

## **Mapping Perceived Service Quality in Tourism Resorts through User-Generated Content**

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### Abstract

This study aims to identify the key components of service quality in Brazilian tourism resorts based on user-generated content posted on online platforms, using indicators drawn from the TOURQUAL model. The research is exploratory in nature, employing a quantitative approach. The sample comprises 82,327 textual comments published between January 2023 and January 2024. These were extracted from the TrustYou platform, which consolidates guest reviews from Google, TripAdvisor, and Booking.com. The software tools T-LAB (version 8.1) and R-Studio, with the *quanteda* package, were used to conduct thematic analysis, lexical mapping, and dimensionality reduction through Sammon's mapping technique. The analysis found that perceptions relating to tangible and operational aspects were important, including factors such as food and beverage services, physical infrastructure, recreation, and cleanliness. Customer service was the most prominent perceived quality factor, involving elements such as the friendliness, technical knowledge, and attentiveness of staff.

**Keywords:** Service quality; User-generated content; Resorts; TOURQUAL; Brazil; Lexical analysis

### Introduction

The economic importance of tourism to Brazil is underscored by its contribution of 7.7% to the national GDP in 2023 (WTTC, 2024). Within this scenario, the resort segment – particularly that part of it based on the all-inclusive model – has shown significant momentum. According to the 2024 edition of Radar Resorts Brasil, the main report published by Resorts Brasil (the country's largest association of resorts), there are currently 12 new projects under development by member resorts, which corresponds to an estimated 8% increase in the number of resorts nationwide. These initiatives collectively imply the addition of 2,922 rooms to the stock. Additionally, the sector reported a consolidated Net Promoter Score (NPS) of 70 in the second quarter of 2024, indicating a high level of customer satisfaction and loyalty.

The economic importance of resorts is, however, often underestimated. One reason is that they are typically included in the broad category of accommodation providers. This serves to obscure the specific contribution of resorts in the wider tourism economy. Resorts are, however, more than just large hotels. According to the Brazilian accommodation classification system, resorts are defined as “hotels with leisure and entertainment infrastructure offering aesthetic services, physical activities, recreation, and nature-based experiences within the same property” (Ministério do Turismo, 2010, p.6). This configuration of on-site services and experiences tends to be associated with extended stays and high guest retention, making resorts important drivers of the tourism economy in the destinations where they are located.

Tourism resorts typically have a high level of operational complexity due to the wide range of on-site services and experiences they offer. This increases the challenges not only of effectively managing those services and experiences but also of marketing the overall offer to potential customers. Under such circumstances, resorts must utilize every source of data they can acquire relevant to the guest perceptions of their service quality. This includes social media posts made by guests (Oliveira et al., 2024), turning user-generated content (UGC) into an essential source of data upon which guest experiences can be assessed and improved (Bonfato & Baltieri, 2016; Sthapit, 2019). Online reviews also significantly influence consumer choice (Chen et al., 2025). As such, UGC has become a strategic input for understanding tourist decision-making (Silva et al., 2021). Oliveira et al. (2024) highlights the relevance of this research approach in the context of hostels – findings that are also applicable to resorts.

Despite the increasing use of digital content in hospitality management, there remains a notable scarcity of studies that combine UGC ‘big data’ with established service-quality assessment models. Most research has focused on sentiment analysis or topic modeling, but it has tended not to link findings to validated, management-oriented frameworks. This is particularly pronounced in the resort segment. Such frameworks do, however, already exist and could realistically be put to work. Within the tourism literature, the cycle of quality → satisfaction → image → competitiveness (Grönroos, 1984; Parasuraman et al., 1985; Oliver, 1997) is well established, and the TOURQUAL model – which is based on this – is widely recognized as a suitable framework for managing service quality in tourism (Robustin & Hariyana, 2019).

The theoretical lens guiding this study is the TOURQUAL model, a framework that systematizes perceived service quality across dimensions such as human interaction, infrastructure, ambience, safety, accessibility, and the experiential components of tourism services. By grounding the analysis in this model, the study assumes that guests’ narratives in UGC reflect structured patterns of evaluation aligned with these dimensions. Accordingly, the central research question guiding this investigation is: Which service-quality components most prominently shape guests’ perceptions of Brazilian resorts, as expressed through large-scale user-generated content?

The purpose of this study is, therefore, to identify the most salient service-quality components of Brazilian resorts based on the analysis of UGC, using indicators drawn from the TOURQUAL model. While the TOURQUAL model has previously been applied in studies based on UGC, the present study is distinctive for applying the model in a resort context and with a nationwide sample of UGCs, comprising over 80,000 comments. It also uniquely integrates lexical co-occurrence analysis with dimensionality reduction mapping using the Sammon (1969) method.

## Literature Review

### *User-Generated Content (UGC) and Resorts*

Consumers are not just buyers: they can also be influencers, eager to share their evaluation of their consumption experiences (Redek & Godnov, 2024). The term UGC refers to media created and shared by non-professional individuals – such as texts, photos and videos – on online sharing platforms such as blogs, social networks and recommender forums, conveying personal experiences and opinions (Moens et al., 2014). In tourism, review-and-ratings platforms are a popular form of such sharing (Jia, 2020). Due to their speed, convenience and accessibility, online sharing platforms are increasingly used by travelers throughout their journey, from the planning stage to the post-trip reflection (Wen et al., 2021). Such platforms may have a limited geographical scope, being limited to just one country or region, or they may enjoy a near-global presence (Guo et al., 2021). Examples of the latter include sites such as Tripadvisor, Google Reviews, Booking.com, Airbnb and Yelp. Such platforms can be said to constitute a complex sociocultural and economic ecosystem, encompassing diverse businesses, segments and users (Xiang et al., 2017; Sthapit, 2018).

