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The impact of quality on reputation, supply, price, and booking intentions: A moderation analysis

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Abstract: This study investigates the role of property quality in shaping booking intentions within the dynamic landscape of the hospitality sector. A comprehensive approach, integrating qualitative and quantitative methodologies, is employed, utilising Airdna's dataset spanning from July 2016 to June 2020. Multiple regression models, including interaction terms, are applied to scrutinise the moderating role of property quality. The study unveils unexpected findings, particularly a counterintuitive negative correlation between property quality and booking intentions in Model 7, challenging conventional assumptions. Theoretical implications call for a deeper exploration of contextual nuances and psychological intricacies influencing guest preferences, urging a re-evaluation of established models within hospitality management. On a practical note, the study emphasises the significance of continuous quality improvement and dynamic strategies aligned with evolving consumer expectations. The unexpected correlation prompts a shift towards more context-specific approaches in understanding and managing guest behavior, offering valuable insights for both academia and the ever-evolving landscape of the hospitality industry.

Keywords: booking intention; property quality; guest decision-making; context-specific dynamics; sharing economy

1. Introduction

Nestled within the dynamic and multifaceted landscape of the hospitality sector, the accommodation industry represents a complex intersection of factors that significantly shape the decisions made by discerning travelers. This intricate relationship between reputation, price, supply factors, and property quality emerges as the linchpin, emphasising its paramount importance for the prosperity and competitiveness of accommodation providers. Recognising the intricacies inherent in this ecosystem, our study embarks on a comprehensive exploration, aiming to untangle primarily, otherwise unravel the influences of property quality, investigating not only its direct impact but also its variability as a moderator for reputation, price, and supply on booking intention.

In this ever-evolving industry, reputation functions as a linchpin, melding the perception of accommodations through customer reviews, online ratings, and word-of-mouth enlarges our perception of customer behaviour (Cheung and Thadani, 2012). Simultaneously, the strategic pricing decisions of accommodation providers, mirrored in the correlation between price and booking intention, play a pivotal role in attracting and retaining guests (Kock et al., 2016).

In the intricate landscape of the accommodation industry, requires an understanding of customer behaviour, service quality, and hospitality management of

unravelling the difficult dynamics that influence the decisions of discerning travellers. Consumer behaviour is a multifaceted exploration of individuals, groups, or organisations and their involvement in the entire lifecycle of goods and services, spanning acquisition, utilisation, and disposal (Paz and Rodríguez-Vargas, 2023). Originating as a distinct sub-discipline of marketing during the 1940s–1950s, consumer behaviour has evolved into an interdisciplinary social science, integrating various elements (Schivinski, 2021; Tarde, 1997). This field delves into the complex interchange of consumers' emotions, attitudes, and preferences, offering insights into the dynamic factors influencing their purchasing decisions (Foxall, 2001). The expansive definition encompasses all activities related to the consumer journey, from the initial purchase considerations, information search, and evaluation processes of the accommodation, to subsequent usage, renewal, revisitation, and referrals.

Consumer behaviour, as defined by the American Marketing Association, involves the dynamic interaction of affect and cognition, behaviour, and environmental events, shaping how individuals conduct the exchange aspects of their lives (Foxall, 2001). As an applied social science construct, consumer behaviour analysis tourist behavioural principles, often derived experimentally, interpreting tourist economic consumption. This dynamic discipline resides at the intersection of economic psychology and marketing science, providing a comprehensive understanding of the complicated decision-making processes individuals undergo within the marketplace.

Guided by service quality theories, notably SERVQUAL, the study navigates the dimensions contributing to customer satisfaction within the accommodation industry (Chuenyindee et al., 2022). SERVQUAL model identifies responsiveness, empathy, reliability, assurance, and tangibles as key factors influencing perceptions of service quality (Ramseook-Munhurrun et al., 2010). In the context of accommodations, this theory becomes instrumental in assessing the cleanliness of facilities, professionalism of staff, responsiveness to guest needs, and the overall atmosphere of the establishment (Jones et al., 1997). Through the lens of SERVQUAL, the study is shaped to estimate and evaluate property quality of hosts, vis-à-vis service excellence.

Hospitality management theories, encompassing principles related to effective business administration in the hospitality sector, guide the strategic decisions underpinning the success of accommodation providers (Evans, 2019). Effective hospitality management practices are integral for optimising guest experiences, ensuring operational efficiency, and maintaining a competitive edge (Clarke and Chen, 2009). In this study, hospitality management theories, such as total quality management requiring continuous improvement, customer relationship management has strong ties with building and sustaining relationship for the sustainability of an enterprise, or theory of planned behaviour dealing with the individuals' intent to predict tourist behaviour. These form the backdrop against which the influence of strategic management decisions, particularly those related to property quality, is explored.

By applying the construct of consumer behaviour, the research gains a robust foundation for comprehending the intricate decision-making processes in the tourism and hospitality sector (Foxall, 2001). The definition by the American Marketing

Association situates consumer behaviour within applied social science, which aligns seamlessly with the study's aim of scrutinising tourist behaviour within the realm of economic consumption (Kimmel and Kimmel, 2018). As the study delves into customer satisfaction in the accommodation industry, the integration of service quality theories, more preferably SERVQUAL, furnishes a structured framework for evaluating reliability, responsiveness, assurance, empathy, and tangibles (Chuenyindee et al., 2022; Ramseook-Munhurrun et al., 2010).

