing both attractions that primarily cater to tourists and those frequently visited by residents for leisure purposes. This distinction is crucial, as our research aims to compare the perceived quality of these attractions among both tourists and residents, recognising that some locations serve as leisure spaces for the local population while still being recognised as tourism sites.

The North is Brazil's largest region in terms of land area and is home to the world's largest forest, the Amazon rainforest. The region has a wide variety of tourist attractions, including forests, beaches, rivers and cities. It also has architectural attractions such as the Amazonas Theatre and the Ver-o-Peso Market. In addition, the main tourist segments practiced in the region are ecotourism and adventure tourism.

The Northeast is characterised by its natural landscapes, beaches, gastronomy and festivities. One of the main tourist attractions is Fernando de Noronha, an archipelago belonging to the state of Pernambuco. It is also worth highlighting the São João (celebrations held during the month of June) and Carnival festivals, which attract numerous people – tourists and residents. As for gastronomy, the state of Rio Grande do Norte stands out, with shrimp as its main gastronomic product (Barbosa et al., 2024). In general, the profile of tourists visiting the region is that of those looking for beaches, culture and gastronomy.

The Central-West region is a popular tourist destination, with attractions such as the Pantanal, chapadas, spas, eco parks and Brasilia, the capital of Brazil. The tourism sector in the region has been expanding progressively, especially adventure and historical tourism. In the state of Mato Grosso do Sul, the municipality of Bonito stands out, receiving around 313,000 tourists a year, being approximately 18% international tourists (Government of Brazil, 2022). The region also hosts other tourist segments, such as religious tourism, rural tourism, and cultural tourism.

In the Southeast, tourism is one of the most important sectors of the region's economy, generating many jobs. Among the main attractions are the historic city

of Ouro Preto (Minas Gerais), New Year's Eve in Copacabana (Rio de Janeiro), and the world-renowned Rio de Janeiro Carnival. In addition, the Southeast is the country's main source and recipient of tourists.

Finally, the South region has tourist attractions such as beaches, parks, historic towns and religious sites. The region has a cold climate for most of the year, which attracts visitors who enjoy this climate. Among the main attractions is the city of Gramado (Rio Grande do Sul), which is one of the most developed tourist destinations in Brazil, with quality infrastructure and many events and festivals. In 2023, the destination received 8 million tourists (CNN Brazil, 2024).

Sample size and power

A total of 4,445 questionnaires were collected, of which 2,323 were discarded due to excessive amounts of missing data. The large number of discarded questionnaires was partly due to the nature of the questions, which required respondents to have used the facility in question to make a valid comment on its quality. When a respondent had not used one of the facilities being evaluated, their questionnaire had to be discarded to ensure the consistency and validity of the dataset. Of the 2,122 remaining questionnaires, 327 were identified as outliers based on the Mahalanobis D^2 statistic (Hair et al., 2009), these having a substantial impact on the overall fit of the linear model, as confirmed by the Cook distance measure (Kutner et al., 2005). Such outliers were excluded from the dataset. In addition, 19 questionnaires that did not contain responses identifying the Brazilian region concerned were also removed. The final sample thus comprised 1,776 respondents, made up of 700 residents and 1,076 tourists.

Due to participants being encountered at the tourist attractions, along with the fact that they were free to decide whether or not to participate in the survey, the sampling method is best described as convenience sampling. How well it represents the total population cannot, therefore, be determined (Bryman, 2012). The sample nevertheless had high statistical power ($1-\beta$ err prob = 0.94) as determined by a post-hoc sample-size calculation conducted using G*Power software (version 3.1.9.4; Faul et al., 2007). The input parameters for this calculation included a small effect size (Cohen, 1988: $f = 0.10$), an appropriate significance level (α err prob = 0.05), and a sample size of 1,776. The sample can therefore be deemed able to detect differences among groups, even with small effect sizes. Taking these results into account, the sample size has the potential to yield high internal validity concerning the inferences to be made, however, because of limitations of

convenience sample, generalizability of those inferences must be cautious.

Due to the differing sample sizes of the two consumer groups within each region, the minimum detectable effect size was assessed using G*Power (Lipsey & Hurley, 2009). This analysis aimed for a power ($1-\beta$) of 0.80 in testing differences in the mean evaluations of the quality indicators, considering a significance level (α) of 0.05. As a result, the samples from the Northeast ($n_{Res} = 79$; $n_{Tur} = 495$), Central-West ($n_{Res} = 128$; $n_{Tur} = 242$), and Southeast ($n_{Res} = 397$; $n_{Tur} = 266$) had the power to detect differences with small effect sizes, with respective limits of $d \geq 0.34$, $d \geq 0.31$, and $d \geq 0.23$. In contrast, the samples from the South ($n_{Res} = 43$; $n_{Tur} = 57$) were only able to detect differences with medium effect sizes ($d \geq 0.59$). The samples from the North ($n_{Res} = 53$; $n_{Tur} = 16$), meanwhile, had the power to detect differences with large effect sizes ($d \geq 0.81$).