The number of academic studies using UGC as a data source has grown across diverse contexts – including interpersonal communication, and journalism – alongside an increased interest in the analysis of weblogs and social media (Ukpabi & Karjaluto, 2018). Many of these studies have used quantitative methods, with a strong focus on statistical methods such as structural equation modelling. The focus has, however, tended to be on hotel accommodation, and most studies have focused on how hotels should manage their online communications. Liu and Ji (2019), for example, found that the speed and tone of hotels’ responses to reviews significantly influence potential guests’ perceptions of helpfulness, reinforcing the importance of responding to both positive and negative feedback. Sop et al.

(2023), meanwhile, argue that a robust protocol for monitoring and quickly addressing online reviews can mitigate reputational risks posed by fake negative guest feedback.

Few studies have used UGC in the resort context. Studies have examined, for example, resorts' green image in the social media (Chan et al., 2024), establishment reputation (Tang et al., 2023), and niche contexts such as agritourism resorts (Chatzigeorgiou & Christou, 2020). Stanton et al. (2019) consider the word-of-mouth marketing implications on social media in the case of resorts. Of the very few studies in the Brazilian context, Silva et al. (2019) investigated the projected image of resorts on Instagram using iconological analysis, while Sturmer and de Souza (2019) examined the implementation of websites in Brazilian resorts, underscoring the need for efficient digital communication with guests. No study to date has, however, harnessed UGC along with a structured framework such as TOURQUAL to investigate the sources of guest satisfaction and dissatisfaction in a resort context.

### ***Resort Service Quality***

The assessment of service quality within resort environments has emerged as a critical focus in hospitality research, particularly in relation to guest satisfaction and strategic brand positioning. A study conducted in resort hotels in South-East Nigeria examined the relationship between service quality and guest satisfaction (Nneoma & Uwabor, 2021). Employing data collected from guests using a structured questionnaire, the study found a significant positive relationship between specific service quality dimensions – tangibility, reliability, and responsiveness – and customer satisfaction. The findings emphasize that enhancing service quality leads to increased customer satisfaction, retention, and loyalty. The study recommends creating memorable first experiences and employing enthusiastic staff to strengthen guest confidence and repeat patronage. Adhikari et al. (2023) addressed the contextual limitations of existing service quality measurement tools by developing a localized SERVQUAL-based instrument specifically for Nepali tourist-standard resorts. Using a modified Delphi technique, the study engaged industry experts to validate the instrument, which culminated in a six-construct framework with 29 items. This approach underscores the importance of culturally and contextually grounded measurement tools in hospitality service evaluation.

Service-specific attributes, notably those related to food and beverage provision, have also been shown to exert a considerable influence on guest satisfaction. Vogel et al. (2021) conducted a qualitative-quantitative analysis of online travel reviews from resorts in Brazil and the Caribbean, identifying bar services, food quality, and staff performance as key determinants of positive guest experiences. The study found consistent patterns across both regions, suggesting a universal set of expectations regarding food service quality among resort guests. In a similar vein, Pereira et al. (2021) employed linear regression analysis to evaluate Tripadvisor reviews from resorts in southern Brazil. Their findings indicated that eight out of nine quality dimensions positively correlate with overall guest satisfaction. Of particular note was the vital role of perceived value, whereby the alignment between price and quality was instrumental in shaping consumer perceptions, post-stay evaluations, and future recommendations.

Several studies have further explored broader strategic and image-related considerations. Frochot and Kreziak (2008), for example, analyzed visual representations in promotional materials and found that image plays a pivotal role in the positioning strategies of French ski resorts. Their research highlighted the symbolic function of imagery in shaping tourists' expectations and destination identity. Barbosa and Isayama (2014) examined leisure as a strategic organizational element in Brazilian resorts, revealing how socio-economic dynamics, market conditions, and managerial strategies influence the structuring of leisure services within these establishments. Moraes and Helbig (2019) adopted a sociocultural perspective, emphasizing the potential of Brazilian resorts to serve as vectors for the dissemination of local

and regional cultural and environmental values. Their findings suggest that resorts that are integrated with natural landscapes and cultural elements are well-positioned to appeal to environmentally and culturally conscious tourists, thereby contributing to local socio-economic development.

Building on efforts to refine service quality assessment in resort contexts, Liu et al. (2016) introduced a reflective–formative measurement model tailored to hot spring resorts. Through empirical analysis using structural equation modeling, the study identified six formative dimensions – water quality, customer service, facilities, surroundings, alternative activities, and convenience – as constitutive elements of overall service quality. This model advances the conceptualization of service quality by emphasizing how distinct experiential components collectively shape guest perceptions, offering a more granular and context-sensitive framework that complements existing reflective approaches in hospitality research.

### ***The TOURQUAL Model***

The breadth of variables influencing this perception in the case of tourism and hospitality makes quality management a complex and difficult task (Nastabiq & Soesanto, 2021). In this regard, the development of validated assessment tools plays a crucial role (Leutwiler-Lee et al., 2023). Although SERVQUAL represents the foundational framework in service-quality research, this study does not operationalize its dimensions. Instead, it adopts the TOURQUAL model, which offers indicators specifically validated for tourism contexts, making it more suitable for analyzing service quality in resorts. Responding to this need, Mondo and Fiates (2017) developed the TOURQUAL protocol specifically for the tourism sector. Drawing from a review of internationally validated quality models, TOURQUAL constitutes a set of indicators relevant for assessing the perceived quality of tourist attractions (Mondo et al., 2024). The indicators included in TOURQUAL relate to accessibility, ambience, experience quality, safety, technical quality, and human factors. The original model comprised 26 indicators. Based on empirical testing and broader market assessment, the scale has evolved to include indicators such as sustainability (Mondo et al., 2024).