Moreover, the infusion of hospitality management theories into the research design underscores the strategic significance of effective business administration in the hospitality sector. These theories guide the exploration of how strategic management decisions, particularly concerning property quality, influence the success and competitiveness of accommodation providers. Understanding the interplay between strategic decisions and guest satisfaction is essential for optimising experiences, ensuring operational efficiency, and maintaining a competitive edge in the dynamic hospitality landscape (Jones et al., 1997).

The significance of this study lies in its contribution to both theoretical discourse and practical implications for the accommodation industry. By nourishing established theories and leveraging Airdna's comprehensive dataset, the research seeks to unravel the influences of property quality on reputation, price, supply, and on booking intention. The integration of interaction terms in the analysis further refines the understanding of how property quality moderates these intricate relationships. This integrated approach positions property quality as a moderator, shaping the intricate relationships between reputation, price, supply, and booking intention.

Rationale for moderation analysis

Property quality is designated as the moderator among other variables because it plays a pivotal role in shaping the relationships between various factors within the accommodation industry. Some of the key reason why property quality is positioned as the moderator:

Central importance: The text highlights property quality as a linchpin within the hospitality sector, emphasising its paramount importance for the prosperity and competitiveness of accommodation providers (Cheung and Thadani, 2012). This suggests that property quality is not just one of many factors but rather a key determinant that influences other variables.

Influence on decision making: Property quality significantly influences the decisions made by travelers, including their booking intentions (Kock et al., 2016). This indicates that the quality of accommodation establishments can directly impact other variables such as reputation, price, and supply within the industry.

Strategic significance: Effective property management decisions, including those related to property quality, are essential for the success and competitiveness of accommodation providers (Clarke and Chen, 2009). By moderating the relationships between reputation, price, supply, and booking intention, property quality becomes a strategic consideration that guides decision-making processes within the industry.

Integration with established theories: The study leverages established service

quality theories such as SERVQUAL to evaluate property quality (Ramseook-Munhurrun et al., 2010). This integration underscores the significance of property quality within the broader context of service excellence and customer satisfaction, further emphasising its role as a moderator among other variables.

Overall, property quality emerges as the moderator among other variables because of its central importance, influence on decision-making processes, strategic significance, and integration with established theories within the accommodation industry.

As we progress, the ensuing sections meticulously delve into the methodology underpinning this research. We detail our approach to data collection and analysis, leveraging the quantitative analytical approach. Through this endeavour, we anticipate not only contributing novel insights to academic discourse on property quality but also providing practical implications for industry practices.

2. Materials and methods

The exploration of Airbnb within the tourism and hospitality sector had involved combining qualitative methodologies demonstrated by Huang et al. (2020) and Koh and King (2017), and quantitative approaches exemplified by Guo et al. (2022) and Lutz and Newlands (2018). The recent surge in quantitative investigations is particularly influenced by the COVID-19 pandemic, which had increased focus on short-term rental dynamics.

Prior studies, leveraged Airdna database, have scrutinised various aspects of the lodging platform industry. However, a majority of this research had focused on the exploration of urban dynamics (Grisdale, 2021; Ndaguba and van Zyl, 2023). For instance, Agarwal et al. (2019) assessed variable dependability, Jung et al. (2016) analysed user behaviors in platforms like Couchsurfing and Airbnb, and Gunter (2018) explored the dynamics of achieving superhost status. Airdna's utilisation by entities like CBRE Hotel Americas Research, Kelley and Asad, HVS Consulting and Valuation Division of TS Worldwide, and Dogru and Pekin underscores its significance in evaluating Airbnb's impacts.

This study involved collecting data from the Airdna database between July 2016 and June 2020, primarily utilising ten established hypotheses, in understanding property quality ramifications. Control variables such as price and reputation were continuous, while supply was a categorical variable.

2.1. Hypotheses, model specification and interpretation

The variables utilised are derived based on existing literature. For instance, research have shown that to estimate reputation, we could use online reviews (Baka, 2016; Proserpio and Zervas, 2017), considering the direct linkage between online reviews and ratings, which if fused will result in multicollinearity issues, we utilised reviews alone. As demonstrated by Śmietana et al. (2014), to estimate investment property, ratings remain the livewire. Also, as Kaiser and Freybote (2023) argues, costar rating is significant variable in measuring property quality, nonetheless, we went a nudge further to include superhost (ratings × superhost = property quality). The essence for the inclusion of superhost is that Airbnb designates superhosts as the

highest-rated and most seasoned hosts on Airbnb, dedicated to delivering exceptional hospitality. To attain this status, hosts must fulfill specific requirements established by Airbnb. Jiang et al. (2023) argue that:

"Airbnb grants "superhost" status to experienced hosts who provide a sterling example for other hosts and extraordinary experiences for their guests; the site posts a badge automatically on superhosts' listings and profile for simple user identification. Deboosere et al. (2019) found that in New York City the "superhost" status allows the host to charge a small premium and leads to an increase in monthly income. This difference means that superhosts conduct more bookings per month than other hosts. The significant influence of the superhost's identity supports similar findings by Wang and Nicolau (2017)" (Jiang et al., 2023).

For analysis, multiple regression was employed, and seven models from the proposed hypotheses were assessed. This statistical technique is apt for situations where numerous factors influence the dependent variable individually and collectively. Incorporating interaction terms allows for assessment of property quality impact on other factors. The equation 1 below includes interaction terms that account for the moderating effect of property quality on the relationships between reputation, price, supply, and booking intention. The interaction terms capture how the impact of each independent variable is contingent on the level of property quality.

$$\text{Booking Intention} = \beta_0 + \beta_1 \times \text{Property Quality} + \beta_2 \times \text{Price} + \beta_3 \times \text{Supply} + \beta_4 \times \text{Reputation} + \beta_5 + \text{Reputation} \times \text{Property Quality} + \beta_6 \times \text{Price} \times \text{Prroperty Quality} + \beta_7 \times \text{Supply} \times \text{Property Quality} + \varepsilon$$

Definition of equation:

β_0: Represents the intercept term, the expected value of the dependent variable (Booking intention) when all independent variables are zero.