Data analysis

A one-way ANOVA was conducted for each of the 26 indicators to assess differences in the average evaluations of the quality of tourist attractions between tourists and residents across the five Brazilian macro-regions. In testing the assumptions necessary for ANOVA, the Shapiro–Wilk test indicated that the distribution of all dependent variables deviated from normality ($p < 0.001$). In addition, Levene's test revealed a lack of homogeneity of variances among the groups (the five regions) for all 26 dependent variables ($p < 0.001$).

Due to the violations of normality and the differences in sample sizes, as well as the need to accommodate the limitation of a convenience sample, a bootstrap procedure with 1,000 resamples was implemented to obtain 95% confidence intervals for the mean differences (Dwivedi et al., 2017). To address the assumption violations regarding the homogeneity of variances, the Welch correction was applied (Field, 2020), and post-hoc evaluations were performed using the Games-Howell technique, as is appropriate when homogeneity of variances is not met, and sample sizes vary (Field, 2020). The overall effect size for the ANOVA results was measured using omega-squared (ω^2), which is less biased than eta-squared (η^2) (Lakens, 2013). Hedges' g was used to assess the effect size for differences in means during the pairwise comparisons of the post hoc tests, as it is less biased than Cohen's d and Glass' Δ , making it particularly suitable for ANOVA designs, especially when sample sizes are small ($n < 20$) or unequal (Ferguson, 2016).

Except for the samples from the North region, t-tests were used to examine differences in the average

assessments of the quality of tourist attractions between residents and tourists. The Welch correction was applied when the assumption of homogeneity of variances was violated (Delacre et al., 2017). The bootstrap procedure with 1,000 resamples was also employed to correct for deviations from normality and sample size disparities, yielding 95% confidence intervals for mean differences (Konietzschke & Pauly, 2013).

For the North region, the nonparametric Kolmogorov–Smirnov two-sample test (K-S2) was used, as is recommended when samples are small ($n < 25$) or unequal (Field, 2020; Siegel & Castellan, 1995). This test assesses whether two samples representing different levels of a categorical variable originate from populations with the same distribution (Pett, 2016). It is highly sensitive, capturing differences not only in central tendency measures (Linebach et al., 2014; Pett, 2016), allowing for a comprehensive examination of cumulative distribution similarities (Pett, 2016). For small samples, the K-S2 test has a higher power (approximately 95%) than the t-test, and it is more efficient than the Wilcoxon–Mann–Whitney test under similar conditions (Siegel & Castellan, 1995). The effect size was calculated using Rosenthal's r (Field, 2020), defined by the following formula where z is the z-score of the test statistic, and N is the size of the total sample studied (Field, 2020).

$$r = \frac{Z}{\sqrt{N}}$$

Sample profile

As shown in Table 1, the sample distribution by region is as follows: North (3.9%), Northeast (32.3%), Central-West (20.8%), Southeast (37.3%), and South (5.6%). In terms of gender, most participants were female (53.9%). Participants were predominantly single (47.4%) or married (39.1%), with most having completed higher education (45.9%) or graduate degrees (27.4%). The average participant age was 35.9 years ($SD = 13.2$ years), and 51% of respondents reported a monthly family income of up to five times the minimum wage (BRL 5,500).

Looking across the regions, females were in the majority in nearly all regions except the South, where the proportion of males was slightly higher. The North region exhibited the largest gender disparity with 63.8% of participants being female. In terms of education, most had either completed or were pursuing higher education, with the Southeast region leading in this aspect. Income distribution revealed that most participants earned between two and four times the minimum wage, although the Southeast had a notable proportion of individuals with incomes exceeding four

times the minimum wage. Regarding marital status, most participants were single, especially in the North and Southeast regions, while the Northeast had a higher proportion of married individuals.

Results

North

Two categories of attractions accounted for most evaluations (88.4%), those being museum/cultural centres (44.9%) and theatres (43.5%). A significant difference in the evaluations of residents and tourists was found for accessibility (K-S2: $D = 0.404$; $Z = 1.418$; $p < 0.05$; $r = 0.17$). Specifically, residents rated road accessibility to attractions lower ($\bar{x} = 3.773$; $SD = 1.103$) than tourists ($\bar{x} = 4.125$; $SD = 1.352$). However, the effect size of this difference ($r < 0.20$) was very small, indicating limited practical relevance. No significant differences were found between the quality perceptions of tourists and residents regarding the other 25 indicators.

