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EXPLORING THE IMPACT OF TANGIBILITY, RELIABILITY, AND RESPONSIVENESS ON CUSTOMER SATISFACTION IN JAIPUR'S HERITAGE HOTELS: A STRUCTURAL EQUATION MODELING APPROACH

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Abstract

This research, titled "Exploring the Impact of Tangibility, Reliability, and Responsiveness on Customer Satisfaction in Jaipur's Heritage Hotels: A Structural Equation Modeling Approach," adopts a descriptive and exploratory design to investigate the relationships between service quality dimensions and customer satisfaction in Jaipur's Heritage Hotels. Using a sample of 400 participants, visitors to 10 Heritage hotels, data were collected through a structured questionnaire, and Structural Equation Models were employed for analysis. Findings reveal that while reliability showed a weak association, responsiveness and tangibility emerged as pivotal drivers of customer satisfaction, aligning with existing studies in the hospitality sector. Implications for businesses emphasize the strategic importance of responsiveness and investment in tangible elements, while future research avenues include comparative analyses across industries, exploring cultural influences, and integrating emerging technologies to enhance our understanding of service quality and customer satisfaction in the dynamic hospitality landscape.

Keywords - Tangibility, Reliability, Responsiveness, Customer Satisfaction, Heritage Hotels

INTRODUCTION

The estimated market size of the Hospitality Industry in India is USD 24.61 billion in 2024 and is projected to reach USD 31.01 billion by 2029, with a compound annual growth rate (CAGR) of 4.73% during the forecast period (2024-2029).

Over the past years, the Indian hospitality industry has experienced moderate growth, and its potential for future expansion is considerable. The nation's rich cultural diversity has been a magnet for tourists worldwide, establishing India as a prominent destination for spiritual tourism. Notably, India has climbed from the 65th position in 2013 to the 34th position in 2019 in the World Economic Forum's travel and tourism competitiveness index. The consistent growth of the middle class, augmented disposable income, and a rising interest among millennials to explore their homeland contribute significantly to the profitability of the domestic travel industry. Innovations by ventures like Airbnb and Oyo rooms, providing cost-effective accommodations with flexible check-in and check-out options, have reshaped the global hospitality landscape, attracting an increasing number of travelers.

The hospitality and tourism sector, contributing 7.5% to the GDP, has been experiencing robust growth. India's presence in the top 100 clubs on Ease of Doing Business (EoDB) and its first-place ranking globally in greenfield Foreign Direct Investment (FDI) underscore its favorable business environment. In a bid to bolster cruise tourism, the Government of India has identified Chennai, Goa, Kochi, Mangalore, and Mumbai ports to develop as cruise tourism hubs, equipped with hospitality, retail, shopping, and restaurant facilities.

Heritage hotels, with their rich historical and cultural significance, play a pivotal role in the hospitality industry, attracting visitors seeking a unique and authentic experience. In the vibrant city of Jaipur, renowned

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for its architectural marvels and historical treasures, these heritage hotels not only serve as accommodation but also as custodians of the region's rich heritage. Understanding the factors that contribute to customer satisfaction within these establishments is crucial for both hotel management and the broader tourism industry.

In the ever-evolving landscape of hospitality, customer satisfaction stands as a key determinant of success for heritage hotels. The success of these establishments is not solely contingent on their historical appeal; rather, it extends to the quality of service provided. This study delves into three critical dimensions—tangibility, reliability, and responsiveness—to evaluate their impact on customer satisfaction within the unique context of heritage hotels in Jaipur.

Tangibility represents the physical aspects of the heritage hotel experience, encompassing the architecture, interior design, and overall ambiance. Guests form impressions based on the tangible elements that contribute to the unique character of these establishments. Assessing the impact of tangibility on customer satisfaction becomes imperative to comprehend how the physical environment influences the overall guest experience. The reliability of services in heritage hotels is a fundamental aspect that directly influences guest satisfaction. Visitors expect consistency and dependability in the delivery of services, ranging from room amenities to staff interactions. Evaluating the impact of reliability on customer satisfaction will provide insights into the significance of dependable services in maintaining and enhancing the reputation of heritage hotels.

Guests' expectations for prompt and attentive services are heightened in the context of heritage hotels. Assessing the impact of responsiveness on customer satisfaction entails examining the efficiency with which the hotel staff addresses guest needs and concerns. Understanding this dimension is vital for enhancing the overall guest experience and ensuring the continued success of heritage hotels.

As the hospitality industry continues to evolve, this research seeks to contribute valuable insights into the specific elements that shape customer satisfaction within Jaipur's Heritage Hotels. By focusing on tangibility, reliability, and responsiveness, this study aims to provide actionable recommendations for hotel management to enhance the overall guest experience, thereby ensuring the sustained appeal and success of these unique establishments.

REVIEW OF LITERATURE

Bandara and Dahanayake (2020) contributed to the literature by examining the impact of food and beverage service quality on customer satisfaction, with a specific emphasis on tangible aspects like employee appearance. Their in-depth study, involving 150 foreign tourists, shed light on the nuanced factors influencing service quality in the culinary domain, providing valuable insights for practitioners and policymakers.