The TOURQUAL scale has been applied in a wide range of tourist attractions globally (Alves de Medeiros ET AL., 2025; de Oliveira Borges et al., 2025; Mondo et al., 2016; Platt & Mondo, 2019; Leal & Maracajá, 2021; Mondo et al., 2022). It has also been used in more varied contexts such as restaurants (Platt & Mondo, 2019; Mondo et al., 2022), bars (Mondo et al., 2023), historic centers (Souza-Neto et al., 2022), museums (Mondo et al., 2016), events (Mondo et al., 2018b, 2020), accommodation (Leal & Maracajá, 2021) and tourist transport (Tavares et al., 2022). Its adaptability has also enabled its use at the tourism destination level (Mondo et al., 2018a). The TOURQUAL framework demonstrates strong internal consistency and adaptability, positioning itself as an efficient and promising tool for evaluating service quality across both national and international tourism settings (Souza-Neto et al., 2022; Mondo et al., 2024). Unlike generic service quality scales such as SERVQUAL (Buttle, 1996), however, TOURQUAL was specifically designed to measure quality in tourist attractions. At the time of its development, quality assessment in tourism often focused solely on human and infrastructural aspects, overlooking various other important indicators (Mondo & Fiates, 2017). TOURQUAL offers measurement indicators aligned with tourism contexts, guiding managers to identify and act on critical service areas.

### ***UGC and the TOURQUAL Model***

Despite the abundance of UGC in digital environments, effective analysis depends on the selection of suitable methods to extract meaningful insights for business performance improvement. Redek and Godnov (2024) argue that methodological approaches combining qualitative textual data with quantitative elements tend to yield more actionable results.

Methods such as content analysis (Bardin, 2016), sentiment analysis (Pang & Lee, 2008), topic modelling (Blei et al., 2003), thematic analysis (Braun & Clarke, 2006), and netnography (Kozinets, 2015) can be applied individually or in combination to maximize the value of information obtained from UGC (Platt & Mondo, 2019; Souza-Neto et al., 2022).

Unlike previous service-quality models, TOURQUAL was developed using both quantitative and qualitative techniques. Following a review of existing models, a pilot model comprising 35 indicators was tested using reviews collected from online platforms including Tripadvisor and Google Reviews (Mondo & Fiates, 2017). The data comprised 68,301 online comments from tourist attractions and Sammon's (1969) nonlinear mapping technique was employed to facilitate the identification of key terms. This resulted in the removal of 12 indicators that lacked semantic congruence and the addition of three new ones (Mondo & Fiates, 2017). Since it was first established, the framework has been continuously tested and refined. This has resulted in the development of a robust tool for identifying service priorities that can potentially guide managerial actions in organizations across the tourism and hospitality sector. The purpose of the present study is to apply the model to what may be its most challenging context yet: a group of tourism resorts in Brazil.

Despite the growing body of research on UGC and service quality in tourism and hospitality, the literature reveals a clear gap: no prior study has systematically combined large-scale UGC analysis with the TOURQUAL framework to examine the core components of guest satisfaction and dissatisfaction in resort settings. Existing UGC studies tend to focus on hotels, online communication strategies, or specific thematic aspects of resort experiences, while research on resort service quality remains largely grounded in traditional survey-based approaches or context-specific adaptations of SERVQUAL. Likewise, although TOURQUAL has been applied across a wide range of tourism attractions, it has not yet been employed to analyze unsolicited guest narratives in the resort context. This absence of integrated, framework-driven analysis indicates a lack of understanding of how guests naturally articulate quality perceptions in resorts. The present study addresses this gap by applying TOURQUAL to a national corpus of over 80,000 online reviews, offering a theoretically grounded, data-driven examination of the service-quality dimensions that structure the resort experience.

## **Method**

### ***Research design***

This study adopted a quantitative approach, recognizing that guests' perceptions of quality are inherently subjective—shaped by individual experiences—yet amenable to systematic analysis through the quantification of collective perceptions (Zelenka, et.al, 2021). A quantitative design was deemed appropriate to identify measurable relationships between guests' evaluations and various service attributes, such as customer service, infrastructure and amenities (Xiang et.al, 2017; Kar, et.al., 2021). The aim was to understand what elements are most frequently perceived and how they interact to influence the overall image of resorts.

The research was exploratory in nature, seeking to interpret observable phenomena without establishing causal relationships. Rather than aiming to predict or manipulate variables, the goal was to map how different quality factors shape consumers' perceptions of resorts, identifying recurring categories in online reviews. Resorts were chosen as context for the application of the techniques involved because of the considerable complexity, dynamics and growing importance of this area of the tourism industry. Indeed, the study has important practical implication in view of the potential for the analysis of UGC to uncover significant insights into resort guests' expectations and behaviors, which are core elements for understanding contemporary travel experiences (Mariani, 2020).

### Sample and data collection procedure

The dataset, which was non-probabilistic and based on convenience sampling, comprised online reviews posted between January 2023 and January 2024. Data collection was conducted in January 2024 through the TrustYou platform, a globally recognized reputation-management system. All 69 resorts affiliated with the Brazilian Association of Resorts (Associação Brasileira de Resorts, 2024) were included, and only reviews dated from January 2023 onward were retained. Of the 102,185 records retrieved, 82,327 contained textual content and therefore formed the corpus for analysis. The sample spans resorts across all five regions of Brazil and encompasses a diverse set of tourism products—including beach, countryside, thermal, and boutique resorts—ensuring a broad and heterogeneous representation of guest experiences (Figure 1). Although individual-level demographic data were not available, the volume of reviews provides substantial coverage of the resort segment, particularly given that the included properties represent the largest and most structured all-inclusive operations in the country. Considering the typical annual occupancy levels of these enterprises, the dataset likely captures the experiences of several hundred thousand guests over the one-year period.



**Figure 1.** Resorts in the sample (Source: Resorts Brasil, 2025)

The data consisted of guest reviews and ratings from Google, Tripadvisor and Booking.com—platforms selected for their popularity within Brazilian tourism and their large volumes of user-generated data. The reviews were analyzed with reference to the TOURQUAL indicators (Mondo, 2014; Mondo et al., 2024). TrustYou software was used to extract the data and generate a spreadsheet containing scores and review texts.

