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Inbound Tourism and Tourists' Preferences for Accommodation Quality*

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Abstract

Inbound tourism policies have increasingly shifted their focus from quantity to quality. To assess the effectiveness of this shift and to identify source countries whose tourists are particularly responsive to quality-oriented policies, this study examines the determinants of foreign tourists' quality preferences using microdata from the Japanese accommodation sector. We find that, on average, foreign tourists accord greater value to accommodation quality than domestic tourists, although considerable heterogeneity exists based on country of origin. Quality preferences tend to be stronger among tourists from high-income countries but decline with distance from Japan. Thus, quality-oriented strategies can be effective even when targeting neighboring countries with relatively lower income levels.

Keywords: Accommodation quality, inbound tourists, quality preference
JEL classification: L15, L83, F14

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Inbound Tourism and Tourists' Preferences for Accommodation Quality

1. Introduction

International tourism has been steadily increasing. Consequently, the contribution of the tourism sector has considerably increased in foreign exchange earnings and diversification of export structures in tourist destinations (UNWTO, 2024). Additionally, tourism activities promote economic development (Brida et al., 2016). Bojanic and Lo (2016) indicate that increase in tourism income is associated with higher GDP per capita, although excessive dependence on tourism can diminish its economic benefits. Consequently, identification of effective policies to attract inbound tourists has attracted considerable attention from academic and policy circles (Enright and Newton, 2005; Mazanec et al., 2007).

However, inbound tourism may adversely impact the welfare of local residents, particularly when tourist arrivals exceed the destination's carrying capacity, inducing environmental degradation and excessive strain on local infrastructure (Capocchi et al., 2020; Dodds and Butler, 2019). Furthermore, overtourism jeopardizes the long-term sustainability of the tourism sector, and tourist dissatisfaction and irreversible environmental damage may ultimately hamper tourism (Cuccia and Rizzo, 2011; Neuts and Nijkamp, 2012). Therefore, many destinations have shifted their focus from increasing the number of inbound tourists to enhancing the quality of tourism experiences (Aguiló et al., 2017; Nava et al., 2023).

The effectiveness of this strategy depends on the extent to which foreign tourists value the quality of tourism services in their travel decisions. Several studies have documented that foreign tourists exhibit stronger preferences for quality than domestic tourists. For example, Castillo-Manzano et al. (2021) state that restaurant quality has a greater impact on attracting foreign than domestic tourists in Spain. However, given the diverse origins of international tourists, improvements in tourism service quality may not be uniformly appreciated across all traveler segments. Indeed, existing research suggests that tourists' preferences for quality vary by country of origin. Nava et al. (2023), for instance, report substantial differences in per capita expenditures even among travelers from within Europe. By targeting tourists with stronger preferences for quality, destination regions can enhance tourism revenue without a proportional increase in visitor numbers. Nonetheless, researchers are yet to rigorously quantify these quality preferences or identify the underlying factors driving such cross-country variation.

This study aims to address this gap in the literature. To this end, we utilize microdata from the Japanese accommodation sector. Japan constitutes an ideal context for this investigation. Owing to prolonged economic stagnation, the government of Japan positioned tourism as a key pillar of economic revitalization (Japan Tourism Agency [JTA], 2007) and enacted several measures, such as the relaxation of visa requirements, throughout the 2000s and 2010s to bolster inbound travel. Consequently, the number of international arrivals surged from around 2010 onward—with the exception of the COVID-19 pandemic period (Figure 1). This boom, however, induced concerns about overtourism in many destination regions (JTA, 2019; Konishi and Saito, 2023), prompting a shift in policy emphasis toward improving the quality of tourism experiences (JTA, 2024). Moreover, owing to Japan's geographic proximity to other Asian economies, the country attracts tourists from diverse economic backgrounds. This provides a context conducive for examining the determinants of quality preferences.

Our main findings are summarized as follows. First, we develop a demand function at the individual accommodation level to estimate tourists' preferences for quality in a manner consistent with the demand theory. The results indicate that, on average, foreign tourists accord approximately 20% greater value to accommodation quality than domestic tourists, lending support to the shift in tourism policy from quantity to quality. However, we also observe substantial heterogeneity in quality preferences across tourists' countries of origin. By linking the estimated preferences to the characteristics of tourists' countries of origin, we identify that higher income levels are positively associated with stronger preferences for quality, whereas greater distance from Japan has a negative effect. These findings suggest that strategies emphasizing quality enhancement may not be so effective in destinations that primarily attract tourists from high-income but distant countries. Conversely, such strategies may be suitable for destinations that receive a large number of tourists from neighboring countries, even if those countries have relatively lower income levels. The estimation results help identify specific source countries whose tourists are more responsive to such strategies.

The remainder of this article is structured as follows. Section 2 presents a review of the relevant literature and outlines the study's contributions. Section 3 discusses empirical methodology and Section 4 details the data and variable construction. Section 5 presents the estimation results. Finally, Section 6 concludes by presenting the findings and their policy implications.