Shahabudin (2018) endeavored to identify the factors influencing service quality and their impact on consumer satisfaction in the hospitality industry. Through a self-regulated questionnaire and face-to-face interviews at Emerald Putri Hotel, the study found diverse effects of different factors on consumer satisfaction, with empathy having the highest impact, followed by responsiveness. Tangibility, however, did not significantly influence consumer satisfaction. Saneva and Chortoseva (2018) delved into the multidimensional nature of service quality in Macedonian restaurants. Utilizing SERVQUAL, DINESERV, and CFFRSERV, the study employed a questionnaire with 29 traits distributed across six dimensions. The research identified specific areas for improvement to bridge the existing gap in overall service quality, especially in the assurance dimension. Kumar and Aarti (2017) explored the disparities between expected and perceived service quality and investigated brand preferences among fast-food restaurant customers. Utilizing an empirical research approach and structured convenience sampling, the study contributed to the advancement of the Service Excellence approach, emphasizing customer necessities and performance improvement in the restaurant setting.

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Hodovic, Arslanagic-Kalajdzic, and Banda (2015) tackled the challenging issue of quality judgment in the hotel and tourism industry using the SERVQUAL model. Based on empirical research in Bosnia and Herzegovina, the study indicated a positive guest response to high-quality services and highlighted the impact of SERVQUAL on customer satisfaction, emphasizing the importance of improving areas such as tangibility and empathy. Minh et al. (2015) investigated the connection between customer satisfaction and service quality in Vietnamese restaurants using the SERVQUAL model. With primary sources, the study emphasized the significant role of service quality, particularly reliability, responsiveness, and assurance, in satisfying customers in Vietnamese hotel services.

Siddique, Akhter, and Al Masum (2013) delved into the service quality from the consumer perspective in five-star hotels based on the SERVQUAL Model in Bangladesh. The study revealed the highest gap in the reliability component and the lowest gap in the tangibility component, suggesting a need for heightened attention to providing customized services and focusing on specific SERVQUAL components. Markovic and Jankvic (2013) conducted a study in Croatia to explore the relationship between customer satisfaction and service quality. The study highlighted the significance of employee competence, interpersonal skills, courtesy, and the ability to deliver promised services in influencing customer satisfaction.

Turkson (2012) aimed to understand the influence of quality assurance, customer opinions, complaints, and hotel room factors on service quality in the hotel industry. The study emphasized the importance of quality assurance in the hospitality industry for economic development. Shikh and Khan (2011) conducted a study to probe into the impact of service quality on Pakistani consumers in the hotel sector. Focusing on the tangibles and responsiveness components of service quality, the study revealed that tangibles and responsiveness significantly influence the satisfaction of restaurant clients in Pakistan.

Malik, Naeem, and Nasir (2011) empirically investigated how customers' perceptions of service quality influence brand loyalty in hotels. The study revealed that customers' perceptions of hotel brand dimensions, such as "tangibles," "reliability," and "empathy," contribute significantly to building brand loyalty, with tangibles exhibiting a stronger impact compared to reliability and empathy.

Yilmaz (2009) assessed hotel service quality from the customer's perspective in Nevsehir, targeting three, four, and five-star hotels. The study identified four dimensions—tangibles, assurance-responsiveness, empathy, and reliability—suggesting the need for hoteliers to enhance physical infrastructure, including employee appearance. Kotler (2006) contrasted physical products with services, noting that tangible evidence becomes crucial for services. Quality, defined as the totality of features and characteristics impacting customer needs, fosters customer loyalty and satisfaction, influencing repeat business. Ali and Lakha (2002) identified issues and recommended steps to address challenges in measuring customer satisfaction in higher education. Service quality, defined by dimensions like reliability, responsiveness, assurance, empathy, and tangibility, is distinct from satisfaction, which encompasses perceptions of service quality, product quality, price, and situational and personal factors.

Thunderbird (1997) conducted an examination of the relationship between customer participation and satisfaction. The study advocated treating customer participation as a variable in the customer's value equation, creating implications in marketing, human resources, and operations. Pariseau and McDaniel (1997) discussed Total Quality Management (TQM) in business schools, highlighting its role in improving quality and reducing costs. They emphasized the need for data assessment to gauge student and faculty satisfaction, utilizing SERVQUAL to evaluate dimensions such as assurance, reliability, empathy, responsiveness, and tangibles.

Johnston (1995) demonstrated that certain determinants of quality predominate over others, with attentiveness, responsiveness, care, and friendliness emerging as crucial sources of satisfaction for personal bank customers. The study confirmed similar results to Johnston and Silvestro's (1990) findings.

H_{01}: There is no significant impact of the Tangibility factor on customer satisfaction in heritage hotels.

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H_{02}: There is no significant impact of the Reliability factor on customer satisfaction in heritage hotels.
H_{03}: There is no significant impact of the Responsiveness factor on customer satisfaction in heritage hotels.

RESEARCH OBJECTIVES

I To assess the impact of the Tangibility on customer satisfaction in heritage hotels.
II To assess the impact of the reliability on customer satisfaction in heritage hotels.
III To assess the impact of responsiveness on customer satisfaction in heritage hotels.

METHODOLOGY

This research adopts a descriptive and exploratory research design to examining the characteristics of a phenomenon and determining the relationship between variables. In this case, the study aims to describe and understand the impact of tangibility, reliability, and responsiveness on customer satisfaction in Jaipur's Heritage Hotels.