### Data analysis

The analysis was conducted using thematic analysis of elementary contexts, employing the T-LAB software and the R-Studio environment, specifically the *quantda* package (Benoit et al., 2018), which enabled lexical analysis and segmentation of the dataset into thematic clusters. Repetitive comments, texts in languages other than Portuguese, and those containing symbols, numbers or emojis were excluded; only comments written in Portuguese were retained. Given that the data were retrieved from the TrustYou platform and that the focus was on Brazilian resorts, the predominance of Portuguese-language reviews was expected. However, it is acknowledged that this linguistic filter may include both domestic Brazilian guests and Portuguese-speaking international visitors (from Portugal or from third countries where they may be expatriates). Consequently, the dataset does not exclusively represent either domestic

or international tourists, but rather a linguistically coherent group shaped by the operational language of both the resorts and the review platform.

The thematic analysis conducted in this study followed a qualitative and interpretive approach (Braun & Clarke, 2006). No topic-modelling algorithms (e.g., LDA, STM) were applied, and the analysis does not generate statistical outputs such as topic prevalence or embeddings. The Sammon nonlinear mapping technique was used solely as an exploratory visual aid to support theme identification, not as a confirmatory or computational topic-modelling procedure.”

It is important to emphasize that the focus of this study is not the language itself, but the identification of the main quality indicators embedded in UGC. The thematic and lexical analysis prioritizes the content of the experience described, irrespective of the guests’ nationality or origin.

During preprocessing, the corpus was tokenized: i.e., broken down into smaller textual units to allow for structured analysis. Punctuation, special characters, and stop words (commonly repeated but semantically uninformative terms) were removed in this stage (Benoit et al., 2018). The final dataset thus consisted of 60,335 usable comments. These were then analyzed for word frequency, representing the number of times each token appeared in the dataset. Terms were ranked from most to least frequent, allowing for an understanding of their distribution and relevance within the corpus. To further examine tourist evaluations, particularly those containing subjective attributes, the Sammon mapping method was employed (Sammon, 1969; Ghojogh, et.al, 2023). This dimensionality-reduction technique enables the visual representation of relationships between variables in high-dimensional datasets by preserving relative distances in a lower-dimensional space. By maintaining these proximity relationships, the technique facilitates the identification of clusters that reflect interrelations among different quality factors. Sammon mapping is particularly useful for large, unstructured data sources such as online reviews, where the complexity and variability of opinions complicate direct analysis. The analysis was conducted using T-LAB version 8.1. Although contemporary alternatives such as t-SNE (van der Maaten & Hinton, 2008; Marx, 2024) or principal components analysis (Jolliffe & Cadima, 2016) are widely used to perform this task, Sammon’s method offers greater stability in preserving local relationships and allows more control over the initial projection configuration, thus reducing the occurrence of artificial clusters that often appear with t-SNE (Wattenberg et al., 2016). In contrast, techniques such as latent Dirichlet allocation (Blei et al., 2003; Zimmermann et.al, 2023), although effective for uncovering latent topics, do not provide a direct visual representation of lexical co-occurrence or semantic proximity. Since the core aim of this study was to visually map comment patterns based on lexical similarity – rather than simply uncovering hidden topics – the Sammon method was deemed more suitable for capturing the surface-level semantic structure of the corpus and supporting the interpretation of perceived quality dimensions.

A similarity analysis was also performed using the chi-square test to determine whether the observed frequency of word occurrences significantly differed from what would be expected in a reference group. This test is particularly effective for highlighting terms that appear with significantly higher frequency in comments containing a specific focal term. Given the large volume of textual data, a probability variable was included to reflect the likelihood ratio of co-occurrence between high-frequency terms (Howell, 2013). Practically, for a given focal word, this variable demonstrates the relative likelihood that other terms will appear in the same comment compared to comments that do not include the focal word.





by studies showing that food and beverage services consistently emerge as among the most recalled and influential elements in Online Travel Reviews for resorts (Vogel et al., 2021). The literature further demonstrates that A&B operations play a decisive role in shaping overall satisfaction, highlighting the need for high performance in both product quality and service delivery (Kuhn et al., 2018). Vogel et al. (2021) found that restaurants and bars are among the most frequently mentioned elements in resort evaluations, with importance attributed to both the physical environment and service quality. Similarly, Pereira et al. (2021) confirmed that F&B services significantly influence satisfaction among guests at resorts in Santa Catarina, Brazil. The study also highlighted the relevance of accommodation and location, aligning with terms in this quadrant.

In the top-right quadrant, environmental terms such as “cozy” and “ambience” are evident. These align well with findings from Frochot and Kreziak (2008), who demonstrated the importance of environmental factors in shaping the image of ski resorts. Other studies highlight that environmental comfort—particularly thermal adequacy and ambience—has become a critical element of perceived quality, shaping guests' emotional and cognitive evaluations of service environments (Ale & Ayeni, 2019). In the Brazilian context, leisure and atmospheric elements have been shown to structure resort identity and competitiveness, reinforcing the centrality of ambient attributes in the guest experience (Barbosa & Isayama, 2014). These insights are also relevant to the Brazilian context. This quadrant also includes terms related to the human factor, such as “service” (the most prominent term), “attentive”, and “staff”, indicating that resort employees play a vital role in shaping quality perceptions. Guests commented on staff attentiveness, tone of voice, technical knowledge and responsiveness. These results are supported by Adhikari et al. (2023), who emphasized the value of intangible service elements such as hospitality. While resorts increasingly rely on technology for service optimization, human interaction remains a cornerstone of the guest experience, as evidenced by Putra et al. (2022). Responsiveness—a critical quality dimension—is characterized by staff member's willingness to assist guests quickly and kindly (Nneoma & Uwabor, 2021). The prominence of terms such as “excellent”, “staff”, and “attentive” in this quadrant reaffirms its critical importance in perceived service quality.

Similar conclusions appear in broader hospitality research, which highlights that environmental comfort, perceived atmospheric quality and the organisation of service settings significantly influence the holistic appraisal of resort experiences. Such environmental cues operate as both symbolic and functional elements that shape guests' emotional tone, perceived well-being and overall judgement of service quality (Han et al., 2023).