β_1: Represents the coefficient for the variable "reputation," indicating the expected change in booking intention for a one-unit change in Reputation, holding other variables constant.

β_2: Represents the coefficient for the variable "price," indicating the expected change in booking intention for a one-unit change in price, holding other variables constant.

β_3: Represents the coefficient for the variable "supply," indicating the expected change in booking intention for a one-unit change in supply, holding other variables constant.

$\beta4$: Represents the coefficient for the variable "property quality," indicating the expected change in booking intention for a one-unit change in property quality, holding other variables constant.

β_5: Represents the coefficient for the interaction term between "reputation" and "property quality," indicating how the relationship between reputation and booking Intention is moderated by property quality.

β_6: Represents the coefficient for the interaction term between "price" and "property quality," indicating how the relationship between price and booking Intention is moderated by property quality.

β_7: Represents the coefficient for the interaction term between "supply" and "property quality," indicating how the relationship between supply and booking

intention is moderated by property quality.

ε: Represents the error term, capturing unobserved factors or random variations influencing booking intention that are not accounted for by the included variables.

Estimating this model and testing the significance of the interaction terms will provide insights into whether property quality moderates the relationships as hypothesised. Keep in mind that multicollinearity and other assumptions should be considered when interpreting the results.

In essence, this model allows us to understand how each independent variable (reputation, price, supply, property quality) individually and in interaction with property quality influences booking intention. The coefficients (β's) quantify the magnitude and direction of these effects.

The hypotheses derived from the provided multiple regression model can be formulated based on the expected relationships between the independent variables and the dependent variable (booking intention). Here are the hypotheses corresponding to each coefficient:

Hypothesis for β_1: There is a significant relationship between reputation and booking intention.

Hypothesis for β_2: There is a significant relationship between price and booking intention.

Hypothesis for β_3: There is a significant relationship between supply and booking intention.

Hypothesis for β_4: There is a significant relationship between property quality and booking intention.

Hypothesis for β_5: The relationship between reputation and booking intention is moderated by property quality.

Hypothesis for β_6: The relationship between price and booking intention is moderated by property quality.

Hypothesis for β_7: The relationship between supply and booking intention is moderated by property quality.

These hypotheses reflect the expected impact of each variable on booking intention and the potential moderating effect of property quality on the relationships between reputation, price, supply, and booking intention. Statistical analysis of the regression coefficients will help assess whether these relationships are statistically significant and provide insights into the strength and direction of the associations.

This investigation employs a robust quantitative method, drawing on Airdna's comprehensive dataset to investigate the moderating role of property quality in the complex interrelationships between reputation, price, supply, and booking intention in the accommodation industry. By utilising a comprehensive model that includes interaction terms, the research aims to discern how property quality enhances or diminishes the impact of reputation, price, and supply on guests' booking intentions. The utilisation of multiple regression and interaction terms enhances analytical depth, offering valuable insights into the interplay of various factors within the accommodation industry.

2.2. Descriptive analysis

The analysis of descriptive statistics unveils key insights into various dimensions of the dataset related to the accommodation industry (see **Table 1**). These statistics shed light on critical variables, each offering a unique perspective on the factors influencing booking intention.

Table 1. Descriptive statistics.

Variable	Obs	Mean	Std. Dev.	Min	Max
BookinINT	1238	7186.828	8455.94	0	50,809
Property quality	1238	39.921	64.837	0	200
Unit price	1238	257.203	148.153	39.33	1637.5
Supply	1238	0.493	0.237	0.032	1
Reputation	1238	25.227	52.686	0	579
Reputation Propert~y	1238	1526.41	4498.022	0	57,900
Unit price Propert~y	1238	11,152.67	23,375.636	0	287,358
Supply PropertyQua~y	1238	19.867	35.028	0	200

Firstly, the mean booking intention (BookinINT) stands at 7186.83, showcasing a substantial level of booking intention on average. However, the high standard deviation of 8455.94 signals significant variability in booking intentions across observations, emphasising the diverse nature of the dataset, where instances with zero booking intention coexist with those exhibiting high levels.

Property quality, with a mean of 39.92, suggests a moderate level of perceived property quality. The high standard deviation of 64.84 points to considerable variability in assessments, spanning from very low to very high quality. This wide-ranging evaluation of property quality is further highlighted by the variable's minimum and maximum values (0 to 200).

Unit price, with an average of 257.20, reflects the central tendency of pricing across observations. The high standard deviation of 148.15 indicates notable variability in unit prices. The price ranges from 39.33 to 1637.5 underscores the diversity in pricing structures within the dataset.

Supply, with a mean of 0.493, indicates that, on average, approximately half of the units are available. The standard deviation of 0.237 suggests variability in supply levels, and the range from 0.032 to 1 highlights the diverse availability of units.

Reputation, with a mean score of 25.23, signifies a moderate average reputation. The high standard deviation of 52.69 indicates considerable variation in reputation scores across observations. The reputation variable spans from 0 to 579, capturing instances of both low and high reputation.

The interaction terms, including reputation_property quality, unit price_property quality, and supply_property quality, introduce complexity to the analysis. These terms, with their respective means, standard deviations, and ranges, represent the products of reputation, unit price, and supply with property quality. The variability in these interaction terms emphasises the relationships within the dataset, requiring further investigation to understand their moderating effects.

