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The Impact of Host Reputation and Online Reviews on Airbnb Listing Prices: Evidence from Tokyo

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Abstract. Airbnb listings differ in quality, which guests cannot fully judge before booking. This study examines the associations between Superhost status, review scores, review volume, and Airbnb nightly listing prices in Tokyo. It uses the June 30, 2026 Inside Airbnb dataset. The sample has 24,314 reviewed listings with positive prices and complete data. A hedonic ordinary least squares model uses natural log price, with controls for property features, room type, minimum stays, availability, and neighborhood fixed effects. Standard errors are clustered by host. Superhost status is linked to prices about 8.3% higher. A review score that is 0.1 points higher is linked to prices about 1.5% higher. For established listings, an approximate doubling of reviews is linked to prices about 3.8% lower. All three estimates account for the other included variables. The findings show distinct price associations across these three reputation signals in the reviewed Tokyo sample, but the cross-sectional data do not establish causal effects.

Keywords: Airbnb, Superhost, online reviews, hedonic pricing, Tokyo

1. Introduction

Peer-to-peer accommodation has become an important component of the sharing economy and has changed how heterogeneous accommodation is supplied and priced. Evidence from 180,533 Airbnb listings across 33 cities shows that host attributes, property characteristics, rental rules, and review-related variables are associated with listing prices [1]. Such heterogeneity is consistent with the hedonic pricing framework, under which the price of a differentiated product reflects its bundle of characteristics [2]. Tokyo is a particularly relevant setting because its dense urban structure, varied room types, and strong neighborhood differences make short-term-rental pricing especially complex.

Reputation is especially relevant because prospective guests cannot fully evaluate accommodation quality before booking. Information asymmetry can impair market exchange when sellers possess more information about quality than buyers [3], while signaling theory explains how observable cues can reduce such uncertainty [4]. Superhost certification has been associated with willingness to pay and price premiums [5, 6], whereas recent Tokyo research shows that floor area, railway accessibility, nearby attractions, and ward-level location are important for short-term-rental pricing and profitability [7]. However, the joint price associations of Superhost status, review scores, and review volume remain less directly examined in recent Tokyo-specific evidence. Accordingly, the research question is: After controlling for listing and neighborhood characteristics, how are

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Superhost status, review scores, and review volume statistically associated with Airbnb listing prices in Tokyo?

2. Literature review

2.1. Airbnb sharing economy and accommodation pricing mechanisms

Rosen argues that differentiated goods can be understood as bundles of characteristics with implicit values reflected in observed market prices [2]. In this study, hedonic pricing provides the empirical structure for controlling property, rental, and location attributes, whereas information asymmetry and signaling theory explain the mechanism through which reputation information may be associated with price.

In Akerlof's framework, transactions become problematic when product quality is imperfectly observable before exchange [3]. Airbnb's Superhost badge and consumer reviews can therefore be viewed as two distinct forms of reputation information: the former is generated by the platform through certification, whereas the latter is generated by previous guests through their reviews.

2.2. Host reputation and online reviews in short-term rental markets

In the Airbnb context, Lawani et al. find that review-derived measures of quality are related to prices and that disaggregated review information can contain information beyond a single aggregate score [8].

More importantly, a randomized Airbnb experiment conducted by Fradkin and Holtz increased the production of reviews but found no resulting increase in nights sold or total revenue [9]. A recent multidisciplinary review also emphasizes self-selection, behavioral biases, review format, and platform design as factors that can affect the informational value of online reviews [10]. Consequently, review volume may capture popularity and transaction history, but it is also an outcome of prior bookings and may be related to listing age, demand, and price itself.

Platform certification and consumer ratings should likewise not be treated as interchangeable measures. Meister and Reinholtz analyze more than 1.5 million Airbnb ratings and find that Superhost certification can reduce subsequent ratings because certification changes consumer expectations [11].