A total sample size of 400 participants was selected for this study. The participants were visitors to the 10 Heritage hotels in Jaipur between July 2021 and December 2021. The sample was selected using a systematic random sampling technique, ensuring representation from diverse demographics. Data were collected using a structured questionnaire containing close-ended questions. The questions were designed to assess the perceptions of visitors regarding tangibility, reliability, responsiveness, and overall satisfaction with their heritage hotel experience. The survey was administered in-person to ensure a high response rate and to clarify any potential doubts respondents might have.

Data was analyzed using Structural Equation Models (regression analysis) to identify the impact of tangibility, reliability, and responsiveness on customer satisfaction. The relationships between variables were explored, and statistical significance was determined.

ANALYSIS AND RESULTS

Table 1 - Models Info	
Estimation Method	ML
Optimization Method	NLMINB
Number of observations	400
Free parameters	69
Standard errors	Standard
Scaled test	None
Converged	TRUE
Iterations	105
Model	Tangibility=~TANG1+TANG2+TANG3+TANG4+TANG5
	Reliability =~RELIA1+RELIA2+RELIA3+RELIA4+RELIA5
	Responsiveness=~RESPO1+RESPO2+RESPO3+RESPO4+RESPO5
	Satisfaction=~SAT1+SAT2+SAT3+SAT4+SAT5+SAT6
	Satisfaction~Reliability +Responsiveness+Tangibility

In the realm of statistical analysis, the use of sophisticated models to understand and predict complex relationships is paramount. In the given scenario, a model has been constructed employing the Maximum Likelihood (ML) estimation method and the NLMINB optimization method, indicative of a meticulous

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approach to parameter estimation. This essay aims to elucidate the key components of the model, its structure, and its potential applications.

The foundation of the model is built upon 400 observations, representing a substantial dataset for analysis. The choice of ML as the estimation method is noteworthy. Maximum Likelihood estimation is a statistical technique used to estimate the parameters of a model by maximizing the likelihood function. This method is particularly useful when dealing with latent constructs and their indicators, as it provides a robust framework for parameter estimation.

The NLMINB optimization method further enhances the model's sophistication. Non-linear optimization methods are employed to iteratively refine parameter estimates, ensuring that the model captures the intricate relationships within the data accurately. This choice reflects a commitment to precision and a recognition of the potentially non-linear nature of the underlying relationships. The model itself is structured as a Structural Equation Model (SEM), a widely utilized approach in statistics and social sciences. It encompasses four latent constructs: Tangibility, Reliability, Responsiveness, and Satisfaction. Each construct is associated with a set of indicators, representing observable variables.

The Tangibility model predicts Tangibility based on five indicators (TANG1, TANG2, TANG3, TANG4, TANG5). Similarly, the Reliability and Responsiveness models predict their respective constructs using five indicators each (RELIA1-5 and RESPO1-5). The Satisfaction model, a pivotal component, incorporates six indicators (SAT1-6) to measure overall satisfaction. Beyond individual predictions, the model also explores the interplay between the constructs. Notably, Satisfaction is posited to be influenced by Reliability, Responsiveness, and Tangibility. This interconnectedness reflects a holistic approach to understanding customer satisfaction, acknowledging the multifaceted nature of the customer experience.

Table 2 - Model tests

Label	X^2	df	p
User Model	2275	183	< .001
Baseline Model	6548	210	< .001

In the realm of statistical modeling, assessing the fit of a model to observed data is a crucial step in understanding the underlying phenomena. In this analysis, two models have undergone rigorous testing – the User Model and the Baseline Model. The results, expressed through the chi-square statistic (X^2), degrees of freedom (df), and p-values, offer profound insights into the efficacy of these models.

The User Model, characterized by a chi-square statistic of 2275 with 183 degrees of freedom, stands out as a noteworthy contender. The associated p-value, being less than 0.001, signifies a significant improvement over a baseline representation. This suggests that the User Model, with its increased complexity, provides a more accurate fit to the observed data. The lower chi-square value underscores its ability to capture the nuances of the phenomena under consideration.

On the other hand, the Baseline Model, though less intricate, undergoes scrutiny with a chi-square statistic of 6548 and 210 degrees of freedom. The associated p-value, again less than 0.001, indicates statistical significance. However, the higher chi-square value compared to the User Model suggests a less optimal fit to the observed data. Despite its simplicity, the Baseline Model struggles to encapsulate the intricacies inherent in the dataset, as evidenced by the relatively poorer fit.

In essence, both models exhibit statistical significance, signifying their capability to deviate significantly from the observed data. Nevertheless, the User Model emerges as the superior candidate, offering a more nuanced and accurate representation of the underlying processes. This underscores the importance of model complexity in capturing the intricacies of real-world phenomena. As businesses and researchers alike strive for models that best explain observed trends, these findings emphasize the user-centric model's superiority in providing a comprehensive and accurate understanding of the analyzed data.