2. Literature review

Tourism demand constitutes a central issue in tourism literature, and many studies have identified key determinants such as price, income, and distance to the destination. Additionally, the quality of tourism services—often proxied by star ratings and facility type in the case of accommodations—also influence demand (Aguiló et al., 2017; Fleischer and Rivlin, 2009b). Given that many accommodation attributes are inherently bundled, hedonic pricing analyses have been employed to disentangle the contribution of individual quality attributes to tourists' utility. For instance, attributes such as accommodation size and affiliation with hotel chains influence tourists' utility and pricing, although the direction and magnitude of these effects vary across studies (Balaguer and Pernías, 2013; Barthélemy et al., 2021; Chen and Rothschild, 2010; Hung et al., 2010; O'Neill and Carbäck, 2011). Furthermore, other intrinsic characteristics of accommodations, along with locational factors, also influence tourists' preferences (Boto-García, 2023; Sánchez-Lozano et al., 2021; Vives and Ostrovskaya, 2024).

While these analyses have advanced our understanding of the quality preferences of the average tourist, they have accorded limited attention to the heterogeneity of such preferences across individuals. Evidence from stated preference studies, however, indicates that tourists' preferences are sufficiently heterogeneous to allow their segmentation into distinct groups (Boto-García et al., 2022; Chen et al., 2019; van Cranenburgh, 2018). If quality preferences vary by tourists' countries of origin, the perceived value of high-quality accommodations—and thus, their willingness to stay in such establishments—may also differ, affecting the effectiveness of quality-oriented strategies at destinations.

Accounting for this heterogeneity is important. Nevertheless, empirical research that explicitly incorporates variation in quality preferences into tourism demand models remains scarce. By contrast, numerous studies—particularly in the context of market segmentation—have examined tourists' characteristics that influence per capita spending on tourism services (Aguiló et al., 2017; Cannon and Ford, 2002; Fleischer and Rivlin, 2009a; Thrane and Farstad, 2012). These studies indicate a positive association between income and per capita spending, as well as significant variation in such spending across tourists' countries of origin. Given that income is considered a key determinant of quality preferences, these findings may indicate that cross-country income disparities yield heterogeneous preferences for quality, thereby contributing to the observed differences in per capita spending among inbound tourists from diverse economic backgrounds.

However, higher accommodation expenditure does not necessarily imply greater preferences for quality for the following reasons, thus limiting the effectiveness of quality-oriented strategies in such contexts. First, according to the demand theory, quality and price jointly determine the quantity of services demanded. After controlling for the effects of accommodation quality on demand, tourists with lower price sensitivity are less deterred from choosing expensive accommodations. In this context, higher spending on accommodation may reflect lower price elasticity rather than stronger quality preferences. Second, accommodation prices exhibit regional variation and tend to be higher in popular tourist destinations, where strong demand exerts upward pressure on prices (Baldassin et al., 2017). Consequently, per capita spending captures not only tourists' quality preferences but also destination-specific demand-side conditions, making it difficult to isolate quality preferences from observed spending patterns. Third, accommodation prices are also shaped by supply-side factors. As pricing is influenced by the productivity of accommodation providers, higher prices may result from inefficiencies in service provision rather than from superior service quality. These considerations highlight the need for a theoretically grounded measure of quality preferences. To address this issue, we develop a demand model that disentangles the effects of quality and price, and apply it to properly delineated regions that correspond to underlying tourism markets.

Identifying accommodation quality based on a demand model constitutes an additional contribution to the literature. Generally, it is challenging to evaluate service quality. Therefore, many studies rely on star-based classification systems as a proxy for accommodation quality, typically identifying a positive relationship between prices and star ratings (Abrate et al., 2011; Israeli, 2002; Thrane, 2005). However, such official classification systems are not always available across all markets, and the discrete nature of star ratings often results in substantial overlap in service quality between adjacent categories. To address this limitation, Núñez-Serrano et al. (2014) propose a continuous measure based on multiple accommodation attributes. In contrast, the present study employs a quality measure derived from the estimation of a demand function, which remains applicable even in the absence of detailed attribute data. By examining its correlation with accommodation attributes commonly associated with quality, we confirm that the estimates serve as a reasonable measure of accommodation quality. Moreover, as a continuous metric, this measure enables precise comparisons of accommodation quality than conventional star-based classifications.

In summary, the contribution of this study is twofold. First, by disentangling the effects of quality and price in estimating accommodation demand, it enables a more precise assessment of inbound tourists' quality preferences and a more rigorous identification of factors contributing to their heterogeneity. Second, it introduces a quality measure for accommodations that is more broadly applicable than conventional star-based rating systems.

3. Methodology

3.1 Accommodation demand function

Consider the following utility function for tourist i from country c, who visits region r in year t and stays at accommodation h (Berry, 1994):

(1) $$V_{iht} = \Lambda_{cht} + \alpha_1 p_{ht} + \varepsilon_{iht},$$

where, $c = 0$ denotes a Japanese (i.e., domestic) tourist, and $c = 1, \dots, C$ represents individual foreign countries. Alternatively, we use F in place of $c = 1, \dots, C$ to denote foreign tourists, aggregated across all countries of origin. The index $h = 1, \dots, H_{rt}$ denotes the set of available accommodations in region r at time t.

Λ_{cht} in Equation (1) is the perceived quality of accommodation h in year t, and

p_{ht} represents the price. The parameter α_1 captures the price sensitivity of tourists, and is expected to be negative, implying that tourists derive higher utility from staying in accommodations that offer higher quality at lower prices. The subscript c on Λ_{cht} indicates that the effect of accommodation quality on the utility of tourist i varies by the tourist's country of origin. Specifically, we define $\Lambda_{cht} \equiv \theta_c \Omega_{ht}$, following Khandelwal (2010), where θ_c is the quality preference of tourists from country c, and Ω_{ht} is the intrinsic quality of accommodation h in year t. Finally, ε_{iht} is an error term.