2.3. Research gap and hypothesis development

The recent Tokyo study used 7,772 Airbnb listings from 2024 and focused primarily on floor area, railway accessibility, tourist attractions, and administrative location in examining short-term-rental pricing and profitability [7].

The evidence reviewed above tends to examine platform certification [5, 6], evaluation quality [8, 12, 13], and review quantity [9, 14] in separate studies, markets, or outcome settings. However, these indicators represent different dimensions of reputation and should not be treated as interchangeable. This study therefore includes all three indicators in the same Tokyo hedonic pricing model.

Because the Superhost badge is a platform-generated quality signal and prior studies associate it with greater willingness to pay and a price premium [5, 6], the following hypothesis is proposed:

H1: Holding the other reputation indicators and observed listing and neighborhood characteristics constant, Airbnb listings hosted by Superhosts are positively associated with higher nightly listing

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prices than listings hosted by non-Superhosts.

More favorable online evaluations have been shown to affect market outcomes [12, 13], while Airbnb-specific evidence connects review-derived quality to price [8]. Therefore:

H2: Holding the other reputation indicators and observed listing and neighborhood characteristics constant, a higher average review score is positively associated with Airbnb nightly listing price.

Although prior evidence indicates that the value of review quantity varies across settings [9, 14], the signaling argument generates a testable ex ante positive prediction:

H3: Holding the other reputation indicators and observed listing and neighborhood characteristics constant, greater online review volume is positively associated with Airbnb nightly listing price.

3. Research methodology

3.1. Data source and variable measurement

Because the raw price distribution is strongly right-skewed, with a median of JPY 20,300 and a maximum of JPY 5,449,800, the natural logarithm of price is used in the principal hypothesis-testing model. The three focal independent variables are host_is_superhost, coded one for a Superhost and zero otherwise, review_scores_rating, measured on Airbnb's five-point rating scale, and review volume, transformed using the natural logarithm of one plus the number of reviews.

Controls include accommodates, bedrooms, bathrooms, room type, minimum nights transformed using the natural logarithm of one plus its original value, availability over 365 days, and neighborhood fixed effects. After positive-price and complete-case requirements, 24,314 listings remain. Because ratings are unavailable for listings without guest reviews, the estimable sample should be interpreted as reviewed listings with complete covariates, rather than all Tokyo Airbnb listings.

Table 1. Descriptive statistics for the analytic sample

Variable Category	Variable	Mean	Std. Dev.	Median
Dependent variable	Nightly listing price (JPY)	28,248.97	52,068.67	20,300
Core dependent variables	Superhost status (1 = yes, 0 = no)	0.576	0.494	1
	Average review score (5-point scale)	4.756	0.315	4.83
	Number of accumulated reviews	44.45	73.65	24
Property characteristics	Accommodates (persons)	4.73	2.99	4
	Number of bedrooms	1.54	1.06	1
	Number of bathrooms	1.17	0.52	1
Rental characteristics	Minimum nights required	3.16	6.81	1
	Annual availability (days per year)	210.74	93.01	218

Note. N = 24,314. Data source: Inside Airbnb Tokyo dataset, June 30, 2026 [15].

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3.2. Analytical methods

The empirical analysis consists of descriptive statistics, Pearson correlation analysis, and multiple linear regression. Correlations provide an initial view of bivariate relationships but are not treated as evidence of conditional or causal relationships. In the analytic sample, winsorized price is positively correlated with Superhost status (r = 0.078) and review score (r = 0.096), while its correlation with logged review volume is slightly negative (r = −0.038). Therefore, variance inflation factors were calculated for the principal numerical regressors. The VIF values ranged from 1.01 to 2.09, and all were below the threshold of 3.

Because several listings can be managed by the same host, conventional heteroskedasticity-robust standard errors may not fully account for dependence among listings managed by the same host. Accordingly, statistical inference is based on standard errors clustered by host_id.