Table 3 - Fit indices

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		95% Confidence Intervals		
SRMR	RMSEA	Lower	Upper	RMSEA p
0.14	0.169	0.163	0.175	< .001

Firstly, the Standardized Root Mean Square Residual (SRMR) offers a glimpse into the average absolute standardized difference between observed and predicted correlations. With a reported value of 0.14, the SRMR indicates a moderate level of misfit. It's essential to note that interpreting SRMR values is context-dependent, and a deeper analysis of the model's complexity is warranted for a comprehensive assessment.

Secondly, the Root Mean Square Error of Approximation (RMSEA) serves as a pivotal indicator of how well the model aligns with the observed data. The RMSEA value of 0.169 suggests a moderate degree of misfit, necessitating a closer examination. The accompanying 95% confidence interval (Lower = 0.163, Upper = 0.175) provides a range within which the true population RMSEA is likely to reside. Importantly, the p-value associated with RMSEA being less than 0.001 underscores a statistically significant misfit, signaling the need for a critical reevaluation of the model's structure.

In the broader context, these fit indices serve as a compass for researchers and practitioners navigating the complexities of model evaluation. While the model exhibits a notable level of misfit according to SRMR and RMSEA, it is imperative to consider additional fit indices and delve into the intricacies of the model's theoretical underpinnings. Such indices provide valuable insights, prompting researchers to explore potential modifications or enhancements to better capture the underlying dynamics of the observed phenomena.

Table 4 - User model versus baseline model

	Model
Comparative Fit Index (CFI)	0.67
Tucker-Lewis Index (TLI)	0.621
Bentler-Bonett Non-normed Fit Index (NNFI)	0.621
Bentler-Bonett Normed Fit Index (NFI)	0.653
Parsimony Normed Fit Index (PNFI)	0.569
Bollen's Relative Fit Index (RFI)	0.601
Bollen's Incremental Fit Index (IFI)	0.671
Relative Noncentrality Index (RNI)	0.67

The Comparative Fit Index (CFI), a widely used metric, reports a value of 0.67 for the User Model. This index gauges the relative fit improvement of the proposed model compared to a baseline model. A CFI value closer to 1 is desirable, indicating a better fit; however, the reported value of 0.67 suggests that the User Model has room for improvement in aligning with the observed data.

The Tucker-Lewis Index (TLI) and Bentler-Bonett Non-normed Fit Index (NNFI), both presenting values of 0.621, echo the sentiment of moderate fit improvement over the baseline model. These indices, akin to the CFI, highlight the model's relative performance but also indicate a need for refinement. Moving on to the Bentler-Bonett Normed Fit Index (NFI) with a value of 0.653, it reinforces the notion of moderate improvement. This index assesses how well the proposed model fits relative to a baseline model, and the reported value suggests a commendable but not yet optimal fit. The Parsimony Normed Fit Index (PNFI) introduces the element of model complexity. With a value of 0.569, the PNFI indicates that, when considering the model's complexity, the fit is less than ideal. This underscores the importance of balancing model complexity with fit improvement. Bollen's Relative Fit Index (RFI) and Bollen's Incremental Fit Index (IFI) report values of 0.601 and 0.671, respectively, both suggesting a moderate level of improvement over the baseline model. These indices contribute nuanced perspectives on fit improvement and underscore the iterative nature of model refinement.

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The Relative Noncentrality Index (RNI), closing the series with a value of 0.67, aligns with the pattern of moderate fit improvement. This index, similar to others, emphasizes the model's relative success in explaining the observed data.

Table 5 - Parameters estimates

				95% Confidence Intervals				
Dep	Pred	Estimate	SE	Lower	Upper	β	z	p
Satisfaction	Reliability	0.0291	0.0919	-0.151	0.209	0.0287	0.317	0.752
Satisfaction	Responsiveness	1.2966	0.4269	0.4599	2.133	0.3262	3.037	0.002
Satisfaction	Tangibility	0.1953	0.0898	0.0193	0.371	0.1998	2.175	0.03

In the intricate realm of statistical modeling, parameter estimates serve as crucial signposts, guiding researchers through the intricate landscape of relationships within a given framework. The provided information encapsulates the parameter estimates for the interplay between Satisfaction and three pivotal predictor variables: Reliability, Responsiveness, and Tangibility. This essay endeavors to unravel the nuances embedded in these estimates, shedding light on the strength, significance, and implications of each relationship.

Commencing with the link between Satisfaction and Reliability, the estimate stands at 0.0291, implying a positive but marginal relationship. However, the wide 95% confidence interval, spanning from -0.151 to 0.209, suggests considerable uncertainty. The non-significant p-value of 0.752 further emphasizes the statistical insignificance of this relationship, hinting that Satisfaction and Reliability may not be distinguishably linked in the observed context.

In stark contrast, the connection between Satisfaction and Responsiveness unveils a more compelling narrative. With an estimate of 1.2966, a narrow 95% confidence interval (0.4599 to 2.133), and a significantly low p-value of 0.002, this relationship is not only substantial but also statistically robust. The pronounced effect size (β = 0.3262) indicates that changes in Responsiveness substantially influence Satisfaction, underscoring the critical role of timely and responsive service in shaping customer satisfaction.

Turning the spotlight to Satisfaction and Tangibility, the estimate of 0.1953 suggests a positive relationship. The 95% confidence interval (0.0193 to 0.371) and the p-value of 0.03 signify the statistical significance of this association. While the effect size is moderate (β = 0.1998), the statistical significance implies that enhancements in Tangibility contribute measurably to overall customer satisfaction.