In the bottom-right quadrant, terms such as “recreation”, “entertainment”, “show”, and “leisure” reflect the vital role of leisure services in resorts (Barbosa & Isayama, 2014). Liu et al. (2016) observed that even in specialized resorts such as hot springs, alternative recreational activities rank highly in guest satisfaction. In the Brazilian context, “children's recreation” appears prominently, as shown by the frequent co-occurrence of “animation”, “team”, and “tio” (a common term for children's entertainers), reinforcing the resorts' strong family orientation.

Another valuable insight from the Sammon map is that natural attributes, such as proximity to the beach or weather conditions, appear less central in guest evaluations compared to artificial features like pools. Moraes and Helbig (2019) noted the relevance of natural and scenic elements in resort marketing, often presenting them as key competitive advantages. However, the present findings suggest that such attributes may not be as prominent in guests' actual reviews. Two possible explanations could account for this result: (a) many resorts in the sample are not located on the coast (35/69); and (b) most of the comments analyzed were written by Brazilian guests (94.5%), who may be less sensitive to beach-related features due to familiarity. For international tourists – especially those less accustomed to Brazilian beaches – coastal location might hold greater relevance and positively affect their perceptions. This

reduced salience of natural attributes aligns with the argument that experiential and constructed elements often outweigh environmental features in shaping perceived quality, as the symbolic and functional components of the service environment exert a stronger influence on evaluations (Froho t & Kreziak, 2008).

Additionally, the near absence of references to weather conditions may indicate that guests do not consider climate as a decisive factor in their experience—or that the climate in resort regions is consistently favorable and thus unremarkable. Either way, this omission reinforces the notion that natural attributes are not central in evaluations. Meanwhile, the dominance of manageable factors – such as technical service quality, infrastructure, F&B, ambiance and human elements – may be viewed as a welcome finding by resort managers. These are aspects that are much more within their control, and they can be continuously monitored and improved.

Based on keyword aggregation, Table 1 shows that the most frequent indicators were customer service (49,612 mentions), food and beverage (41,411), infrastructure (35,314), beach and pool services (21,053 mentions), and experience (19,388 mentions). These were selected for deeper statistical analysis using the chi-squared test ( $\chi^2$ ), all of which produced highly significant results ( $p < 0.001$ ).

**Table 1.** TOURQUAL Indicators and Related Terms (Source: Research data)

TOURQUAL Indicator	Key Term	Frequen cy	Total	TOURQUA L Indicator	Key Term	Frequen cy	Total	
Customer Service	service	18,961	49,612	Recreation	activities	4,484	15,407	
	team	11,158			recreation	4,378		
	staff	9,429			leisure	2,785		
	service (again)	4,559			entertainment	1,355		
	guest	2,562			children	1,082		
	attention	2,176			infrastructure	653		
	check-in	590			sports	419		
	knowledge	83			night-time	251		
	appearance	50		Cleanliness	cleanliness	3,353	5,769	
	trust	44			bathroom	2,133		
Food & Beverage	food	11,802	41,411		Accessibility	hygiene		237
	drinks	5,342		linens		46		
	cocktails	5,193		Safety		location	2,232	4,602
	coffee	5,097				access	1,163	
	quality	5,049	arrival			508		
	variety	3,215	parking			412		
	dinner	2,610	website			166		
	lunch	1,554	ease			121		
	menu	1,088	Internal Signage		area	1,101	2,772	
	food (again)	461			safety	941		
Infrastructure	restaurant	8,672		35,314	entrance	574		
	pool	7,768			camera	68		
	rooms	6,211			vehicle	61		
	reception	4,888	protection		27			
	bar	3,767	2,350					
facilities	1,198	location		2,232				
					signage	75		

	area	1,101			identification	43	
	maintenance	897		<b>Comfort</b>	comfort	1,133	
	infrastructure	653			temperature	402	
	sauna	159			acoustics	159	
<b>Beach/Pool Services</b>	beach	5,277	21,053		well-being	36	1,730
	drinks	5,342			reservation	740	
	service	4,559			website	166	
	entertainment	1,355			phone	135	
	music	1,089		<b>Ease of Purchase</b>	email	89	1,228
	children	1,082			purchase	83	
	fun	990			cancellation	15	
	chair	704					
	food	461		<b>Opening Hours</b>	opening hours	1,020	1,020
	equipment	126		<b>Technology</b>	information	512	961
	umbrella	68			wifi	249	
					website	166	
					technology	19	
<b>Experience</b>	experience	8,409	19,388		kiosks	13	
	activities	4,484			automation	2	
	leisure	2,785					
	entertainment	1,355					
	fun	990		<b>Cost-Benefit</b>	cost	572	613
	lobby	440			cost-benefit	37	
					minibar	4	
	decoration	374		<b>Waiting for Service</b>	waiting	212	212
	transport	265		<b>Carrying Capacity</b>	capacity	89	91
	gardens	261			load	2	
	aesthetics	14					
	learning	11					

### Customer Service

Comments mentioning “service” were highly likely to include terms associated with service excellence (Table 2). The word “differentiated”, for instance, was 4.5 times more likely to appear in reviews that included “service.” Similarly, “exceptional” and “excellence” showed strong associations.

**Table 2** – Results of statistical analysis – customer service (Source: Research data)

Terms in Portuguese (translated terms)	$\chi^2$	P-value	Likelihood ratio	Target group	Reference group
excelente (excellent)	954.1904	0.001***	0.7413806	6287	7859
restaurante (restaurant)	693.6764	0.001***	0.8066149	3943	4711
otimo (great)	654.0242	0.001***	0.8028872	3750	4492
impecavel (impeccable)	330.5160	0.001***	0.9932809	1306	1371

diferenciado (distinctive/outstanding)	254.756 4	0.001 ***	2.1698936	295	137
excepcional (exceptional)	250.343 4	0.001 ***	1.2664208	655	569
excelencia (excellence)	226.419 6	0.001 ***	1.5032388	449	331
brasa (grill/barbecue)	213.297 4	0.001 ***	1.5333813	410	296
Luciana (employee name)	194.736 2	0.001 ***	1.7889921	296	179
bar (bar)	163.201 9	0.001 ***	0.6044217	1578	2169