Suppose that tourists choose the accommodation that provides the highest utility. If the error term ε_{iht} follows a Type I extreme value distribution, the market share s_{cht} of accommodation h in region r and year t among tourists from country c is expressed as:

(2) $$s_{cht} \equiv \frac{Q_{cht}}{\sum_{h=1}^{H_{rt}} Q_{cht}} = \frac{exp(\Lambda_{cht}+\alpha_1 p_{ht})}{\sum_{h=1}^{H_{rt}} exp(\Lambda_{cht}+\alpha_1 p_{ht})},$$

where, Q_{cht} denotes the number of annual overnight stays by tourists from country c at accommodation h in year t. To illustrate the relationship between quality and price, consider a case where an accommodation improves its intrinsic quality by $\Delta\Omega_{ht}$. Equation (2) indicates that s_{cht} remains unchanged as long as $\theta_c \Delta\Omega_{ht} + \alpha_1 \Delta p_{ht} = 0$. This suggests that tourists will attain the same level of utility as before the quality improvement, even if the price increases by $-\theta_c \Delta\Omega_{ht}/\alpha_1$. In other words, the higher the quality preference (θ_c), the more the accommodation can raise its prices following a quality improvement. Importantly, even when θ_c is relatively modest, the accommodation can still charge higher prices if its guests exhibit lower price sensitivity (i.e., smaller $|\alpha_1|$). In summary, comparing only the price levels of accommodations chosen by tourists is insufficient to determine the strength of their quality preferences.

Let s_{c0t} represent the market share of accommodations in region r and year t that are not included in the analysis. Following Berry (1994), we normalize the mean utility from staying at these outside options to zero. As a consequence of this normalization, the resulting estimates of perceived quality are only comparable across accommodations within the same region and year. Taking the logarithm of both sides of Equation (2) and of the corresponding equation for s_{c0t}, and then computing the difference between them yields:

(3) $$\ln s_{cht} - \ln s_{c0t} = \Lambda_{cht} + \alpha_1 p_{ht}.$$

Following Khandelwal (2010), we decompose Λ_{cht} into λ_{ch}, λ_{crt}, and λ_{cht}. The term λ_{ch} captures the time-invariant component of tourism service quality, realized through physical features of the accommodation, such as buildings and rooms. λ_{crt} reflects temporal changes in quality common to all accommodations locating in region r. Finally, λ_{cht} captures temporal changes in quality specific to accommodation h. With this decomposition, Equation (3) is reformulated as:

(4) $$\ln s_{cht} - \ln s_{c0t} = \alpha_1 p_{ht} + \lambda_{ch} + \lambda_{crt} + \lambda_{cht}.$$

In estimating Equation (4), we treat λ_{ch} and λ_{crt} as fixed effects, and λ_{cht} as a disturbance term. This implies that λ_{cht} captures not only temporal changes in quality specific to accommodation h, but also demand shocks experienced by accommodation h in year t. Consequently, the ordinary least squares (OLS) estimation of Equation (4) may yield inconsistent results because of potential endogeneity arising from the correlation between price and demand shocks. To address this issue, we employ an instrumental variable (IV) approach using quantity-based total factor productivity (TFPQ), estimated from a production function for accommodations, as an instrument for price. As more productive accommodations can lower their prices, TFPQ is expected to be negatively correlated with prices. Details on the production function estimation are provided in the Appendix A.

However, accommodations may temporarily enhance service quality through intensive use of labor (Beneki et al., 2016; Hung et al., 2010; Wang et al., 2006). If such quality improvement through input intensification induces a decline in measured TFPQ, as documented by Arbelo-Pérez et al. (2017), TFPQ may become correlated with λ_{cht}, violating the exclusion restriction and resulting in inconsistent estimates. To address this concern, we include L_{ht}, the number of employees at accommodation h in year t, to control for quality changes driven by labor input intensity:

(5) $$\ln s_{cht} - \ln s_{c0t} = \alpha_1 p_{ht} + \alpha_{c2} \ln L_{ht} + \lambda_{ch} + \lambda_{crt} + \lambda_{cht}.$$

After controlling for L_{ht}, the IV estimation of Equation (5), using TFPQ as an instrument, yields consistent estimators, provided that supply-side shocks reflected in TFPQ are uncorrelated with demand-side shocks.

A comment is in order. The municipality constitutes the smallest geographical unit available in this study. However, as an administrative unit, a municipality is not necessarily equivalent to a tourism market. In the proposed model, a region is defined as an area within which tourists choose the accommodation that maximizes their utility from among the available options. In other words, regions should be delineated such that all accommodations within a region are accessible within a day's travel for the average tourist. However, no tourism-specific regional classification that satisfies this criterion is readily available. As an alternative, this study follows Adachi et al. (2021), who define commuting zones based on inter-municipality commuting patterns. As these zones reflect the availability and connectivity of public transportation, it is reasonable to assume that they also approximate the feasible travel range within a single day.

3.2 Quality preferences

Given the market shares s_{cht} and s_{c0t}, as well as the accommodation price, perceived quality Λ_{cht} can be obtained as the residual from Equation (5):

(6) $$\widehat{\Lambda}_{cht} \equiv \ln s_{cht} - \ln s_{c0t} - \hat{\alpha}_1 p_{ht},$$

where, the hat indicates estimates. Note that $\hat{\alpha}_{c2} \ln L_{ht}$ is not subtracted in Equation (6) because it is assumed to capture temporal variations in accommodation quality.