3. Results

Critical analysis of these descriptive statistics prompts careful consideration of outliers, interpretation of means in the context of data distribution, and exploration of factors contributing to variability. Additionally, the absence of information regarding the scale or units of variables calls for a more detailed understanding of the practical implications of the statistics. While the descriptive statistics offer valuable insights, a more comprehensive exploration, potentially engaging more analytical test to further estimate the dataset.

The pairwise correlational statistics offer a better perspective on the complex relationships within the hospitality sector (see **Table 2**), shedding light on factors that influence booking intention. The analysis aligns with existing literature and theories in the field, providing valuable insights into the dynamics of guest decision-making.

Table 2. Pairwise correlations.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
BookinINT	1.000							
Property Quality	0.036	1.000						
Unit_price	−0.168	0.092	1.000					
Supply	0.605	0.013	−0.254	1.000				
Reputation	0.033	0.152	0.103	0.056	1.000			
Reputation_Pro~y	0.046	0.493	0.054	0.033	0.633	1.000		
Unit_price_Pro~y	−0.046	0.803	0.431	−0.086	0.120	0.391	1.000	
Supply_Propert~y	0.206	0.878	−0.017	0.252	0.155	0.462	0.615	1.000

Beginning with the correlation between booking intention and property quality (0.036), the weak positive relationship suggests that while property quality holds significance, it may not singularly drive booking intention. This finding resonates with research emphasising the multifaceted nature of guest decision-making, where aspects beyond property quality, such as price and reputation, play crucial roles (Kock et al., 2016; Sigala, 2017).

The negative correlation between booking intention and unit price (−0.168) corresponds with the well-established economic principle that lower prices tend to stimulate demand. However, it also underscores the delicate balance required in pricing strategies to maintain perceived value (Enz, 2010). Guests weigh the cost against the value offered, emphasising the need for strategic pricing strategies in the competitive hospitality landscape.

The strong positive correlation between booking intention and supply (0.605) aligns with fundamental economic principles of supply and demand. However, a critical perspective suggests that an excessively high supply, without a commensurate increase in demand, could lead to challenges such as price competition and potential impacts on profitability (Sigala, 2017).

Turning to booking intention and reputation (0.033), the weak positive relationship challenges the conventional belief that a strong reputation directly translates to higher booking intention. This finding underscores the need for an

understanding of how reputation interacts with other factors in influencing booking decisions (Cheung and Thadani, 2012).

Examining the combined effects of reputation_property quality (0.046), the positive correlation implies that a good reputation, coupled with high property quality, can contribute positively to booking intention. However, the relatively low correlation suggests that other factors also play a role, supporting the idea that guest decision-making is influenced by multiple considerations (Cheung and Thadani, 2012; Kock et al., 2016).

The negative correlation between booking intention and unit_price_property quality (−0.046) highlights the delicate balance between price and perceived value. Higher prices, even with high property quality, may deter potential guests, emphasising the importance of finding this equilibrium in pricing strategies (Enz, 2010).

The positive correlation between booking intention and supply_property quality (0.206) suggests that a combined effect of good property quality and ample supply tends to increase booking intention. This finding underscores the synergistic impact of various factors influencing guests' decisions, emphasising the need for a holistic approach in accommodation management (Cheung and Thadani, 2012; Sigala, 2017).

Overall, the correlational analysis contributes to our understanding of the sophisticated interaction of the factors influencing booking intention in the hospitality sector. The findings both align with established principles and challenge conventional wisdom, highlighting the need for tailored strategies that consider the multifaceted nature of guest decision-making.

However, correlational analysis is restricted to simple causality, a more advanced analysis and test of all assumptions were carried out. The nested regression statistics presented in **Table 3** explore the impact of various independent variables on Booking Intention in the hospitality sector, unveiling the interactions between these concepts and constructs. The analysis critically examined each model's findings, while **Table 4** demonstrates the measure used primarily in regression analysis to detect the presence of multicollinearity among independent variables.

Table 3. Multiple regression.

Booking intention	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Property quality	0.06*	0.07*	0.05*	0.05*	0.05*	0.11**	−0.09
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.05)	(0.08)
Reputation		0.08*	0	0	0	0	−0.01
		(0.04)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
unit_Price		−0.07***	0.02**	0.02**	0.02**	0.04***	0.04**
		(0.02)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Supply			232.44***	232.44***	232.44***	232.4***	220.25***
			(7.21)	(7.21)	(7.21)	(7.2)	(8.23)
unit_Price_Prop~y						0*	0
						(0)	(0)

Table 3. (*Continued*).

Booking intention	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**
Supply_Property~y							0.36***
							(0.12)
_cons	118.55***	135.14***	−1.71	−1.71	−1.71	−5.23	1.44
	(2.64)	(4.61)	(5.44)	(5.44)	(5.44)	(5.83)	(6.21)
Observations	1238	1238	1238	1238	1238	1238	1238
R-squared	0	0.02	0.47	0.47	0.47	0.47	0.47

Standard errors are in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Analysis and findings

Model 1 introduces property quality as an independent variable, revealing a positive correlation (0.06) with booking intention. This supports existing literature emphasising the importance of accommodation quality in influencing guests' booking decisions (Enz, 2010). Model 2 adds reputation, showing a positive correlation (0.08) with booking intention. This aligns with research highlighting the significant impact of reputation on consumer choices in the hospitality sector (Cheung and Thadani, 2012). Unit price, introduced in Model 2, exhibits a negative correlation (−0.07), suggesting that higher prices are associated with reduced booking intention, a concept consistent with pricing sensitivity in the industry (Kock et al., 2016).