Northeast

In the Northeast, two types of attractions accounted for most of the evaluations: public markets and fairs (69.9%), and beaches (16.9%). The t-test results and 95% confidence intervals obtained through bootstrapping revealed significant differences between the assessments of residents and tourists for several indicators (see Table 2). These included restroom availability and cleanliness, aesthetics, safety, prices, availability of technology, cleanliness, tourism carrying capacity, variety of activities offered, sustainability practices, and the technical knowledge of the guide. Except for aesthetics and technical knowledge, in all other indicators tourists' evaluations were greater than those of residents. The effect sizes of the differences were medium ($0.40 \leq g < 0.80$) for nearly all indicators, except for cleanliness, which presented a small effect size ($0.20 \leq g < 0.40$).

Central-West

Three types of attractions accounted for most of the evaluations: hotel/inns (64.05%), natural attractions (17.8%), and parks (13%). The t-test results and 95% confidence intervals revealed significant differences in the average evaluations between residents and tourists for 17 indicators. Among these, only five showed medium effect sizes ($0.40 \leq g < 0.80$) (see Table 3), those being the variety of activities offered, service presentation, attention given by the service provider, technical knowledge of the guide, and technical knowledge of

Table 1. Characterisation of the sample profile.

Sociodemographic Characteristic			Sample						
			Total (n = 1,776)	North (n = 69)	Northeast (n = 574)	Midwest (n = 370)	Southeast (n = 663)	South (n = 100)	
Gender	Female	f	958	44	289	197	386	42	
		%	53.94	63.77	50.35	53.24	58.22	42.00	
	Male	f	752	23	268	166	243	52	
		%	42.34	33.33	46.69	44.86	36.65	52.00	
	Other	f	33	1	1	2	27	2	
Missing data	f	1.90	1.45	0.17	0.54	4.07	2.00		
Marital status	Single	f	33	1	16	5	7	4	
		%	1.90	1.45	2.79	1.35	1.06	4.00	
	Married	f	842	48	194	161	395	44	
		%	47.41	69.57	33.80	43.51	59.58	44.00	
	Divorced	f	695	13	313	146	184	39	
		%	39.13	18.84	54.53	39.46	27.75	39.00	
	Stable Union	f	67	1	23	14	26	3	
		%	3.77	1.45	4.01	3.78	3.92	3.00	
	Widowed	f	123	4	28	41	40	10	
		%	6.93	5.80	4.88	11.08	6.03	10.00	
	Other	f	22	1	12	2	7	0	
		%	1.24	1.45	2.09	0.54	1.06	0	
	Missing data	f	15	1	3	4	6	1	
		%	0.84	1.45	0.52	1.08	0.90	1.00	
	Schooling	No formal education	f	12	1	1	2	5	3
%			0.68	1.45	0.17	0.54	0.75	3.00	
Elementary School		f	6	3	1	0	5	0	
		%	0.34	4.35	0.17	0	0.75	0	
Middle/High School		f	40	14	11	5	20	1	
		%	2.25	20.29	1.92	1.35	3.02	1.00	
Higher Education		f	410	33	182	70	129	15	
		%	23.09	47.83	31.71	18.92	19.46	15.00	
Postgraduate Studies		f	815	18	280	158	312	32	
		%	45.89	26.09	48.78	42.70	47.06	32.00	
Missing data		f	487	68	99	133	189	48	
		%	27.42	98.55	17.25	35.95	28.51	48.00	
Age		Mean	f	18	1	1	4	8	4
			%	1.01	1.45	0.17	1.08	1.21	4.00
		Mode	f	35.87	28.92	42.51	33.19	32.57	33.42
	%		25	22	45	28	25	27	
	Standard deviation	f	13.16	10.85	13.47	9.83	12.95	9.39	
		%	0.68	1.44	0.19	0.79	1.01	0.42	
	Kurtosis	f	-0.09	1.69	-0.67	0.46	0.79	-0.29	
		%	10	18	14	14	10	12	
	Minimal	f	89	62	81	65	89	59	
%		31	3	1	7	15	5		

Source: Research data (2022).

the staff. Significant differences with small effect sizes ($0.20 \leq g < 0.40$) were found for restroom availability and cleanliness, queues, ease of shopping, operating hours, learning, fun/entertainment, escape from routine, safety, prices, tourism carrying capacity, sustainability practices, and service. Tourists' evaluations were higher than residents' in all cases.