As Ω_{ht} and θ_c cannot be separately identified from Λ_{cht}, it is not possible to directly compare quality preferences between foreign and domestic tourists. Instead, by comparing the perceived quality of a given accommodation in a given year between the two groups, as shown in Equation (7), we can infer the quality preferences of foreign tourists relative to those of domestic tourists:

(7) $$\widehat{\Lambda}_{Fht} = \delta_F \widehat{\Lambda}_{0ht} + \xi_{Fht},$$

where, ξ_{Fht} is a disturbance. A value of $\delta_F\left(= \widehat{\Lambda}_{Fht}/\widehat{\Lambda}_{0ht} = \hat{\theta}_F/\hat{\theta}_0\right)$ greater than one indicates that foreign tourists accord greater importance to accommodation quality in their lodging decisions compared to domestic tourists.

Next, Equation (8) utilizes perceived quality measures disaggregated by tourists' countries of origin to evaluate the quality preferences of tourists from individual country c relative to those of domestic tourists:

(8) $$\widehat{\Lambda}_{cht} = \left(\sum_{j=1}^{C} \delta_j D_j\right)\widehat{\Lambda}_{0ht} + \xi_{cht}, c = 1, \ldots, C,$$

where, D_j is a dummy variable equal to one if $j = c$, and zero otherwise. As before, a value of $\delta_j > 1$ indicates that tourists from country j exhibit stronger preferences for quality than domestic tourists.

Finally, Equation (9) reformulates Equation (8) to identify the determinants of cross-country variation in quality preferences:

(9) $$\widehat{\Lambda}_{cht} = (\beta_0 + \beta_1 \ln GDPpc_c + \beta_2 \ln dst_c)\widehat{\Lambda}_{0ht} + \xi_{cht}, c = 1, \ldots, C,$$

where, $GDPpc_c$ denotes the per capita GDP of country c, and dst_c is the geographic distance from country c to Japan. The income level of importing countries is a key determinant of quality preferences in the context of international trade (Baldwin and Harrigan, 2011; Manova and Zhang, 2012). However, unlike goods that can be delivered to consumers in importing countries, tourism services must be consumed at the site of production, thereby limiting access to individuals who can afford the cost of travel. The high transportation costs associated with long-distance travel constrain tourists' overall budgets (Matsuura and Saito, 2022; Morley et al., 2014) and will, in turn, diminish their willingness to pay for high-quality services. Accordingly, we expect $\beta_1 > 0$ and $\beta_2 < 0$, implying that tourists from higher-income countries place greater value on accommodation quality, while higher transportation costs, proxied by geographic distance, constrain tourists' budgets and thereby diminish their willingness to stay in high-quality accommodations.

4. Data and variable construction

This study combines two sources of establishment-level data: the *Accommodation Travel Statistics Survey* (hereafter, "the survey") published by the JTA, and the *Economic Census for Business Activity* (hereafter, "the census") jointly published by the Ministry of Internal Affairs and Communications (MIC) and the Ministry of Economy, Trade and Industry (METI).

The survey is conducted on a monthly basis and covers all accommodation establishments with 10 or more employees, a one-third random sample of those with between five and nine employees, and a one-ninth random sample of those with fewer than five employees. It collects monthly data on the number of overnight stays and room used, along with information on the number of employees, guest capacity, and number of rooms as of January 1 of the survey year. For establishments with 10 or more employees, the number of overnight stays is disaggregated by tourists' nationality, covering 15 countries and regions: Australia, Canada, China, France, Germany, Hong Kong, India, Malaysia, Russia, Singapore, South Korea, Taiwan, Thailand, the United Kingdom, and the United States. Although this set of countries is limited, it accounted for approximately 92% of all foreign visitors to Japan in 2016 (Japan National Tourism Organization [JNTO], 2025).

By contrast, the census, which covers the universe of accommodation establishments in Japan, is not conducted on an annual basis; data are available for 2012 and 2016. It provides establishment-level economic data, including annual sales from accommodation services in the preceding year. Accordingly, we estimate the demand function for accommodation services for the years 2011 and 2015. The census also includes information on establishment characteristics, such as the number of employees by contract types (e.g., full-time vs. part-time, or permanent vs. fixed-term), the availability of online booking services, and affiliation with hotel chains.

For the estimation of the demand function, the number of overnight stays at each establishment is aggregated on an annual basis. The number of annual overnight stays in a given region and year—used to calculate the market share—is estimated as a weighted sum of reported values, following the methodology outlined in the survey documentation. We estimate the average price for each accommodation by dividing its annual sales (from the census) by the corresponding number of annual overnight stays (from the survey). To mitigate the influence of outliers, we exclude observations in the top or bottom 1% of the estimated price distribution. Finally, per capita GDP for 2011 and geographic distance to Japan for each country and region are obtained from the CEPII Gravity database (Conte et al., 2022). Table 1 presents summary statistics for the variables, and Appendix B discusses the representativeness of the data.