Model 3 introduces unit price as an independent variable in the hospitality sector, revealing a positive correlation (0.02, $p < 0.01$). This suggests that higher accommodation prices correspond to increased booking intention, aligning with pricing strategy theories. However, careful interpretation is needed due to potential price sensitivity.

The subsequent models (4–7) build upon this foundation by introducing additional variables. The consistent positive correlation (232.44) between supply and booking intention in all models underscores the influential role of supply factors, such as room availability × occupancy rate, in shaping guests' decisions (Sigala, 2017). The inclusion of interaction terms in Models 6 and 7 (unit price_property quality and supply_property quality) further refines the analysis, emphasising the complexities between these variables in influencing booking intention.

Notably, the consistent *R*-squared value of 0.47 across all models suggests that the chosen variables collectively explain a substantial proportion of the variability in booking intention. This aligns with the theoretical underpinning that a combination of factors, including property quality, reputation, pricing, and supply, contributes to the complexity of booking decisions in the hospitality sector (Enz, 2010; Cheung and Thadani, 2012; Sigala, 2017).

However, the negative correlation observed in Model 7 between property quality and booking intention (−0.09) requires careful interpretation. While this contradicts the expected positive relationship, it may highlight potential moderating effects or context-specific dynamics that merit further investigation. This tends to capture the rural dynamics of this research.

The nested regression models provide a clearer understanding of the factors influencing booking intention in the hospitality sector. The findings align with established literature, contributing to a comprehensive framework for comprehending the complicated dynamics of guest decision-making in the context of accommodation booking.

Table 4. Variance inflation factor.

	VIF	1/VIF
Property quality	9.04	0.102
Supply PropertyQua~y	6.42	0.155
Unit Price Propert~y	4.81	0.208
Unit Price	1.69	0.591
Supply	1.41	0.71
Reputation	1.04	-
Mean VIF	4.39	-
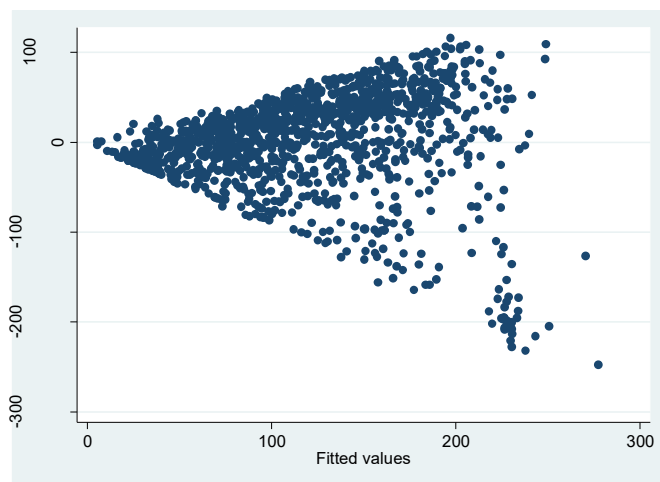
Figure 1. Residuals.
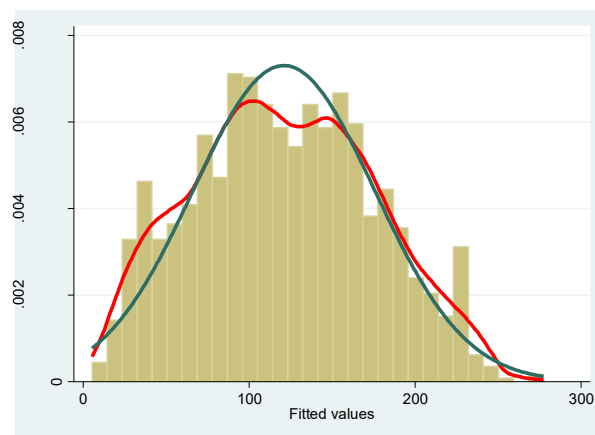
Figure 2. Residual normality check (normal normopts (lwidth (thick)), kdensity kdenopts (lcolor (red)).

The impact of assessing the spread of residuals and conducting a normality

check is pivotal in regression analysis, ensuring the validity and reliability of models (Hair et al., 2019). Analyzing residual spread through scatterplots aids in detecting patterns like heteroscedasticity or nonlinearity, enhancing predictive accuracy (see **Figure 1**) (Montgomery et al., 2012). Similarly, verifying normality, crucial for unbiased coefficients and valid hypothesis tests, involves visual inspection and statistical tests (see **Figure 2**) (Field, 2013). These techniques are essential across disciplines such as economics and healthcare (Greene, 2018), guiding model selection, interpretation, and decision-making. By adhering to these methods, researchers uphold the integrity of regression analysis, yielding trustworthy results for informed decision-making.

4. Discussion/conclusion

The exploration into nested regression models revealed a narrative regarding the influence of Property Quality on Booking Intention in the hospitality sector. For ease of comprehension, the discussion has been cascaded into five dimensions, providing further insight into the analysed regression **Table 3**.

Property quality (PQ):

PQ observed consistent positive coefficient which align with established theories in hospitality management, such as the service quality theory (Parasuraman et al., 1985), this theory posits that superior service quality leads to increased customer satisfaction and loyalty, and customer satisfaction is in congruence with booking intention of the guest. Nonetheless, the negative coefficient in Model 7 introduces an intriguing factor, which should resonate with practitioners than academics, in that economic theories have consistently argued about the diminishing marginal returns from investment owing to extensive investment above maximum price (Lee et al., 2019). This finding suggests that property quality improvements may reach a point of diminishing returns, highlighting the importance of optimising resource allocation in property enhancement efforts.