Southeast

The most-frequently evaluated attractions in the Southeast region were museums/cultural centres, accounting for 82.4% of responses. The *t*-test results and 95% confidence intervals revealed significant differences in the average evaluations between residents and tourists across nine indicators. Tourists' evaluations were greater in all cases. However, four of these indicators –

queues, operating hours, variety of activities offered, and sustainability practices – showed negligible effect sizes ($-0.20 \leq g < 0.20$) (see Table 4). The effect sizes of the differences were small ($0.20 \leq g < 0.40$) for the remaining five indicators: comfort ($g = 0.221$), infrastructure and maintenance ($g = 0.226$), internal signage ($g = 0.217$), availability of technology ($g = 0.213$), and tourism carrying capacity ($g = 0.211$).

South

The most-frequently evaluated type of attraction in the South was parks (69%), followed by natural attractions (9%) and museums/cultural centres (9%). Significant differences in the mean evaluations of residents and tourists were observed for only two indicators: safety, and sustainability practices, both exhibiting medium

Table 2. Results from the Northeast region.

Indicators	Residents n = 79		Tourists n = 495		Difference of means test ^a				Effect size ^c			
	Mean	SD	Mean	SD	t test	Mean dif.	Bias	Std. error	Lower	Upper	Cohen's d	Hedge's g
					d.f.				BCa 95% CI			
Restroom availability and cleanliness	3.304	1.304	3.806	0.716	85.655	-0.502	0.003	0.150	-0.797	-0.203	0.616	0.616
Aesthetics	4.544	0.730	4.269	0.504	90.206	0.276	0.003	0.089	0.087	0.452	0.510	0.511
Safety	3.772	1.074	4.085	0.494	83.340	-0.313	0.005	0.120	-0.574	-0.068	0.522	0.523
Prices	3.582	1.045	3.982	0.631	87.298	-0.400	0.004	0.119	-0.633	-0.151	0.571	0.572
Availability of technology	3.266	1.288	2.667	1.152	572.000 ^d	0.599	-0.002	0.157	0.281	0.912	0.508	0.509
Cleanliness	3.633	1.100	3.903	0.638	86.575	-0.270	0.001	0.129	-0.532	-0.024	0.378	0.378
Tourism carrying capacity	3.747	1.019	4.109	0.468	83.324	-0.362	0.005	0.115	-0.598	-0.127	0.638	0.639
Variety of activities offered	3.861	0.916	4.127	0.499	85.529	-0.267	0.002	0.105	-0.474	-0.071	0.468	0.468
Sustainability practices	3.278	1.229	2.669	1.143	572.000	0.610	-0.001	0.148	0.326	0.877	0.524	0.525
Technical knowledge of the guide	4.430	0.728	4.192	0.452	87.818	0.238	-0.001	0.088	0.047	0.412	0.480	0.480

^aOnly significant results are shown.

^bHomogeneity of variances not assumed for most of the dependent variables (indicators). In these cases, the Welsh correction was used. The cases where variances are assumed are indicated (^b).

^cCutoff criteria: Negligible effect: $-0.20 \leq d$ or $g < 0.20$; Small effect: $0.20 \leq d$ or $g < 0.40$; Medium effect: $0.40 \leq d$ or $g < 0.80$; Large effect: d or $g \geq 0.80$.

^dHomogeneity of variances assumed.

effect sizes ($0.40 \leq g < 0.80$). For safety [$t(98) = -1.979$, $p \approx 0.051$; 95% CI BCa (-0.697 ; -0.002); $g = 0.401$], residents rated lower ($\bar{x} = 4.233$; $SD = 0.922$) than tourists ($\bar{x} = 4.579$; $SD = 0.823$). In terms of sustainability practices [$t(98) = -1.991$, $p < 0.05$; 95% CI BCa (-0.939 ; -0.040); $g = 0.404$], residents also evaluated this lower ($\bar{x} = 3.814$; $SD = 1.220$) than tourists ($\bar{x} = 4.281$; $SD = 1.114$).

Discussion and implications

This section presents the profile of the most-evaluated tourist attractions in each Brazilian region, highlighting the differences in major categories. It explores how these categories – such as museums and cultural centres in the North and Southeast, public markets in the Northeast, parks in the South, and hotels and inns in the Central-West – shape visitor experiences and perceptions of quality. In addition, it analyzes variations in average attraction evaluations across key indicators, emphasising the regional particularities that impact tourism services. The results indicate distinct categories of attractions across the regions, with only the North and Southeast regions sharing the same category: museums/cultural centres. The North featured theatres as the second most highly rated attraction. These cultural facilities immerse visitors in local culture through cognitive and emotional experiences (Karimi & Boley, 2023; Liu et al., 2022; Su & Teng, 2018). Such spaces are designed specifically for visitation and require careful management of visitor flow. In the Northeast, public markets and fairs were the most highly rated attractions. These open spaces encourage popular participation and are part of local and regional residents' daily lives. They offer tourists an opportunity for deep engagement with local culture, providing a chance to sample traditional foods, shop for local products, and interact with residents (Tsang et al., 2011). Unlike museums and theatres, markets and fairs are generally open to all visitors, with multiple access points and intense circulation of people.