5. Estimation results

5.1 Demand function estimates

Table 2 reports the estimation results of the accommodation demand function, as specified in Equation (5), for the years 2011 and 2015. Column (1) presents results based on the number of overnight stays aggregated across all tourists, irrespective of their countries of origin c, for each accommodation. In the first-stage estimation, TFPQ has a negative effect on price, as expected. The first-stage F-statistic exceeds the conventional threshold of 10, indicating that weak instrument bias is unlikely to pose a significant concern. The negative and statistically significant coefficient on price suggests that tourists tend to avoid higher-priced accommodations when perceived quality is held constant. The mean price elasticity of demand, calculated by multiplying the estimated price coefficient by the average accommodation price, is greater than one, implying that an increase in price would induce a decline in sales.

Next, we divide the sample into foreign (F) and domestic ($c = 0$) tourists and estimate Equation (5) separately for each subsample. In the foreign subsample, the number of overnight stays is aggregated across all foreign tourists, regardless of their countries of origin. The number of observations in Columns (2) and (3) is smaller than that in Column (1) because we restrict the sample to accommodations that host both domestic and foreign tourists, thereby enabling a direct comparison of quality preferences between the two groups. The results in Columns (2) and (3) show that price has a negative and statistically significant effect on demand in both subsamples. More importantly, we cannot reject the null hypothesis that the price coefficients are equal between foreign and domestic tourists. This suggests that differences in lodging decisions between the two groups are primarily driven by differences in accommodation quality preferences, rather than by differences in price sensitivity.

Finally, we assess the extent to which tourists' quality preferences vary by country of origin. Estimating the demand equations separately for each country c, $c = 0,1,\dots,C$, however, results in low first-stage F-statistics in most cases, raising concerns about potential weak instrument bias. To address this issue, we impose the assumption that the price coefficient is identical across countries—an assumption partially supported by the results in Columns (2) and (3)—while allowing all other parameters and fixed effects to vary by country. Specifically, Equation (5) is reformulated as:

(10) $$\ln s_{cht} - \ln s_{c0t} = \alpha_1 p_{ht} + \sum_j \alpha_{j2} D_j \ln L_{ht} + \lambda_{ch} + \lambda_{crt} + \lambda_{cht}, c = 0,1,\dots,C,$$

where, D_j is a dummy variable equal to one if $j = c$, and zero otherwise. As shown in Column (4), this specification yields a large first-stage F-statistic. The price coefficient is estimated to be negative and statistically significant, with a magnitude that is statistically comparable to those in Columns (1) through (3), once standard errors are taken into account.

5.2 Quality preference determinants

After estimating the demand functions, we apply Equation (6) to derive the perceived quality for each accommodation-year observation. Although only establishments that appear in both census years are used in estimating Equation (5), Equation (6) can be applied to those appearing in only one of the two census years. Consequently, the number of observations in the subsequent analyses exceeds that reported in Table 2.

Before evaluating tourists' quality preferences, Table 3 assesses the validity of the constructed variable as a measure of accommodation quality by showing its correlation with various accommodation attributes commonly associated with quality. As the variable reflects not only the intrinsic quality of accommodation (Ω_{ht}) but also tourists' quality preferences (θ_c), Table 3 employs the perceived quality for all tourists, based on estimates from Column (1) of Table 2. The results demonstrate that perceived quality is positively correlated with accommodation price and size, as measured based on the number of employees and guest capacity. The survey asks accommodations to classify their facility type into one of four categories: Japanese-style hotels, resort hotels, economy hotels, and full-service hotels. We find that perceived quality tends to be higher for resort and full-service hotels and lower for economy hotels. Moreover, perceived quality is positively associated with the share of full-time permanent workers, the availability of online booking services, and affiliation with hotel chains. Overall, the estimated perceived quality appears to serve as a reasonable measure of accommodation quality.

Table 4 quantifies the extent to which tourists' quality preferences vary by country of origin and examines the determinants underlying these variations. Column (1) presents the estimation results of Equation (7). It shows that, on average, the perceived quality reported by foreign tourists, aggregated across countries of origin, is 1.2-times higher than that reported by domestic tourists for the same establishment in the same year. This suggests that foreign tourists exhibit stronger preferences for accommodation quality. Quantitatively, they are willing to pay 20% more than domestic tourists for accommodations that offer improvements in intrinsic quality.

Column (2), which presents the estimation results of Equation (8), compares quality preferences across countries of origin. We find that tourists from several Asian countries and regions, such as China, Hong Kong, South Korea, and Taiwan, tend to exhibit stronger preferences for accommodation quality relative to domestic tourists. While tourists from the United States also display relatively stronger preferences, those from European countries show levels of preference that are broadly comparable to those of domestic tourists.

The estimation results of Equation (9) presented in Column (3) reveal that preferences for accommodation quality increase with the per capita GDP of tourists' countries of origin. This finding aligns with those of previous studies documenting a positive relationship between tourist income and per capita tourism expenditure. In contrast, these preferences decline with geographic distance from Japan. Given that tourism services must be consumed at the destination, high transportation costs associated with long-distance travel may diminish the willingness of tourists from distant countries to choose high-quality accommodations. Alternatively, geographic distance from Japan may capture cultural proximity between tourists' home countries and Japan. If quality preferences are partly shaped by cultural familiarity, tourists from distant countries may find it difficult to accurately evaluate the quality of tourism services in a culturally unfamiliar context, thereby exhibiting weaker quality preferences compared to tourists from neighboring countries.