Reputation:

The diminishing significance of reputation echoes the evolving nature of consumer behavior, the works of Halkiopoulos et al. (2022), Viglia and Acuti (2023) and George et al. (2016) have discussed extensively the nature of consumer psychology and decision-making. This trend suggests a shift from traditional brand loyalty to a more experiential and value-oriented approach to travel decision-making. It also aligns with the concept of changing consumer preferences in response to evolving market dynamics, as theorised in consumer behavior (Solomon et al., 2019).

Unit price:

The nature of price sensitivity aligns with concepts from pricing theory, which suggests that consumer perceptions of value are influenced by both price and quality (Nagle and Müller, 2017). The dual nature of price sensitivity observed in the analysis underscores the importance of incorporating both economic and psychological factors into pricing. Additionally, the findings resonate with research on luxury branding, which highlights the role of price as a signal of quality and exclusivity (Kapferer and Bastien, 2009).

Supply:

The positive correlation between supply and bookings supports the concept of destination attractiveness, as discussed in destination management literature (Pike et al., 2010). This finding underscores the importance of destination development strategies aimed at enhancing supply-side factors to meet growing tourist demand. According to Crouch and Ritchie (1999), it also aligns with theories of destination competitiveness, which emphasise the role of supply-side factors in shaping destination attractiveness and competitiveness.

Interaction effects:

The significant interaction effects highlight the importance of considering contextual factors and their interdependencies, as emphasised in theories of complex systems and dynamic environments (Holland, 1995). The observed interactions between property quality and supply suggest that the impact of property quality on booking intentions is contingent upon destination characteristics. This finding underscores the need for integrated and context-specific approaches to tourism management that account for the dynamic interactions among various factors influencing consumer behavior (Gartner, 2008).

5. Theoretical and practical insights

The empirical findings of this study contribute significantly to several theoretical domains within tourism and hospitality management. Firstly, the validation of the service quality theory (Parasuraman et al., 1985) is evident through the positive impact of property quality on booking intentions. Notably, the identification of a potential quality threshold gives credence to this theory, shedding light on the relationship between service quality and consumer behavior (Shin et al., 2020). This supports the argument that superior service quality is paramount in attracting and retaining customers in the competitive tourism market.

Moreover, the study offers insights into the evolving landscape of consumer behavior, aligning with the evolution of consumer behavior theory. The diminishing significance of reputation in influencing booking intentions signals a shift from traditional brand loyalty towards a more experiential and value-oriented approach (George et al., 2016). This challenges conventional notions of brand allegiance and highlights the importance of delivering meaningful experiences to modern travelers. Additionally, the study enriches pricing theory by unraveling the dual nature of price sensitivity in tourism. By emphasising the interplay between price and perceived value, the findings underscore the complexity of pricing strategies in the industry and advocate for a more holistic approach that considers both economic and psychological factors (Nagle and Müller, 2017; Kapferer and Bastien, 2009).

Furthermore, the study contributes to destination management theory by emphasising the role of destination attractiveness in shaping tourist behavior. The positive correlation between supply and bookings underscores the significance of destination development strategies aimed at enhancing supply-side factors to meet growing tourist demand and enhance destination competitiveness (Pike et al., 2010; Crouch and Ritchie, 1999). Nonetheless, the identification of significant interaction effects underscores the complexity of consumer behavior and highlights the need for

integrated approaches to tourism management. By considering contextual factors and their interdependencies, the study provides valuable insights into the dynamic interactions among various factors influencing consumer decision-making, thereby advancing theories related to complex systems and dynamic environments (Holland, 1995; Gartner, 2008).

In addition, contrary to conventional wisdom, which often positions superior property quality as a key driver of positive booking intentions, this negative correlation challenges these existing assumptions (Ullah et al., 2019; Ahmad and Sharma, 2023). This finding emphasises the complicated nature of location-specific orientation and guest decision-making, urging a re-evaluation of established models within hospitality management.

Theoretically this discovery suggests the need for a more comprehensive understanding of the factors shaping booking decisions. The negative causation should prompt scholars to delve deeper into the psychological and contextual intricacies influencing guest preferences, however much realistically, the urban-rural dynamics, because what is often obtainable in a rural area may differ significantly from urban centres. Nonetheless, this assumption aligns with the broader trend in hospitality research, emphasising the need for context-specific approaches to guest behavior (Huang et al., 2020).

Practically, this revelation has profound implications for hospitality providers. Hence, making strategic decisions that superior property quality guarantees positive booking intentions can no longer be relied upon. Instead, providers are encouraged to adopt a more realistic approach, recognising the dynamics at play might be counterintuitive. The call for improved communication and transparency echoes the findings of Kim and Jogaratnam (2019), that emphasises the importance of aligning customer expectations with service delivery.

Thus, continuous quality improvement has now become even more critical, not just for attracting guests but also for mitigating potential negative impacts on booking intentions. Hospitality providers in the digital circles need to embrace a dynamic approach, adapting to evolving consumer expectations and preferences, agrees with Sigala (2020), which argue that the hospitality industry is increasingly moving towards guest-centric practices, where personalised and adaptive strategies maneuvering are vital (Ndaguba and van Zyl, 2023).