In the South, parks were the most highly rated attractions. These natural spaces, featuring minimal human intervention, are typically used for recreation and tourism including research and the conservation of natural areas (Sisto et al., 2022). In the Central-West, hotels and inns received the highest ratings. These facilities primarily offer accommodation (Apaza-Panca et al., 2024), but many offer additional leisure services and can even be regarded as standalone tourist attractions, providing a key motivation for travel (Xia et al., 2020). Both parks and hotels are central to the tourism experience, influencing how services are planned and delivered at these attractions.

Table 3. Results from the Central-West region.

Indicators	Residents		Tourists		Difference of means test ^a								Effect size ^c	
	<i>n</i> = 128		<i>n</i> = 242		t test			Bootstrap (1,000 resamples)					Cohen's <i>d</i>	Hedge's <i>g</i>
	Mean	<i>SD</i>	Mean	<i>SD</i>	<i>t</i> ^b	<i>d.f.</i>	<i>p</i>	Mean dif.	Bias	Std. error	BCa 95% CI			
Restroom availability and cleanliness	4.383	0.915	4.595	0.701	-2.293	207.540	0.023	-0.212	-0.003	0.091	-0.392	-0.040	0.272	0.272
Queues	4.664	0.605	4.806	0.446	-2.335	201.510	0.021	-0.142	-0.001	0.063	-0.269	-0.025	0.280	0.280
Ease of purchase	4.625	0.664	4.764	0.489	-2.095	201.497	0.037	-0.139	0.001	0.067	-0.286	-0.009	0.251	0.251
Opening hours	4.570	0.791	4.785	0.534	-2.759	189.966	0.006	-0.215	0.001	0.078	-0.370	-0.070	0.339	0.339
Learning	4.609	0.667	4.764	0.489	-2.322	200.890	0.021	-0.155	-0.001	0.067	-0.287	-0.031	0.279	0.279
Fun / Entertainment	4.656	0.704	4.851	0.390	-2.908	169.259	0.004	-0.195	0.000	0.067	-0.338	-0.066	0.375	0.375
Escape from routine	4.797	0.593	4.930	0.287	-2.390	159.014	0.018	-0.133	0.000	0.056	-0.247	-0.022	0.317	0.318
Safety	4.539	0.675	4.731	0.489	-2.854	199.171	0.005	-0.192	-0.001	0.066	-0.322	-0.071	0.344	0.344
Prices	4.172	0.870	4.455	0.682	-3.193	211.069	0.002	-0.283	0.000	0.089	-0.481	-0.104	0.376	0.376
Tourism carrying capacity	4.539	0.626	4.694	0.544	-2.369	229.428	0.019	-0.155	-0.001	0.063	-0.290	-0.030	0.270	0.271
Variety of activities offered	4.336	0.899	4.686	0.516	-4.067	172.371	0.000	-0.350	0.000	0.085	-0.547	-0.185	0.520	0.521
Sustainability practices	4.445	0.761	4.645	0.661	-2.504	229.375	0.013	-0.199	-0.003	0.079	-0.356	-0.047	0.286	0.286
Service presentation	4.602	0.619	4.810	0.452	-3.363	200.340	0.001	-0.208	-0.001	0.061	-0.344	-0.086	0.404	0.404
Attention by the service provider	4.609	0.679	4.860	0.382	-3.859	170.695	0.000	-0.250	-0.003	0.063	-0.378	-0.140	0.496	0.496
Service quality	4.664	0.565	4.843	0.418	-3.155	202.089	0.002	-0.179	0.000	0.055	-0.299	-0.073	0.378	0.378
Technical knowledge of the guide	4.602	0.606	4.822	0.443	-3.637	200.533	0.000	-0.221	-0.001	0.060	-0.342	-0.102	0.437	0.437
Technical knowledge of the staff	4.547	0.626	4.777	0.482	-3.628	208.363	0.000	-0.230	-0.002	0.062	-0.349	-0.117	0.429	0.430

^aOnly significant results are shown.

^bHomogeneity of variances not assumed.

^cCutoff criteria: Negligible effect: $-0.20 \leq d$ or $g < 0.20$; Small effect: $0.20 \leq d$ or $g < 0.40$; Medium effect: $0.40 \leq d$ or $g < 0.80$; Large effect: d or $g \geq 0.80$.