Note that the results in Column (3) can be applied to countries not included in the analysis to infer the average quality preferences of tourists from those countries, offering useful implications for targeting tourists with stronger preferences for quality. For example, consider a country whose per capita GDP or distance from Japan exceeds the respective mean by one standard deviation. In this case, the quality preferences of its tourists, relative to those from a country with mean per capita GDP and mean distance from Japan, increase by 1.7% with a rise in per capita GDP and decrease by 4.8% with greater distance, highlighting the non-negligible role of distance in shaping tourists' quality preferences.

5.3 Robustness checks

The analysis confirms that tourists' quality preferences differ based on country of origin and are shaped by both the income level and geographic distance from Japan. Nevertheless, as noted in the methodology section, the validity of our demand function estimation is partly contingent upon the definition of regions. The model assumes that all accommodations within a region are accessible within a day's travel for the average tourist. In this study, regions are defined based on commuting zones. The subsequent discussion considers two cases in which a commuting zone does not fully align with an actual tourism market. First, if the area accessible within a day's travel exceeds the boundaries of a commuting zone, this does not pose a serious concern, as all accommodations within the commuting zone remain within the feasible travel range. By contrast, if the accessible area is smaller than the commuting zone, certain accommodations within the commuting zone may lie outside the feasible travel range. In this latter case, such accommodations should ideally be excluded from the choice set in Equation (2).

To address this potential concern, we re-estimate the model using municipalities as the regional unit, given that they constitute a much finer spatial classification than commuting zones. Specifically, in 2015, Japan had 1,736 municipalities compared to only 265 commuting zones (Adachi et al., 2021). Column (5) of Table 2 presents the corresponding demand function estimates. Using the perceived quality derived from these estimates, Columns (4) and (5) of Table 4 re-quantify tourists' quality preferences by country of origin and examine the determinants underlying these variations. A comparison of the results indicates that our findings—both the demand function estimates and the identified determinants of quality preferences—remain robust under this alternative regional classification.

6. Conclusion

Given the substantial contribution of the tourism sector to exports and economic development in tourist destinations, governments and tourism-related businesses have actively pursued policies and promotional campaigns to attract international tourists. However, the global expansion of international tourism demand has induced overtourism. Consequently, many destinations have shifted their focus from increasing the number of inbound tourists to enhancing the quality of tourism experiences. The validity of this strategy depends on the extent to which foreign tourists value the quality of tourism services. Nevertheless, previous studies have neither rigorously quantified tourists' quality preferences nor examined their underlying determinants.

Using microdata from the Japanese accommodation sector, this study quantifies foreign tourists' preferences for accommodation quality by country of origin in a manner consistent with demand theory and investigates the factors affecting these cross-country variations. To this end, we introduce a quality measure that can be applied even in the absence of star ratings or detailed attribute data. The analysis reveals that while foreign tourists exhibit a level of price sensitivity comparable to domestic tourists, they accord greater importance to accommodation quality. In other words, foreign tourists are more willing to accept higher prices for superior accommodations, as the perceived utility gains justify the additional cost. This tendency is particularly pronounced among tourists from countries with higher per capita GDP but diminishes with geographic distance from Japan.

These findings suggest that shifting the focus of tourism policies from quantity to quality may be less effective in destinations that primarily attract tourists from high-income but geographically distant countries. Instead, targeting tourists from neighboring countries, even those with relatively low income levels, may prove effective. Our estimation results help identify specific source countries whose tourists value quality, thereby providing important implications for governments and tourism-related businesses in targeting tourists with stronger preferences for quality.

Finally, tourists' economic backgrounds vary even within a given country, implying heterogeneity in quality preferences at the individual level. However, owing to data limitations, this study focuses on estimating the average quality preference by country of origin. Future research should explore quality preferences at the individual level to facilitate precise targeting of inbound tourists.

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Table 1. Summary Statistics

Variable	Mean	Std. dev
Market share of accommodation (s_{cht})	0.0267	0.0576
Accommodation price (p_{ht}, 1000 JPY)	11.171	7.788
Quantity-based total factor productivity ($TFPQ_{ht}$)	2.850	0.628
Number of annual overnight stays ($Q_{ht}/1000$)	34.657	56.845
Number of employees (L_{ht})	50.808	94.231
Guest capacity (K_{ht})	190.070	255.657
Share of full-time permanent workers	0.418	0.236
Dummy for chain hotels	0.507	0.500
Dummy for online booking	0.453	0.498
GDP per capita in 2011 ($GDPpc_c$, 1000 USD)	30.866	20.393
Distance from Japan ($dst_c/1000$, kilometers)	6.284	3.722

Source: CEPII, Gravity database, 2022.
JTA, Accommodation Travel Statistics Survey, 2011-2015.
MIC and METI, Economic Census for Business Activity, 2012 and 2016.