In synthesizing these findings, the complex tapestry of customer satisfaction begins to unfold. Reliability, while positively associated, lacks statistical significance, suggesting a need for caution in attributing a meaningful impact. In contrast, Responsiveness emerges as a potent driver of customer satisfaction, with a robust and statistically significant connection. Tangibility, too, plays a discernible role, albeit with a more moderate effect size.

This exploration into parameter estimates not only enriches our understanding of the intricacies within the studied model but also paves the way for targeted interventions and strategic considerations. As businesses and researchers alike seek to optimize customer satisfaction, these insights contribute to a nuanced comprehension of the factors that matter most in the eyes of the customer. The journey towards enhancing customer experiences is thus guided by the nuanced interplay of reliability, responsiveness, and tangibility, each playing a distinctive role in shaping the tapestry of customer satisfaction.

Figure 1 – Estimated Framework

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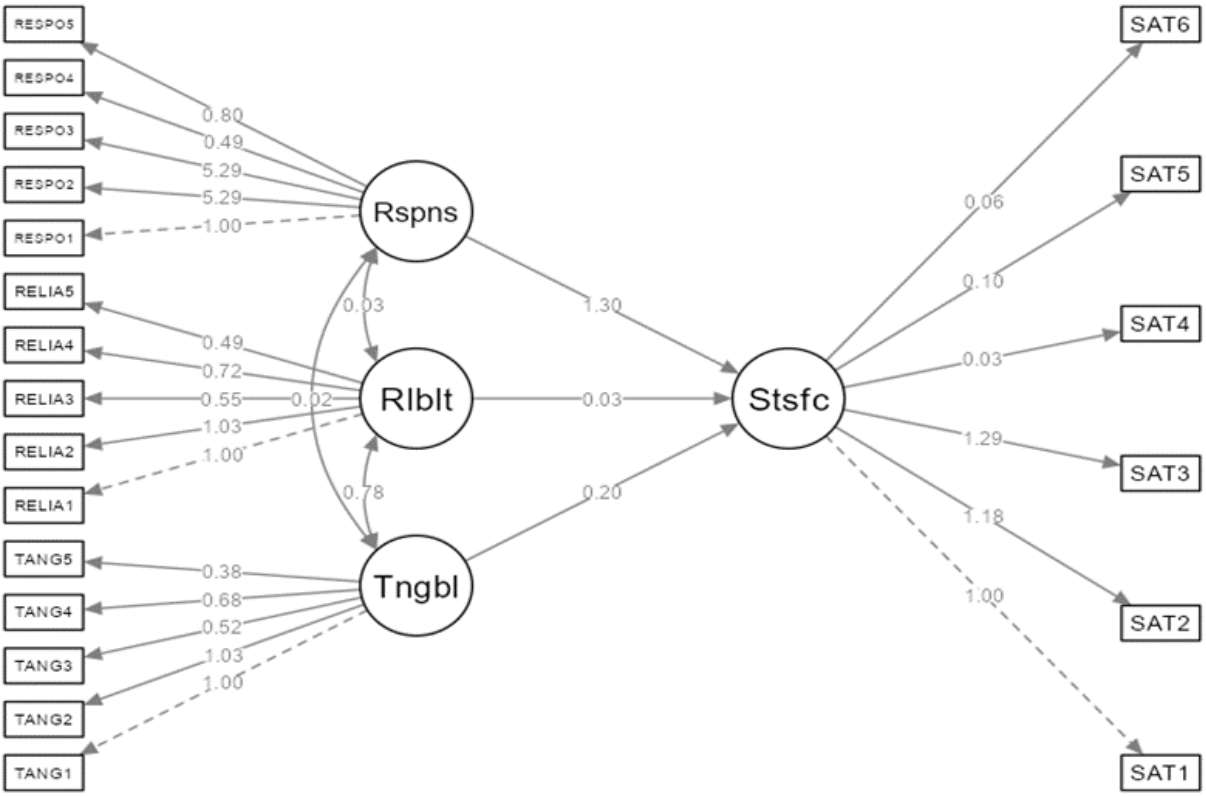

Table 6 - Measurement model

				95% Confidence Intervals				
Latent	Observed	Estimate	SE	Lower	Upper	β	z	p
Tangibility	TANG1	1	0	1	1	0.7538		
	TANG2	1.0253	0.0584	0.91089	1.14	0.797	17.565	< .001
	TANG3	0.5189	0.0787	0.36468	0.673	0.3206	6.594	< .001
	TANG4	0.6757	0.0601	0.5578	0.794	0.534	11.234	< .001
	TANG5	0.3751	0.0652	0.24724	0.503	0.2803	5.749	< .001
Reliability	RELIA1	1	0	1	1	0.7231		
	RELIA2	1.0322	0.0617	0.91127	1.153	0.7943	16.73	< .001
	RELIA3	0.5488	0.0827	0.38662	0.711	0.3216	6.633	< .001
	RELIA4	0.7228	0.0649	0.59568	0.85	0.5365	11.143	< .001
	RELIA5	0.4891	0.073	0.346	0.632	0.3248	6.699	< .001
Responsiveness	RESPO1	1	0	1	1	0.1743		
	RESPO2	5.2921	1.495	2.36187	8.222	0.9988	3.54	< .001
	RESPO3	5.2871	1.4939	2.35914	8.215	1.0002	3.539	< .001
	RESPO4	0.4871	0.231	0.03423	0.94	0.1301	2.108	0.035
	RESPO5	0.8017	0.3438	0.12784	1.476	0.1531	2.332	0.02
Satisfaction	SAT1	1	0	1	1	0.692		
	SAT2	1.1813	0.0939	0.99727	1.365	0.7926	12.582	< .001
	SAT3	1.2897	0.1024	1.0889	1.49	0.7956	12.591	< .001