3.3. Regression model specification

$$\ln(\text{Price}i) = \beta 0 + \beta 1\text{Superhost}i + \beta 2\text{Rating}i + \beta 3\ln(1 + \text{Reviews}i) \quad (1)$$

$$+\gamma'\text{X}i + \delta n(i) + \varepsilon i$$

A robustness model uses price winsorized at the 1st and 99th percentiles, corresponding to approximately JPY 4,568 and JPY 158,046.

4. Results and discussion

4.1. Descriptive statistics and correlation analysis

The raw mean price of JPY 28,249 is considerably higher than the median of JPY 20,300, confirming a pronounced right tail. Approximately 57.6% of the analyzed listings are managed by Superhosts, and the average rating is relatively high at 4.756.

4.2. Regression results analysis

Table 2 reports the principal log-price estimates and the winsorized-price robustness specification.

Table 2. OLS regression result: reputation signals and airbnb listing prices

Variable	Log price (Baseline model)	Winsorized price (Robustness check)
Core independent variables		
Superhost	0.0794*** (0.0199)	1,582.15** (766.76)
Average review score	0.1479*** (0.0192)	3,283.87*** (658.36)
ln (1 + number of reviews)	-0.0557*** (0.0055)	-1,794.03*** (200.20)
Property & rental controls		

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Table 2. (continued)

Accommodates	0.0998*** (0.0052)	2,566.26*** (246.68)
Number of Bedrooms	0.0686*** (0.0190)	2,399.61** (968.13)
Number of Bathrooms	-0.0279* (0.0169)	2,499.92*** (622.24)
ln (1+ minimum nights)	-0.1233*** (0.0160)	-87.87 (666.53)
Annual availability_(365 days)	0.00006 (0.00009)	4.66 (3.57)
Fixed effects		
Room-type fixed effects	Yes	Yes
Neighborhood fixed effects	Yes	Yes
Summary statistics		
Observations	24,314	24,314
Adjusted R2	0.435	0.278

*Notes. Host-clustered robust standard errors are in parentheses. Statistical significance is assessed at the 5% level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. All regressions include room type dummies and neighborhood fixed effects. Data source: Inside Airbnb Tokyo dataset, June 30, 2026.*

H1 is supported. The semi-log interpretation indicates that Superhost listings are associated with approximately 8.3% higher nightly prices, conditional on the observed property, room-type, and neighborhood variables.

H2 is also supported. A 0.1-point higher rating is associated with approximately 1.5% higher nightly prices, holding the included variables constant.

H3 is not supported. Contrary to the hypothesized positive relationship, the coefficient on logged review volume is negative and statistically significant at −0.0557 ($p < 0.001$). For established listings, an approximate doubling of accumulated review volume is associated with approximately 3.8% lower nightly price, conditional on the model controls.

The negative review-volume coefficient should not be interpreted as evidence that reviews reduce prices. Reviews accumulate after bookings, which creates an important endogeneity problem. Review volume can therefore reflect prior demand, listing age, market positioning, and price simultaneously.

4.3. Result discussion and practical implications

Superhost certification and higher ratings are both positively associated with premium pricing after controlling for major observable listing characteristics, whereas accumulated review quantity is negatively associated with price.

Maintaining service standards that support high ratings and meeting the performance requirements associated with Superhost eligibility are more closely associated with premium pricing in the observed Tokyo sample.

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5. Conclusion

Superhost status is positively and statistically significantly associated with nightly price, with Superhost listings priced approximately 8.3% higher in the main specification. Average review score also has a significant positive relationship with price: a 0.1-point higher rating is associated with approximately 1.5% higher nightly price. In contrast, greater review volume is associated with lower, rather than higher, prices. An approximate doubling of review volume corresponds to about a 3.8% lower price, meaning that H3 is not supported.

The cross-sectional design identifies conditional associations rather than causal effects, and unobserved host quality, listing age, previous demand, or omitted amenities may influence both reputation and price. Complete-case analysis also excludes unrated and incomplete listings, limiting generalization to the entire Tokyo market. Future research should construct panel datasets from repeated Tokyo snapshots.

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