Table 2. Demand Function Estimates

Variable	(1) All countries	(2) Japan	(3) Foreign countries	(4) Individual countries	(5) Individual countries
p_{ht}	-0.152***	-0.137***	-0.163***	-0.129***	-0.120***
	(0.0263)	(0.0310)	(0.0565)	(0.0275)	(0.0298)
$\ln L_{ht}$	-0.0886	-0.0709	-0.0796	-0.0107	0.000316
	(0.103)	(0.115)	(0.230)	(0.248)	(0.282)
Region	Commuting zone	Commuting zone	Commuting zone	Commuting zone	Municipality
Excluded instrument					
$TFPQ_{ht}$	-3.677***	-3.511***	-3.511***	-2.604***	-2.828***
	(0.691)	(0.783)	(0.783)	(0.293)	(0.358)
Kleibergen-Paap F statistic	28.28	20.08	20.08	79.08	62.34
Mean price elasticity	-1.771	-1.548	-1.842	-1.417	-1.341
Observations	2,762	2,178	2,178	15,142	11,874

Note: The dependent variable is the log difference between the market share of the focal accommodation and that of accommodations categorized as outside options, measured by country of origin indicated in the table header. Accommodation and region-year fixed effects are included in Columns (1) to (3), while country-of-origin–accommodation and country-of-origin–region–year fixed effects are included in Columns (4) and (5). Furthermore, Columns (4) and (5) allow the coefficients on the number of employees to vary by tourists' county of origin; however, coefficients other than that for the base category are omitted from the table for brevity. The mean price elasticity is calculated as the product of the estimated coefficient on price and the average accommodation price. Heteroskedasticity-robust standard errors are reported in parentheses. ***, **, and * represent statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 3. Relationship between Perceived Quality and Accommodation Attributes

Dependent variable	Coefficient	Std. error	R-squared	Observations
Accommodation price	3.379***	0.0761	0.521	5,547
Log of number of employees	0.447***	0.00806	0.518	5,547
Log of guest capacity	0.371***	0.00827	0.529	5,547
Share of full-time permanent workers	0.0385***	0.00207	0.171	5,547
Dummy for chain hotels	0.0531***	0.00452	0.123	5,533
Dummy for online booking	0.0427***	0.00670	0.158	2,569
Dummy for Japanese-style hotels	0.00609	0.00449	0.250	5,547
Dummy for resort hotels	0.0268***	0.00291	0.157	5,547
Dummy for economy hotels	-0.0660***	0.00390	0.221	5,547
Dummy for full-service hotels	0.0332***	0.00295	0.129	5,547

Note: The dependent variable is indicated in the first column, and the independent variable is the perceived quality of the focal accommodation for all tourists. All specifications include region-year fixed effects. Heteroskedasticity-robust standard errors are reported in parentheses. ***, **, and * represent statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 4. Determinants of Quality Preferences

Variable	(1)	(2)	(3)	(4)	(5)
Perceived quality by	1.191***		1.857***		1.997***
Japanese tourists ($\widehat{\Lambda}_{0ht}$)	(0.00690)		(0.0307)		(0.0447)
$\ln GDPpc_c \times \widehat{\Lambda}_{0ht}$			0.0358***		0.0413***
			(0.00290)		(0.00434)
$\ln dst_c \times \widehat{\Lambda}_{0ht}$			-0.107***		-0.125***
			(0.00390)		(0.00571)
Country of origin dummy$\times \widehat{\Lambda}_{0ht}$					
$Australia \times \widehat{\Lambda}_{0ht}$		1.025***		1.002***	
		(0.0115)		(0.0160)	
$Canada \times \widehat{\Lambda}_{0ht}$		0.965***		0.946***	
		(0.0117)		(0.0157)	
$China \times \widehat{\Lambda}_{0ht}$		1.120***		1.129***	
		(0.00760)		(0.0111)	
$France \times \widehat{\Lambda}_{0ht}$		0.952***		0.933***	
		(0.0112)		(0.0157)	
$Germany \times \widehat{\Lambda}_{0ht}$		0.990***		0.972***	
		(0.0114)		(0.0167)	
$Hong\ Kong \times \widehat{\Lambda}_{0ht}$		1.163***		1.164***	
		(0.0106)		(0.0151)	
$India \times \widehat{\Lambda}_{0ht}$		0.922***		0.893***	
		(0.0127)		(0.0193)	
$Malaysia \times \widehat{\Lambda}_{0ht}$		0.973***		0.950***	
		(0.0127)		(0.0192)	
$Russia \times \widehat{\Lambda}_{0ht}$		0.896***		0.866***	
		(0.0141)		(0.0200)	
$Singapore \times \widehat{\Lambda}_{0ht}$		1.034***		1.023***	
		(0.0117)		(0.0170)	
$South\ Korea \times \widehat{\Lambda}_{0ht}$		1.161***		1.184***	
		(0.00797)		(0.0117)	
$Taiwan \times \widehat{\Lambda}_{0ht}$		1.241***		1.274***	
		(0.00973)		(0.0145)	
$Thailand \times \widehat{\Lambda}_{0ht}$		1.060***		1.062***	
		(0.0112)		(0.0170)	
$United\ Kingdom \times \widehat{\Lambda}_{0ht}$		1.017***		1.022***	
		(0.0114)		(0.0158)	
$United\ States \times \widehat{\Lambda}_{0ht}$		1.135***		1.161***	
		(0.00862)		(0.0129)	
Region	Commuting zone	Commuting zone	Commuting zone	Municipality	Municipality
R-squared	0.870	0.830	0.827	0.719	0.715
Observations	4,641	33,422	33,422	28,616	28,616

Note: Heteroskedasticity-robust standard errors are reported in parentheses. ***, **, and * represent statistical significance at the 1%, 5%, and 10% levels, respectively.