Table 4. Results from the Southeast region.

Indicators	Residents n = 397		Tourists n = 266		Difference of means test ^a				Effect size ^c				
	Mean	SD	Mean	SD	t test	p	Mean dif.	Bias	Std. error	Lower	Upper	Cohen's d	Hedge's g
					d.f.					BCa 95% CI			
Queues	4.599	0.688	4.714	0.564	634.593	0.019	-0.115	0.002	0.050	-0.219	-0.012	0.179	0.179
Opening hours	4.579	0.705	4.692	0.572	637.151	0.024	-0.112	0.001	0.049	-0.208	-0.017	0.172	0.172
Comfort	4.625	0.751	4.771	0.495	660.866	0.003	-0.146	0.001	0.051	-0.249	-0.038	0.221	0.221
Infrastructure and maintenance	4.615	0.721	4.759	0.501	660.108	0.002	-0.145	0.000	0.050	-0.242	-0.049	0.225	0.226
Internal signage	4.524	0.793	4.684	0.654	632.970	0.005	-0.160	0.001	0.060	-0.271	-0.041	0.216	0.217
Availability of technology	4.325	0.923	4.511	0.802	618.084	0.006	-0.186	0.002	0.070	-0.315	-0.045	0.213	0.213
Tourism carrying capacity	4.539	0.736	4.680	0.562	649.693	0.005	-0.141	0.001	0.051	-0.240	-0.040	0.210	0.211
Variety of activities offered	4.335	0.865	4.481	0.788	661.000	0.027	-0.146	0.000	0.067	-0.276	-0.018	0.175	0.175
Sustainability practices	4.403	0.867	4.534	0.782	605.892	0.044	-0.131	-0.002	0.066	-0.247	-0.014	0.157	0.157

^aOnly significant results are shown.

^bHomogeneity of variances not assumed for most of the dependent variables (indicators). In these cases, the Welch correction was used. There is only one case in which homogeneity of variances are assumed (^d).

^cCutoff criteria: Negligible effect: $-0.20 \leq d$ or $g < 0.20$; Small effect: $0.20 \leq d$ or $g < 0.40$; Medium effect: $0.40 \leq d$ or $g < 0.80$; Large effect: d or $g \geq 0.80$.

^dHomogeneity of variances assumed.

In terms of average ratings, attractions in the North-east received the lowest scores on almost all indicators, except for prices, weather conditions, and external signage showing directions to the attraction. In contrast, attractions in the Central-West and Southeast regions received higher evaluations on average. The most pronounced regional differences (based on effect sizes) were observed in the indicators of restroom availability and cleanliness, availability of technology, general cleanliness, and sustainability practices.

The second part of this discussion analyzes the differing perceptions of quality between tourists and residents at tourist attractions across various Brazilian regions. The results highlight significant variations across evaluated indicators, revealing patterns and discrepancies that provide valuable insights for tourism management and the adaptation of services to different profiles of tourists. Differences between residents' and tourists' evaluations were found in several indicators across specific regions: restroom availability and cleanliness in the Northeast and Central-West; availability of technology in the Northeast and Southeast; general cleanliness of attractions in the Northeast; and sustainability practices in the Northeast, Central-West, Southeast, and South regions. These differences were most pronounced in the Northeast (with medium effect sizes), except for general cleanliness, where the effect size was smaller. Overall, tourists tended to provide higher average evaluations than residents. One exception is in the Northeast, where residents rated the availability of technology, aesthetic, sustainability practices, and technical knowledge of the guide more favourably than tourists, who tended to perceive these factors to be lacking in quality.

Given that public markets and fairs were the most-evaluated attractions in the Northeast, it is likely that tourists placed greater importance on technology availability in these venues to enhance their experience. According to Pai et al. (2020), access to technology (such as Wi-Fi and informational resources) is crucial for improving travel experiences and personalising them, thereby contributing to tourist satisfaction. As tourists are often unfamiliar with local markets, they seek technological resources to facilitate their experience – something less critical for residents. Enhancing technological infrastructure in such venues could thus add value to the overall service offering (Mondo & Fiates, 2017; Preko et al., 2023).

Except for aesthetics, the pattern of evaluations by residents and tourists is the same: tourists tend to evaluate quality aspects more positively than residents. However, in the case of aesthetics in the Northeast region, residents reported higher ratings than tourists.