In conclusion, the nested regression analysis has shed light on a compelling and counterintuitive negative correlation between property quality and booking intention in the hospitality sector. This unexpected finding challenges conventional assumptions about the direct positive impact of property quality on guests' booking intentions. Moving forward, future research should focus on unraveling the contextual nuances, psychological complexities, and temporal dynamics that contribute to this relationship. By refining theoretical frameworks, conducting longitudinal studies, and incorporating qualitative insights, researchers can deepen our understanding of guest decision-making processes. In sum, the industry can benefit from strategic communication strategies, dynamic pricing models, and the integration of technology to align property quality with evolving guest preferences, ultimately fostering more effective and tailored approaches to enhance booking intentions.

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References

Agarwal, V., Koch, J. V., & McNab, R. M. (2019). Differing Views of Lodging Reality: Airdna, STR, and Airbnb. Cornell Hospitality Quarterly, 60(3), 193–199. https://doi.org/10.1177/1938965518777218

Ahmad, K., & Sharma, B. K. (2023). Online Satisfaction and Hotel Booking Intentions: An Information System Success Model Perspective. Journal of Quality Assurance in Hospitality & Tourism, 1–33. https://doi.org/10.1080/1528008x.2023.2283502

Baka, V. (2016). The becoming of user-generated reviews: Looking at the past to understand the future of managing reputation in the travel sector. Tourism Management, 53, 148–162. https://doi.org/10.1016/j.tourman.2015.09.004

Bland, J. M., & Altman, D. G. (1999). Measuring agreement in method comparison studies. Statistical Methods in Medical Research, 8(2), 135–160. https://doi.org/10.1177/096228029900800204

CBRE Hotel Americas Research. (2017). Hosts with multiple units—A key driver of Airbnb growth. Available online: https://www.ahla.com/hosts-multiple-units-key-driver-airbnbgrowth (accessed on 9 January 2024).

Clarke, A., & Chen, W. (2009). International hospitality management. Routledge.

Cheung, C. M. K., & Thadani, D. R. (2012). The impact of electronic word-of-mouth communication: A literature analysis and integrative model. Decision Support Systems, 54(1), 461–470. https://doi.org/10.1016/j.dss.2012.06.008

Chuenyindee, T., Ong, A. K. S., Ramos, J. P., et al. (2022). Public utility vehicle service quality and customer satisfaction in the Philippines during the COVID-19 pandemic. Utilities Policy, 75, 101336. https://doi.org/10.1016/j.jup.2022.101336

Crouch, G. I., & Ritchie, J. R. (1999). Tourism, competitiveness, and societal prosperity. Journal of Business Research, 44(3), 137–152.

Dogru, T., & Pekin, O. (2017). What do guests value most in Airbnb accommodations? An application of the hedonic pricing approach. Boston Hospitality Review, 5(2), 1–3.

Evans, N. G. (2019). Strategic management for tourism, hospitality and events. Routledge.

Enz, C. A. (2010). The SAGE handbook of hospitality management. Sage.

Evans, N. G. (2019). Strategic management for tourism, hospitality and events. Routledge.

Field, A. (2013). Discovering statistics using IBM SPSS statistics. Sage.

Foxall, G. R. (2001). Foundations of Consumer Behaviour Analysis. Marketing Theory, 1(2), 165–199. https://doi.org/10.1177/147059310100100202

Gartner, W. C. (2008). Tourism development: Principles, processes, and policies. Van Nostrand Reinhold.

George, G., Dahlander, L., Graffin, S. D., et al. (2016). Reputation and Status: Expanding the Role of Social Evaluations in Management Research. Academy of Management Journal, 59(1), 1–13. https://doi.org/10.5465/amj.2016.4001

Greene, W. H. (2018). Econometric analysis. Pearson.

Grisdale, S. (2021). Displacement by disruption: Short-term rentals and the political economy of "belonging anywhere" in Toronto. Urban Geography, 42(5), 654–680. https://doi.org/10.1080/02723638.2019.1642714

Gunter, U. (2018). What makes an Airbnb host a superhost? Empirical evidence from San Francisco and the Bay Area. Tourism Management, 66, 26–37. https://doi.org/10.1016/j.tourman.2017.11.003

Guo, L., Liu, K., Song, Y., & Yang, Z. (2022). Recovering hotel room sales during the COVID-19 pandemic: Lessons from OTA information using the quantile regression approach. Current Issues in Tourism, 25(1), 94–114. https://doi.org/10.1080/13683500.2021.1900079

Hair, J. F., Black, W. C., Babin, B. J., et al. (2019). Multivariate data analysis. Pearson.

Halkiopoulos, C., Antonopoulou, H., Gkintoni, E., et al. (2022). Neuromarketing as an indicator of cognitive consumer behavior in decision-making process of tourism destination—An overview. In: Transcending Borders in Tourism Through Innovation

and Cultural Heritage. Cham: Springer International Publishing. pp. 679–697.

Holland, J. H. (1995). Hidden order: How adaptation builds complexity. Basic Books.

Huang, D., Coghlan, A., & Jin, X. (2020). Understanding the drivers of Airbnb discontinuance. Annals of Tourism Research, 80, 102798. https://doi.org/10.1016/j.annals.2019.102798

HVS Consulting & Valuation Division of TS Worldwide. (2015). Impact analysis report: Airbnb and impacts on the New York City lodging market and economy. Available online: http://www.hanyc.org/wp-content/uploads/2015/10/HVSImpact-Study-FINAL-Airbnb-and-the-NYC-Lodging-Market-10-27-15-copy.pdf (accessed on 9 January 2024).