### ***Food and Beverage***

Two primary terms were analyzed: “food” and “drinks.” For “food”, terms such as “delicious”, “tasty”, “flavorful”, and “abundant” were common, indicating a strong association with variety and quality. However, the term “bad” also showed significant co-occurrence, suggesting that issues with food quality can negatively impact overall satisfaction (Table 3). Two primary terms were analyzed: “food” and “drinks.” For “food”, terms such as “delicious”, “tasty”, “flavorful”, and “abundant” frequently appeared, revealing a strong association with perceptions of variety and quality—attributes commonly promoted in the all-inclusive resort experience. The recurrence of these positive descriptors reinforces the importance of food as a central element in guest satisfaction. However, the term “bad” also showed significant co-occurrence with “food,” suggesting that negative experiences related to this aspect *can* negatively impact overall satisfaction (Table 3). It is important to clarify that the purpose of this analysis is not to qualitatively assess the food and beverage services in depth, but to identify that this dimension stands out as one of the most prominent and frequently mentioned in the guest reviews. The lexical salience of food-related terms—whether positive or negative—indicates the centrality of this service attribute in shaping guests’ perceptions of resort quality.

This concentration of emotionally loaded descriptors aligns with evidence that consumer experiences are shaped by the interplay of affective responses and cognitive appraisals. Memorable travel experiences emerge when emotional immersion, environmental cues and social interaction jointly support meaning-making during consumption (Kim, 2021). Thus, the prevalence of emotional terms in UGC reflects not only satisfaction, but a deeper experiential encoding aligned with contemporary experience-consumption frameworks.

These findings are consistent with research showing that guest behaviour, food expectations and the inherent dynamics of all-inclusive programmes significantly shape how visitors evaluate food-related services. In all-inclusive resorts, the abundance and constant availability of food influence not only consumption patterns but also guests’ evaluative criteria, intensifying expectations regarding taste, diversity and presentation (Abdelhady et al., 2021). This behavioural dimension helps explain why food and beverage terms appear so prominently in UGC: guests perceive F&B not merely as a service, but as a defining experiential component of the resort stay.

**Table 3.** Results of statistical analysis – food and beverage (Source: Research data)

<b>Terms in Portuguese (translated terms)</b>	<b><math>\chi^2</math></b>	<b>P-value</b>	<b>Likelihood ratio</b>	<b>Target group</b>	<b>Referenc e group</b>
bebida (beverage)	1386.6770	0.001 ***	3.1248241	957	257

deliciosa (delicious)	853.6251	0.001 ***	2.9950142	616	181
saborosa (flavorful)	661.4850	0.001 ***	3.5901298	401	78
gostosa (tasty)	592.8916	0.001 ***	3.2390726	395	98
variada (varied/diverse)	347.1119	0.001 ***	2.3859532	328	147
praia (beach)	284.9910	0.001 ***	0.6774462	2126	3114
variedade (variety)	252.4381	0.001 ***	0.9035669	1118	1400
ruim (bad)	218.8606	0.001 ***	1.1506691	635	670
bebidas (beverage)	188.5117	0.001 ***	0.6252582	1633	2480
farta (abundant/plentiful)	187.8499	0.001 ***	2.4021030	176	78

In analyzing “beverage”, terms such as “alcoholic”, “cold”, “snacks”, “brands”, and “all-inclusive” frequently co-occurred (Table 4). Notably, “alcoholic” was 7.2 times more likely to appear in comments mentioning “drinks”, highlighting the relevance of beverage options in shaping guest perceptions, especially in all-inclusive resort contexts. This aligns with the cultural and operational characteristics of all-inclusive resorts, which are widely known for offering unrestricted access to alcoholic beverages. These establishments often cater to a segment of travelers whose motivations include not only rest and leisure but also socializing, entertainment, and the consumption of drinks as part of the overall holiday experience. This is corroborated by evidence showing that bar services frequently emerge as the strongest predictors of overall satisfaction in resort stays, surpassing even core meal services in frequency and impact within guest reviews (Vogel et al., 2020; Vogel et al., 2021). Beverages play a critical role in enhancing the overall tourism experience, particularly within the context of all-inclusive resorts, by facilitating entertainment, relaxation, and social interaction: key dimensions of guest engagement and satisfaction (Forlani et al., 2022). Furthermore, the quality, diversity, and distinctiveness of beverage offerings, including regional wines and artisanal drinks, contribute significantly to the perceived value of the stay, thereby positively influencing guest satisfaction and the overall experience (Dixit et al., 2022).

**Table 4.** Results of statistical analysis – beverage (Source: Research data)

<b>Terms in Portuguese (translated terms)</b>	<b><math>\chi^2</math></b>	<b>P-value</b>	<b>Likelihood ratio</b>	<b>Target group</b>	<b>Reference group</b>
comidas (food)	1906.2308	0.001 ***	2.2345873	1191	1439
geladas (cold)	1044.1555	0.001 ***	4.6774055	243	54
alcoolicas (alcoholic)	971.9360	0.001 ***	7.1919787	180	7
petiscos (snacks)	501.8933	0.001 ***	2.3392090	291	327

praia (beach)	461.3707	0.001 ***	0.9618965	1337	3903
inclusive (inclusive)	370.1182	0.001 ***	1.2488445	657	1572
all (all)	365.1016	0.001 ***	1.4774232	475	970
qualidade (quality)	310.9350	0.001 ***	0.8316835	1190	3802
variedade (variety)	297.6126	0.001 ***	1.0874496	685	1833
marcas (brands)	279.8119	0.001 ***	3.2299465	99	60

### ***Infrastructure***

As the term “infrastructure” itself was rare, the term “facilities” being used as a proxy due to its conceptual alignment and higher frequency (Table 5). Words such as “modern”, “old”, “well-maintained”, “luxurious”, and “stunning” showed strong co-occurrence, reflecting how guests evaluate physical structures. The luxury hotel brand “Fasano” also appeared in close association, suggesting brand recognition linked to infrastructure quality.