Public markets and fairs, the most-evaluated attractions in this region, integrate the local culture and are mainly frequented by residents. For many tourists, this can generate an image that is not perceived positively since the aesthetics of the attraction refers to the image that the tourist creates of the location (Khairi & Darmawan, 2021; Mondo & Fiates, 2017; Nastabiq & Soesanto, 2021). This low rating of the attraction's aesthetics may reflect unmet expectations as the aesthetic experience depends on the destination's attributes and the visitor's personal characteristics (Guo et al., 2023; Kirillova, 2023; Kirillova & Lehto, 2015; Schlesinger et al., 2020). It may also result from less than satisfactory interaction with residents considering that the human factor is also part of the aesthetic dimension of travel (Kirillova, 2023; Kirillova & Wassler, 2019). In addition, it is worth noting that public markets and fairs usually have an intense flow of people and excessive noise levels, making visiting these places uncomfortable. Karimi and Boley (2023) found that such environmental factors are perceived differently by tourists and residents when assessing service quality.

The pattern observed for technical knowledge of the guide is repeated for attractions in the Central-West region but not for those in the Northeast region. This means that residents rate the knowledge of tour guides higher than tourists. This finding can be explained by the tendency for residents to know the local tourist attractions and simply do not need a guide. On the other hand, tourists, as visitors to the destination, need a guide to know information related to the attraction (Mondo & Fiates, 2017). This result is in line with Huang et al.'s study (2010) indicating that the tour guide's performance has a direct and significant effect on tourist satisfaction including the relevance of the guide's technical knowledge (Huang et al., 2010; Li et al., 2021). Improving the training and qualifications of tour guides in the Northeast region could, therefore, lead to a more positive evaluation from tourists, enhance tourists' trust and credibility (Chang, 2014), judgment of service quality (Li et al., 2021), and intention to return (Syakier & Hanafiah, 2022).

In relation to the fun/entertainment attribute, most regions showed no significant differences between the perceptions of residents and tourists. This aligns with the findings of Cassia et al. (2018), which indicates that both consumer groups perceive entertainment similarly. However, in the Central-West region, tourists rated this aspect more positively than residents. This can be attributed to the fact that the most frequently evaluated attractions in this region were hotels and inns, which primarily cater to visitors. As such, residents may not perceive these accommodations as providing

entertainment or fun. In addition, Mondo and Fiates (2017) note that entertainment is closely linked to individual satisfaction and relaxation, which are part of the tourist experience (Luo et al., 2020) during hotel stays.

Concerning safety, tourists rated this aspect more favourably, with a particularly pronounced difference in perceptions between tourists and residents in the Northeast region. The main attractions in this region were public markets, where visitors likely feel secure due to the care and attention they receive during their visits (Fuchs & Pizam, 2011; Mondo & Fiates, 2017). This leads to two interpretations regarding residents' perceptions: residents are not afforded the same level of attention as tourists, or their familiarity with the local environment and safety protocols contributes to a diminished sense of security. However, pinpointing a definitive explanation is challenging as perceptions of safety are inherently subjective (Zou & Yu, 2022). It is recommended that both residents (Stylidis et al., 2016) and tourists (Amalia et al., 2023; Zou & Yu, 2022) receive similar treatment regarding safety, as both groups place significant value on this aspect.

Regarding the weather conditions, the results indicated no significant differences between residents and tourists across any of the five regions. This suggests that climate does not play a crucial role in shaping perceptions of the quality of tourist attractions. This finding contrasts with existing literature, which suggests that a destination's climate significantly influences tourists' perceptions (Becken, 2013; Muñoz et al., 2021; Stylidis et al., 2017) and those of residents (Stylidis, 2018; Stylidis et al., 2016). It is possible that since participants evaluated specific attractions rather than the overall destination, weather conditions did not substantially impact their perceived quality of the venue. This observation resonates with Soler and Gemar's (2017) study, which found that weather has minimal influence on differentiating the tourist experience. In addition, most evaluated attractions operate indoors, making weather concerns less relevant, particularly for attractions held outdoors (Mondo & Fiates, 2017).

Theoretical implications

This study advances the understanding of consumer behaviour in tourism, not only in terms of how different groups of stakeholders perceive the quality of tourism services but also how this can vary across the regions of a country. The results confirm that the perception of quality varies between residents and tourists, with some attributes being more important to one group than the other. Such differences are not consistent, however, across regions, with some attributes

exhibiting significant differences in some regions but seemingly not in others. The presence of such differences begs the question, of course, of why they exist. While some theories may appear appropriate, none has, to the authors' knowledge, yet been thoroughly tested. This study provides some clues as to where priority attention should be focused.