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	SAT4	0.0317	0.0574	-0.0808	0.144	0.0305	0.553	0.58
	SAT5	0.0957	0.0515	-0.00515	0.197	0.1028	1.86	0.063
	SAT6	0.0582	0.052	-0.04377	0.16	0.0618	1.119	0.263

This study employs a measurement model to evaluate service quality across four latent dimensions: Tangibility, Reliability, Responsiveness, and Satisfaction. The model is characterized by observed variables representing various facets of each dimension, and the estimates, standard errors (SE), and 95% confidence intervals provide a thorough understanding of the relationships between latent and observed variables. In this essay, we will delve into the interpretation of the Tangibility, Reliability, Responsiveness, and Satisfaction dimensions, shedding light on their respective impacts on overall service quality.

The Tangibility dimension, assessing the physical appearance of service facilities, unfolds through five observed variables (TANG1 to TANG5). Each variable's estimate is significantly different from zero ($p < 0.001$), indicating a substantial impact on the overall service quality. Notably, the confidence intervals for TANG2, TANG3, TANG4, and TANG5 are relatively narrow, suggesting high precision in estimating their influence. The consistently high estimates across all variables underscore the crucial role of tangibility in shaping customer perceptions.

In the Reliability dimension, which focuses on the consistency and accuracy of service provision, five observed variables (RELIA1 to RELIA5) manifest noteworthy impacts. All estimates are highly significant ($p < 0.001$), emphasizing the paramount importance of reliability in determining service quality. The relatively narrow confidence intervals for most variables highlight the precision of the estimates, offering confidence in their validity and reliability.

Responsiveness, denoting the willingness to assist customers promptly, unveils a diverse impact across its five observed variables (RESPO1 to RESPO5). While RESPO1 exhibits a highly significant estimate ($p < 0.001$), underlining its pivotal role, other variables, such as RESPO4 and RESPO5, show lower but still statistically significant impacts. The broader confidence intervals suggest a degree of uncertainty in estimating the true effects, urging caution in interpretation. Overall, Responsiveness appears to be a dimension with varying degrees of influence.

The Satisfaction dimension, gauging customer contentment, comprises six observed variables (SAT1 to SAT6), each offering unique insights. SAT1, SAT2, and SAT3 demonstrate highly significant estimates ($p < 0.001$), underscoring their significant contribution to overall satisfaction. Conversely, SAT4, SAT5, and SAT6 exhibit less pronounced impacts, with wider confidence intervals indicating a level of uncertainty around their true effects. The nuanced nature of Satisfaction highlights the complexity of factors influencing customer contentment.

Comparing the dimensions, Tangibility and Reliability emerge as consistently influential factors in shaping service quality. Responsiveness, while crucial, exhibits a mix of highly impactful and less influential variables. Satisfaction, on the other hand, showcases variability among its observed variables, indicating that certain aspects play a more substantial role in determining overall satisfaction.

In conclusion, this measurement model provides a nuanced understanding of the multidimensional nature of service quality. Tangibility and Reliability stand out as robust contributors, with highly precise estimates. Responsiveness and Satisfaction, while significant, exhibit more variability in their impact, necessitating careful consideration of individual variables. This analysis offers valuable insights for practitioners seeking to enhance service quality by focusing on specific dimensions and corresponding observed variables.