**Table 5.** Results of statistical analysis – infrastructure (Source: Research data)

<b>Terms in Portuguese (translated terms)</b>	<b><math>\chi^2</math></b>	<b>P-value</b>	<b>Likelihood ratio</b>	<b>Target group</b>	<b>Reference group</b>
modernas (moderns)	676.088 8	0.001 ***	6.310112	36	12
antigas (old/outdated)	643.522 8	0.001 ***	5.024710	48	39
conservadas (conserved)	434.487 4	0.001 ***	5.672682	27	14
classe (class)	274.058 1	0.001 ***	4.225579	29	41
luxuosas (luxurious)	270.347 2	0.001 ***	5.140187	20	15
fasano (hotel brand fasano)	262.183 9	0.001 ***	3.212080	48	137
deslumbrantes (stunning)	253.343 0	0.001 ***	4.140187	28	42
mundial (mondial)	232.326 7	0.001 ***	5.947542	14	6
cuidadas (well-cared)	219.776 6	0.001 ***	3.343721	38	99
verdadeiramente (truthfully)	216.028 5	0.001 ***	3.403222	36	90

### ***Beach and Pool Services***

Terms related to “beach” included “chairs”, “sun loungers”, “sea”, and “snacks”, indicating that guests evaluate both the physical environment and service offerings in beach areas (Table 6). Terms related to “beach” included “chairs”, “sun loungers”, “sea”, “snacks”, and “bar

service”, suggesting that guests evaluate not only the natural setting but also the amenities and service infrastructure available in beach and pool areas (Table 6). These terms reflect expectations for comfort, accessibility, and convenience: core elements of the beach and pool experience in resort environments. Although not all resorts in the sample are located on the coast, the presence of swimming pools and, in many cases, artificial beaches ensures that beach-like services are consistently offered. The recurrence of these terms across reviews reinforces the importance of this service dimension as a key component of guest experiences in all-inclusive resorts.

**Table 6.** Results of statistical analysis – beach (Source: Research data)

<b>Terms in Portuguese (translated terms)</b>	<b><math>\chi^2</math></b>	<b>P-value</b>	<b>Likelihood ratio</b>	<b>Target group</b>	<b>Reference group</b>
cadeiras (chairs)	704.859 6	0.001 ***	2.9159519	324	201
frente (front)	662.363 4	0.001 ***	2.3489420	420	386
mar (sea/ocean)	581.503 7	0.001 ***	1.6126562	693	1061
areia (sand)	457.070 6	0.001 ***	2.5135926	261	214
petiscos (snacks)	387.210 1	0.001 ***	2.0963343	295	323
piscina (pool)	378.012 0	0.001 ***	0.7172870	2011	5727
bar (bar)	361.580 7	0.001 ***	0.9640101	1102	2645
resort (resort)	308.683 4	0.001 ***	0.6002994	2308	7128
espreguicadeiras (sun loungers)	257.285 1	0.001 ***	3.1865116	105	54
forte (strong)	246.147 2	0.001 ***	1.8151374	239	318

For “pool”, common co-occurrences included “heated”, “covered”, “area”, and “bar”. Notably, the term “heated” was almost 31 times more likely to appear in comments mentioning “pool”, underlining its importance as a comfort feature (Table 7). This emphasis on heated pools can be partly explained by the geographical distribution of many resorts in Brazil, which are located outside the Northeastern region. In these areas, where all four seasons are more distinctly defined, maintaining water temperature becomes essential to ensure guest comfort throughout the year. Additionally, a considerable number of resorts – approximately 15 in the sample – use thermal water resources, which may have further influenced this lexical prominence. The frequent mention of “heated” pools suggests that water temperature is a relevant comfort factor for guests, especially in non-tropical regions.

Moreover, research on all-inclusive resort operations demonstrates that the continuous availability of services and facilities amplifies guest expectations regarding convenience, accessibility and comfort. These expectations shape how elements such as beach services, pools or infrastructure are evaluated in online reviews, as guests tend to assess not only quality but also abundance and reliability of access to core amenities (Abdelhady et al., 2021).



**Table 7.** Results of statistical analysis – pool (Source: Research data)

<b>Terms in Portuguese (translated terms)</b>	<b><math>\chi^2</math></b>	<b>P-value</b>	<b>Likelihood ratio</b>	<b>Target group</b>	<b>Reference group</b>
aquecida (heated)	1306.054 7	0.001 ***	4.940068	498	50
bar (bar)	945.2143	0.001 ***	1.396285	1726	2021
area (area)	682.3638	0.001 ***	1.467771	1146	1277
agua (water)	653.0762	0.001 ***	1.435399	1139	1298
praia (beach)	637.5700	0.001 ***	1.006765	2068	3172
cadeiras (chairs)	335.2589	0.001 ***	2.140498	309	216
coberta (indoor/covered)	256.5053	0.001 ***	3.262523	137	44
petiscos (snacks)	245.8942	0.001 ***	1.717333	319	299
borda (edge)	242.5815	0.001 ***	4.360888	100	15
fica (stay)	241.1396	0.001 ***	1.070076	703	1032

**Experience**

Terms such as “memorable”, “positive”, “unique”, “incredible”, and “unforgettable” frequently co-occurred with “experience”. The word “gastronomic” appeared nearly 10 times more often in these reviews, emphasizing the role of cuisine in creating impactful and memorable stays (Table 8).