First, this study points to the possibility that familiarity may be a major determinant of differences in tourists' and residents' quality perceptions of tourist attractions. The findings suggest, for example, that perceptions of aesthetics at public markets and fairs often vary significantly between tourists and residents. One possible explanation is that local residents may frequent such places on a daily basis and have, as such, become accustomed to them. In a sense, they have become habituated to the hustle and bustle, noise, and smells of the market. Their quality perceptions in this respect are thus lower than those of tourists, to which the aesthetics of the public market or fair are very new and unfamiliar. In short, tourists notice the aesthetics more. In this respect, the adage that 'familiarity breeds contempt' may apply. Efforts to address the lower quality perceptions of residents may, therefore, not be even noticed, in which case they would be wasted. If the efforts are noticed, meanwhile, they may not be welcomed, as the residents may not appreciate attempts to manage their daily experiences. As such, measures to address their lower quality perceptions may be counterproductive.

Second, this study points to the importance of the geographical scale at which service-quality evaluations are carried out. One of the most notable findings of this study is that the topics where the evaluations of tourists and residents differ most can vary greatly between regions. Indeed, similarities between the regions with respect to the differences in quality perceptions between tourists and residents are relatively few. Evaluations at the national level are therefore likely to be less insightful than those undertaken at the regional level. An example of this is the climate variable which, while likely to be important at the national level in serving as a powerful tourist attraction, does not appear to have great relevance at the regional level. At the local level, where the decisions that matter the most need to be made, the relevance is likely to be even less clear. The role of scale in determining quality perceptions is thus another area on which the development of theory could usefully focus.

Third, this study is the first to implement a nationwide, standardised quality assessment of visitor attractions in Brazil. This methodological approach is particularly relevant for academia, as it enables more

precise cross-regional comparisons, allows for deeper inferential statistical analyses, and fosters the development of research and management networks across the country. By establishing a common framework for evaluating service quality in visitor attractions, this study contributes to advancing theoretical discussions on how large-scale quality assessments can inform both academic research and policy decisions in tourism management.

Managerial implications

The TOURQUAL model is designed to enable managerial lessons to be learned, and the present study is accordingly rich in these. Given the size and structure of the survey conducted in this study, further scrutiny of the data will doubtless reveal many more. A broad-brush analysis of the data, as presented above, reveals several overall lessons.

First, the findings of this study underscore the importance of investigating the quality perceptions of both the tourists and residents who frequent tourist attractions. Both groups are important stakeholders in the destination, so it is important to determine whose interests will be prioritised. In some cases, the interests of tourists will be deemed to have priority, while in other cases it will be the interests of residents. In still other cases, the interests of the two stakeholder groups will not be in direct conflict, so the question of whose interests should be prioritised is not relevant. Such considerations come into play, however, when the quality perceptions of the two groups differ, which is why the techniques used to measure such perceptions need to be sophisticated enough to distinguish clearly between them.

Public markets and fairs are an instructive example of this. Such attractions serve both a practical function for residents and as an attraction for tourists. As such, they often face the challenge of balancing the preservation of their original function while meeting the expectations of tourists. Specific challenges noted in this study relate, for example, to the availability and cleanliness of bathrooms, the overall cleanliness of the attraction, and the availability of technology. These features are more complex to manage because there are significant disparities in the quality perceptions of tourists and residents. This means that efforts to address gaps in provision to satisfy one group may not be sufficient to satisfy the other.

Second, this study enables differences in quality perceptions between tourists and residents to be mapped over the regions of an entire country, in this case Brazil. The broad message is that regional differences can and do exist. This implies that while there may be

significantly different quality perceptions between tourists and residents regarding a specific issue in some regions, there may be no strong evidence to suggest that this is the case in other regions. This result calls for a distinctly regional approach to the management of quality perceptions of tourist attractions. Actions designed to address a shortfall of quality detected in one region may simply not be appropriate elsewhere, where quality perceptions may be quite different.

Limitations and future research

It is important to acknowledge the limitations in this study. First, the North region had a smaller sample compared to other regions, which serves to limit the reliability of the findings from this region and hence the cross-comparisons made in this study. Another limitation is that the sample consisted solely of domestic tourists; including international tourists could offer a broader perspective, enrich the analysis and augment the results of this study. The study can provide insights for developing strategies in other countries, particularly in similar contexts. By analyzing Brazilian consumers' perceptions of service quality, it is possible to identify trends, preferences, and behavioural patterns that may be applicable to emerging markets or countries with comparable socioeconomic, cultural, and behavioural characteristics. Future studies could also explore the relationship between perceived quality and related constructs such as satisfaction, loyalty, and intention to return, allowing for a better understanding of how quality perceptions influence subsequent behaviours. Future research could also focus on standardised tourist attractions, as this study focused on different combinations of attractions in each region. Standardisation could allow the specific characteristics of each attraction to be taken more fully into account.

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