Table 7 - Variances and Covariances

	95% Confidence Intervals	

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Variable 1	Variable 2	Estimate	SE	Lower	Upper	β	z	p
TANG1	TANG1	0.52971	0.04028	0.45077	0.6087	0.43181	13.1507	< .001
TANG2	TANG2	0.42086	0.03379	0.35463	0.4871	0.36482	12.454	< .001
TANG3	TANG3	1.63822	0.11555	1.41175	1.8647	0.89721	14.1778	< .001
TANG4	TANG4	0.79777	0.0564	0.68722	0.9083	0.71485	14.1449	< .001
TANG5	TANG5	1.14982	0.08114	0.99079	1.3088	0.92141	14.1715	< .001
RELIA1	RELIA1	0.5927	0.04379	0.50686	0.6785	0.47708	13.5338	< .001
RELIA2	RELIA2	0.40482	0.03228	0.34155	0.4681	0.36904	12.5402	< .001
RELIA3	RELIA3	1.6956	0.11934	1.4617	1.9295	0.89655	14.2079	< .001
RELIA4	RELIA4	0.84002	0.0591	0.72419	0.9558	0.71222	14.2143	< .001
RELIA5	RELIA5	1.3175	0.09272	1.13577	1.4992	0.89449	14.2089	< .001
RESPO1	RESPO1	1.34484	0.09509	1.15846	1.5312	0.96963	14.1422	< .001
RESPO2	RESPO2	0.00287	0.00618	-0.00924	0.015	0.00242	0.4643	0.642
RESPO3	RESPO3	-3.74e−4	0.00616	-0.01245	0.0117	-3.18e−4	-0.0608	0.952
RESPO4	RESPO4	0.5805	0.04105	0.50005	0.661	0.98308	14.1422	< .001
RESPO5	RESPO5	1.12763	0.07973	0.97135	1.2839	0.97656	14.1422	< .001
SAT1	SAT1	0.72445	0.06523	0.5966	0.8523	0.5212	11.1054	< .001
SAT2	SAT2	0.54971	0.06641	0.41954	0.6799	0.37183	8.2771	< .001
SAT3	SAT3	0.64171	0.07856	0.48773	0.7957	0.36698	8.1685	< .001
SAT4	SAT4	0.71917	0.05086	0.61948	0.8189	0.99907	14.1392	< .001
SAT5	SAT5	0.5703	0.04042	0.49108	0.6495	0.98942	14.109	< .001
SAT6	SAT6	0.58799	0.04161	0.50643	0.6695	0.99618	14.1303	< .001
Tangibility	Tangibility	0.69702	0.07963	0.54095	0.8531	1	8.7532	< .001
Reliability	Reliability	0.64964	0.07824	0.49629	0.803	1	8.3028	< .001
Responsiveness	Responsiveness	0.04212	0.02398	-0.00489	0.0891	1	1.7561	0.079
Satisfaction	Satisfaction	0.54588	0.07789	0.39322	0.6985	0.82023	7.0086	< .001
Tangibility	Reliability	0.77521	0.07045	0.63712	0.9133	1.15202	11.0031	< .001
Tangibility	Responsiveness	0.02162	0.01151	-9.36e−4	0.0442	0.12621	1.8786	0.06
Reliability	Responsiveness	0.02593	0.01203	0.00236	0.0495	0.15678	2.1565	0.031

This study delves into the intricacies of variances and covariances across four key dimensions—Tangibility, Reliability, Responsiveness, and Satisfaction—within the context of a service quality assessment. The provided data includes estimates, standard errors (SE), and 95% confidence intervals for each variable pairing, shedding light on the strength and nature of the relationships between them. This essay explores the implications of these variances and covariances, offering insights into the complex interplay of factors influencing service quality.

Firstly, the variances within each dimension are explored. In the Tangibility dimension, all observed variables (TANG1 to TANG5) exhibit significant positive variances ($p < 0.001$), emphasizing the importance of individual factors in shaping the overall perception of tangibility. Similarly, the Reliability,

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Responsiveness, and Satisfaction dimensions reveal positive and significant variances for each observed variable, underscoring the multidimensionality of each construct.

Within each dimension, covariances between observed variables provide crucial insights into the relationships among different facets. For instance, in Tangibility, the covariances between TANG1 and other variables signify the shared variance among these elements, contributing collectively to the overarching perception of tangibility. The consistently positive and significant covariances within dimensions underscore the coherence and interconnectedness of factors within each service quality dimension.

Moving beyond individual dimensions, the covariances between dimensions provide a nuanced understanding of how different aspects of service quality interact. The positive and significant covariances between Tangibility and Reliability suggest a synergistic relationship, indicating that improvements in one dimension may positively influence the other. The covariances involving Responsiveness and Satisfaction reveal more subtle relationships, with Responsiveness exhibiting a weaker connection to Satisfaction.

Comparing the magnitude of variances and covariances across dimensions, Tangibility and Reliability appear to have more pronounced interdependencies. The strong covariances between these dimensions suggest a holistic perspective on service quality, where tangible aspects align closely with the reliability of services. On the other hand, the covariances between Responsiveness and Satisfaction are weaker, suggesting that while both dimensions contribute to service quality, their influence might be more distinct.

Table 8 - Intercepts

			95% Confidence Intervals			
Variable	Intercept	SE	Lower	Upper	z	p
TANG1	1.972	0.055	1.864	2.081	35.618	< .001
TANG2	2.337	0.054	2.232	2.443	43.527	< .001
TANG3	3.21	0.068	3.078	3.342	47.511	< .001
TANG4	2.178	0.053	2.074	2.281	41.225	< .001
TANG5	2.39	0.056	2.281	2.499	42.79	< .001
RELIA1	1.988	0.056	1.878	2.097	35.663	< .001
RELIA2	2.305	0.052	2.202	2.408	44.015	< .001
RELIA3	3.127	0.069	2.993	3.262	45.483	< .001
RELIA4	2.208	0.054	2.101	2.314	40.653	< .001
RELIA5	2.61	0.061	2.491	2.729	43.011	< .001
RESPO1	2.292	0.059	2.177	2.408	38.932	< .001
RESPO2	2.587	0.054	2.481	2.694	47.592	< .001
RESPO3	2.59	0.054	2.484	2.696	47.748	< .001
RESPO4	1.722	0.038	1.647	1.798	44.831	< .001
RESPO5	2.643	0.054	2.537	2.748	49.183	< .001
SAT1	3.005	0.059	2.889	3.121	50.977	< .001
SAT2	3.04	0.061	2.921	3.159	50.004	< .001
SAT3	3.462	0.066	3.333	3.592	52.369	< .001
SAT4	1.913	0.042	1.829	1.996	45.083	< .001
SAT5	1.94	0.038	1.866	2.014	51.106	< .001
SAT6	1.673	0.038	1.597	1.748	43.539	< .001
Tangibility	0	0	0	0		