**Table 8.** Results of statistical analysis – experience (Source: Research data)

<b>Terms in Portuguese (translated terms)</b>	<b><math>\chi^2</math></b>	<b>P-value</b>	<b>Likelihood ratio</b>	<b>Target group</b>	<b>Reference group</b>
incrível (incredible)	897.825 1	0.001 ***	1.1744500	2030	3439
única (unique)	506.340 8	0.001 ***	1.9090161	496	505
inesquecível (unforgettable)	391.265 2	0.001 ***	2.2341485	299	243
gastronômica (gastronomic)	272.804 8	0.001 ***	3.2925114	123	48
verdadeiramente (truthfully)	249.547 0	0.001 ***	3.7423143	98	28
memorável (memorable)	242.651 8	0.001 ***	3.6768912	97	29
maravilhosa (wonderful)	234.567 1	0.001 ***	0.6647091	1529	3688

positiva (positive)	213.405 7	0.001 ***	3.3602652	94	35
proporcionar (provide)	114.189 7	0.001 ***	2.0739358	98	89
fantastica (fantastic)	103.661 6	0.001 ***	1.1358720	250	435

Overall, the three most frequently mentioned quality indicators across the corpus were customer service, F&B, and infrastructure – together accounting for over 120,000 references. This notable volume of mentions reinforces the central role these dimensions play in shaping the guest experience in Brazilian all-inclusive resorts. Their recurrence in unsolicited online reviews indicates not only their operational presence but also their salience in guests' perceptions of quality.

## **Discussion, Implications, Limitation and future research**

### ***Discussion***

This study aimed to identify the components of perceived service quality in Brazilian resorts based on UGC and interpreted through the indicators proposed by the TOURQUAL model. Drawing on 82,327 textual reviews, the study mapped the most prominent terms related to guest experience and associated them with established quality dimensions. By combining data-mining techniques and thematic analysis, the findings revealed that customer service, food and beverage, and infrastructure were the most frequently mentioned elements by guests. From a theoretical perspective, the results reinforce long-standing service-quality principles presented by Grönroos (1984), Parasuraman et al. (1985) and Oliver (1997), which highlight the centrality of perceived performance, human interaction, and experiential cues in shaping satisfaction and behavioural intentions. The study also advances TOURQUAL scholarship (Mondo & Fiates, 2017; Mondo et al., 2024) by demonstrating that its indicators emerge naturally from unsolicited guest discourse, suggesting that the model captures structurally stable dimensions of service quality in real-world digital environments.

### ***Theoretical implications***

This study offers three main contributions: (1) a theoretical contribution by demonstrating how TOURQUAL dimensions naturally emerge from large-scale UGC in the resort context; (2) a methodological contribution by integrating lexical co-occurrence mapping with qualitative thematic interpretation; and (3) a practical contribution by identifying the service-quality indicators most salient to guests in real-world online evaluations, thereby guiding strategic decision-making in resorts. By showing that spontaneous online narratives align with TOURQUAL categories—such as ambience, human factors, technical quality, safety, accessibility and experience—the study provides preliminary theoretical evidence that these dimensions reflect underlying mechanisms through which guests evaluate resort services. This convergence between lexical expressions and the TOURQUAL framework expands prior research using the model in attractions, museums, restaurants, events and accommodation (Mondo et al., 2016; Platt & Mondo, 2019; Mondo et al., 2022; Souza-Neto et al., 2022). It also dialogues with studies demonstrating the importance of tangible and intangible attributes in resort evaluations, including F&B (Vogel et al., 2021; Pereira et al., 2021), ambience (Frochot & Kreziak, 2008), recreation (Barbosa & Isayama, 2014) and technical service factors (Nneoma & Uwabor, 2021; Adhikari et al., 2023). In synthesising these perspectives, the present study expands the generalizability of service-quality theory to large-scale UGC contexts, illustrating how guests' perceptions articulated in digital platforms reflect well-established theoretical mechanisms.

### ***Practical implications***

From a managerial standpoint, the findings offer actionable insights into which quality attributes most strongly influence guest perception. The prominence of customer service aligns with evidence that human interaction, responsiveness and attentiveness are central to guest satisfaction (Heinonen & Sthapit, 2024; Nneoma & Uwabor, 2021; Putra et al., 2022; Sthapit & Björk, 2019). Similarly, the emphasis on F&B echoes the importance of food-related experiences in shaping the emotional and cognitive components of hospitality evaluations (Vogel et al., 2021; Dixit et al., 2022; Forlani et al., 2022). The relevance of infrastructure and ambience resonates with prior work showing that environmental qualities affect service image and competitiveness (Frochot & Kreziak, 2008; Ale & Ayeni, 2019; Moraes & Helbig, 2019). These findings reinforce that service quality in resorts is co-constructed through the integration of physical, human and experiential cues, consistent with contemporary perspectives on tourism experiences (Souza, 2013; Stanton et al., 2019). Although UGC provides valuable visibility into recurring service strengths and shortcomings, online reviews represent only one layer of service-quality evaluation. As highlighted in previous studies using digital data in tourism (Oliveira et al., 2024; Silva et al., 2021; Sthapit et al., 2024; Xiang et al., 2017; Guo et al., 2021), combining UGC with structured surveys or qualitative interviews can produce a fuller and more nuanced understanding of guest perceptions.

### ***Limitation and future research***

This study has several limitations. The sample included only resorts affiliated with Resorts Brasil, and only Portuguese-language reviews were analyzed, which narrows the generalizability of the findings. While linguistic homogeneity enhances comparability, it excludes perceptions of non-Portuguese-speaking guests, whose expectations may differ (Silva et al., 2019). The absence of socio-demographic metadata also limited segmentation analyses—an issue often noted in UGC research (Ukpabi & Karjaluoto, 2018; Oliveira et al., 2024). Additionally, the cross-sectional design prevented the exploration of seasonal variation, which is particularly relevant in resort contexts. Future research should further test whether TOURQUAL dimensions consistently emerge from UGC across different cultural, linguistic and operational contexts, extending prior work that has applied the model in varied tourism environments (Mondo et al., 2016; Leal & Maracajá, 2021; Tavares et al., 2022). Comparative studies involving resorts in different countries, multilingual datasets or distinct resort typologies could help examine the extent to which quality dimensions are universal or context dependent. Longitudinal approaches could also track how lexical indicators of service quality evolve over time in response to operational adjustments, marketing strategies or shifts in guest expectations. Moreover, combining UGC analysis with structured TOURQUAL surveys would allow researchers to examine convergence or divergence between unsolicited and elicited evaluations, offering deeper theoretical insights into the mechanisms through which guests construct and express quality perceptions in tourism and hospitality settings.

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