Jiang, Y., Zhang, H., Cao, X., Wei, G., & Yang, Y. (2023). How to better incorporate geographic variation in Airbnb price modeling? Tourism Economics, 29(5), 1181–1203. https://doi.org/10.1177/13548166221097585

Jones, N., Lee-Ross, D., & Ingram, H. (1997). A study of service quality in small hotels and guesthouses. Progress in Tourism and Hospitality Research, 3(4), 351–363.

Jung, J., Yoon, S., Kim, S., et al. (2016). Social or Financial Goals? In: Proceedings of the 2016 CHI Conference Extended Abstracts on Human Factors in Computing Systems. https://doi.org/10.1145/2851581.2892328

Kaiser, C., & Freybote, J. (2023). Tenant stock market performance and retail Real Estate prices. Journal of Property Research, 41(1), 23–43. https://doi.org/10.1080/09599916.2023.2254788

Kapferer, J. N., & Bastien, V. (2009). The specificity of luxury management: Turning marketing upside down. Journal of Brand Management, 16(5-6), 311–322. https://doi.org/10.1057/bm.2008.51

Kelley, S., & Asad, D. (2015). Lodging. Airbnb: Deep dive with data from AirDNA. Industry overview. In: Bank of America Merrill Lynch.

Kimmel, A., & Kimmel, A. J. (2018). Psychological foundations of marketing: the keys to consumer behavior. Routledge.

Kock, F., Josiassen, A., & Assaf, A. G. (2016). Advancing destination image: The destination content model. Annals of tourism research, 61, 28–44. https://doi.org/10.1016/j.annals.2016.07.003

Koh, E., & King, B. (2017). Accommodating the sharing revolution: a qualitative evaluation of the impact of Airbnb on Singapore's budget hotels. Tourism Recreation Research, 42(4), 409–421. https://doi.org/10.1080/02508281.2017.1314413

Lee, D. R., Kim, M., & Kim, S. (2019). Quality management and performance of budget hotels: Evidence from South Korea. International Journal of Hospitality Management, 77, 275–284.

Lutz, C., & Newlands, G. (2018). Consumer segmentation within the sharing economy: The case of Airbnb. Journal of Business Research, 88, 187–196. https://doi.org/10.1016/j.jbusres.2018.03.019

Montgomery, D. C., Peck, E. A., & Vining, G. G. (2012). Introduction to linear regression analysis. Wiley.

Nagle, T. T., & Müller, G. (2017). The Strategy and Tactics of Pricing: A Guide to Profitable Decision Making, 6th ed. Routledge.

Ndaguba, E. A., & van Zyl, C. (2023). Exploring bibliometric evidence of Airbnb's influence on urban destinations: emotional solidarity, Airbnb supply, moral economy and digital future. International Journal of Tourism Cities. 9(4), 894–922. https://doi.org/10.1108/ijtc-03-2023-0056

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985). A conceptual model of service quality and its implications for future research. Journal of Marketing, 49(4), 41–50. https://doi.org/10.1177/002224298504900403

Paz, M. D. R., & Rodríguez-Vargas, J. C. (2023). Main theoretical consumer behavioural models. A review from 1935 to 2021. Heliyon.

Pike, S., Ryan, C., & Carson, D. (2010). Destination positioning and the role of the stakeholders: The case of New Zealand's South Island. Journal of Vacation Marketing, 16(1), 29–41.

Proserpio, D., & Zervas, G. (2017). Online reputation management: Estimating the impact of management responses on consumer reviews. Marketing Science, 36(5), 645–665. https://doi.org/10.1287/mksc.2017.1043

Ramseook-Munhurrun, P., Lukea-Bhiwajee, S. D., & Naidoo, P. (2010). Service quality in the public service. International Journal of Management and Marketing Research, 3(1), 37–50.

Schivinski, B. (2021). Eliciting brand-related social media engagement: A conditional inference tree framework. Journal of Business Research, 130, 594–602. https://doi.org/10.1016/j.jbusres.2019.08.045

Shin, Y., Noone, B. M., & Robson, S. K. (2020). An exploration of the effects of photograph content, photograph source, and price on consumers' online travel booking intentions. Journal of Travel Research, 59(1), 120–139. https://doi.org/10.1177/0047287518817399

Sigala, M. (2017). The impact of experience design on customer satisfaction and loyalty: A case study of hotels in Thailand.

Journal of Quality Assurance in Hospitality & Tourism, 18(4), 377–404.

Sigala, M. (2020). Tourism and COVID-19: Impacts and implications for advancing and resetting industry and research. Journal of business research, 117, 312–321. https://doi.org/10.1016/j.jbusres.2020.06.015

Śmietana, K., Konowalczuk, J., & Maszczyk, A. (2014). Rating in the assessment of investment property. Real Estate Management and Valuation, 22(2), 98–107. https://doi.org/10.2478/remav-2014-0021

Solomon, M. R., Dahl, D. W., White, K., et al. (2019). Consumer Behavior: Buying, Having, and Being, 12th ed. Pearson.

Tarde, G. (1935). Theory of the Causation of Economic Behavior. Economic Psychology: Theoretical Foundations, McGraw-Hill, 1997 (Spanish).

Ullah, I., Rukh, G., Zhou, J., et al. (2019). Modeling customer satisfaction in online hotel booking. Journal of Retailing and Consumer Services, 48, 100–104. https://doi.org/10.1016/j.jretconser.2019.01.012

Viglia, G., & Acuti, D. (2023). How to overcome the intention–behavior gap in sustainable tourism: tourism agenda 2030 perspective article. Tourism Review, 78(2), 321–325. https://doi.org/10.1108/tr-07-2022-0326

Wooldridge, J. M. (2015). Introductory econometrics: A modern approach. Cengage Learning.