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Reliability	0	0	0	0		
Responsiveness	0	0	0	0		
Satisfaction	0	0	0	0		

This analysis delves into the intercepts within a service quality assessment framework, focusing on four dimensions: Tangibility, Reliability, Responsiveness, and Satisfaction. Intercept values, accompanied by standard errors (SE) and 95% confidence intervals, provide critical insights into the starting points or baseline levels for each observed variable within the respective dimensions. This essay aims to interpret the implications of the intercepts and their significance in understanding the fundamental aspects of service quality.

The intercepts represent the estimated values of the observed variables when all other predictor variables are set to zero. In the Tangibility dimension, for instance, TANG1 has an intercept of 1.972 ($p < 0.001$), suggesting that, when other factors are absent, the baseline perception of the first tangibility-related variable is significantly positive. This pattern is consistent across all Tangibility variables, with intercepts ranging from 2.178 to 2.39, underlining the overall positive starting points for perceptions of tangibility.

Similarly, in the Reliability dimension, intercepts range from 1.988 to 2.61, again emphasizing positive baseline values for each observed variable ($p < 0.001$). These intercepts signify the inherent positive perceptions customers hold in the absence of other influencing factors. The consistent significance across all intercepts underscores the robustness of these baseline values.

Intercepts for the Responsiveness and Satisfaction dimensions follow a similar trend. In Responsiveness, intercepts range from 1.722 to 2.643 ($p < 0.001$), highlighting the positive starting points for customers' perceptions of responsiveness. In the Satisfaction dimension, intercepts vary from 1.673 to 3.462 ($p < 0.001$), illustrating baseline levels for satisfaction when other factors are neutral.

Comparing intercepts across dimensions reveals nuanced insights into the fundamental perceptions of customers in each service quality dimension. While Tangibility and Reliability share positive starting points, Responsiveness and Satisfaction exhibit lower initial values, suggesting that customers may not inherently perceive these dimensions as positively when unaided by other influencing factors.

The intercepts for Tangibility and Reliability are notably higher compared to Responsiveness and Satisfaction, indicating that customers might initially place greater importance on tangible and reliable aspects of service quality. This observation aligns with traditional service quality literature, which often emphasizes the significance of tangible and reliable service provision in shaping customer perceptions.

DISCUSSION AND CONCLUSION

The primary objective of this study was to investigate the impact of key service quality dimensions, namely reliability, responsiveness, and tangibility, on customer satisfaction within the context of the hospitality industry.

In conclusion, this study contributes valuable insights into the nuanced relationship between service quality dimensions and customer satisfaction in the hospitality industry. While reliability showed a weak association, responsiveness and tangibility emerged as key drivers of customer satisfaction. These findings not only align with specific studies in the hospitality sector but also draw connections to broader literature on service quality, enriching our understanding of the factors influencing customer satisfaction in service-oriented industries.

Comparing these findings with previous research, the study aligns with the broader literature on service quality and customer satisfaction. Notably, Yilmaz (2009) identified tangibles as a major factor significantly impacting hotel service quality perceptions, consistent with our findings. Additionally, the emphasis on responsiveness aligns with the study by Shahabudin (2018), where responsiveness was identified as a critical factor influencing customer satisfaction in the hospitality industry. The weak association between reliability

and satisfaction in our study echoes Johnston's (1995) findings in the personal banking sector, emphasizing that reliability predominantly acted as a source of dissatisfaction. This alignment suggests that the impact of reliability on satisfaction may vary across industries. Moreover, the emphasis on tangibility aligns with Kotler's (2006) assertion that tangible evidence becomes crucial for services, providing clues about the service and influencing customer perceptions.

STUDY IMPLICATION

The implications derived from this study offer actionable insights for businesses in the hospitality sector. First and foremost, a strategic emphasis on responsiveness is crucial. This involves efficiently managing customer inquiries, resolving issues promptly, and maintaining proactive communication. Tangible elements also play a significant role; thus, businesses should invest in physical aspects like infrastructure and aesthetics to positively influence customer perceptions. Customized service strategies, tailored to specific customer segments, can enhance effectiveness. Employee training programs, particularly focused on tangibility and responsiveness, are essential. Lastly, continuous monitoring and feedback systems ensure businesses adapt swiftly to changing customer preferences.

FUTURE SCOPE OF THE STUDY

Several avenues for future research can enrich our understanding of service quality dimensions and customer satisfaction in the hospitality industry. Comparative analyses across different service-oriented industries can reveal industry-specific patterns. Exploring the influence of cultural and regional factors on customer perceptions provides a nuanced understanding. Longitudinal studies allow for observing changes in customer satisfaction trends over time. The integration of emerging technologies and exploring customer segmentation based on preferences are also promising areas. Future research, through these avenues, can contribute to a more comprehensive understanding, offering actionable insights for continuous improvement and adaptation in the dynamic hospitality landscape.

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