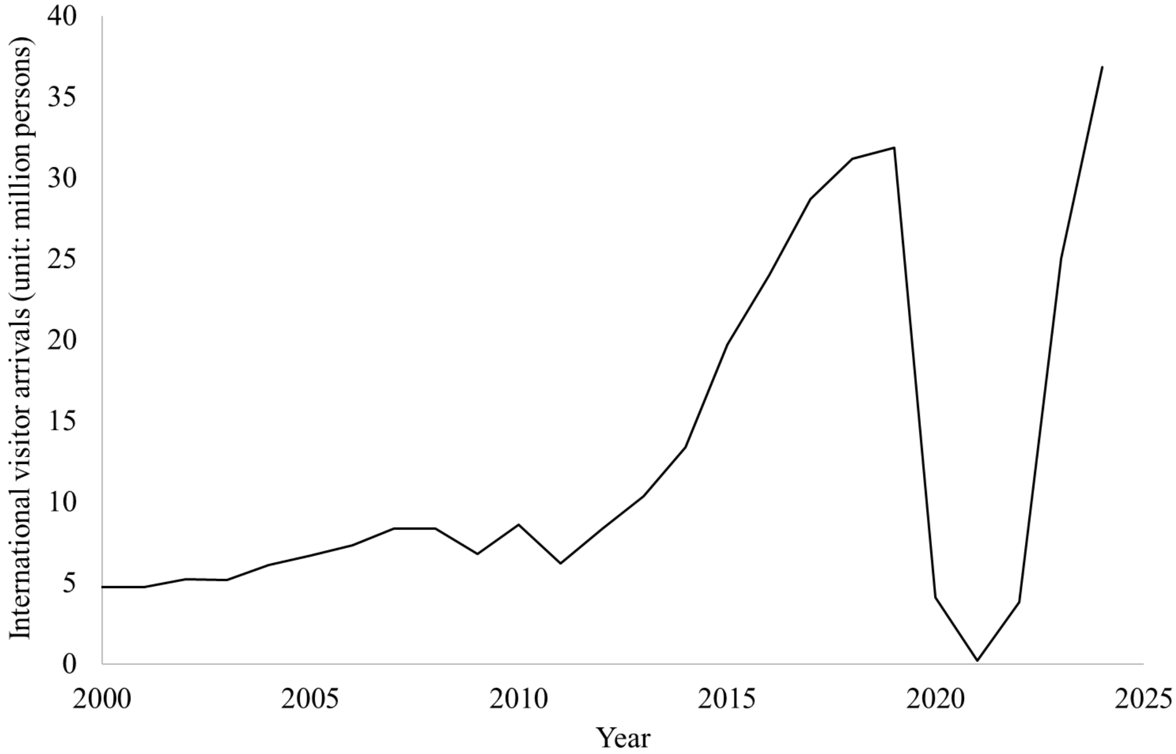

Figure 1. International Visitor Arrivals to Japan
Source: JNTO, Japan Tourism Statistics, 2025.

Appendix A. Production function estimation

To obtain quantity-based total factor productivity (TFPQ), we estimate the following Cobb–Douglas production function:

(A1) $\ln Q_{ht} = \beta_L \ln L_{ht} + \beta_K \ln K_{ht} + \omega_{ht} + \nu_{ht}$,

where, Q_{ht}, L_{ht}, and K_{ht} represent the number of annual overnight stays, number of employees, and guest capacity of accommodation h in year t, respectively. The terms ω_{ht} and ν_{ht}, which denote productivity shocks that are observable and unobservable to the establishments, respectively, jointly constitute TFPQ, that is, $TFPQ_{ht} \equiv \omega_{ht} + \nu_{ht}$. However, if both ω_{ht} and ν_{ht} are treated as disturbances and the equation is estimated via OLS, the resulting estimates are biased because accommodations adjust their labor input after observing ω_{ht}.

To address this issue, Levinsohn and Petrin (2003) propose an estimation method that employs intermediate input as a proxy for ω_{ht}. As long as intermediate input is monotonically increasing in ω_{ht}, including it in the estimation controls for the bias. Ackerberg et al. (2015) extend this approach by addressing potential collinearity in the first-stage estimation. However, our dataset lacks information on intermediate inputs. Therefore, we proxy productivity shocks using the room occupancy rate, calculated as the ratio of rooms used to those available. This proxy is valid if accommodations experiencing positive productivity shocks will attract more guests, and thus, have higher utilization rates.

Table A reports the estimation results based on the *Accommodation Travel Statistics Survey* from 2011 to 2015. Column (1) presents the OLS estimates, while Column (2) shows the estimates obtained using the method proposed by Ackerberg et al. (2015). The number of observations in Column (2) is smaller because the estimation relies on the panel structure of the data. As expected, the labor coefficient is overestimated in the OLS specification.

Table A. Production Function Estimates

Variable	(1)	(2)
$\ln L$	0.238***	0.167
	(0.00512)	(0.157)
$\ln K$	1.160***	1.309***
	(0.00592)	(0.0805)
R-squared	0.793	
Observations	32,046	18,066

Note: The dependent variable is the logarithm of annual overnight stays. Column (1) is estimated by OLS, whereas Column (2) follows the estimation procedure of Ackerberg et al. (2015), with bootstrapped standard errors based on 200 replications. Standard errors are reported in parentheses. ***, **, and * represent statistical significance at the 1%, 5%, and 10% levels, respectively.

Appendix B. Representativeness of the data

The survey reports that approximately 50,000 establishments operate in the Japanese accommodation sector. However, as three-quarters of these establishments have fewer than 10 employees, only approximately 10,000 observations are available each year (Konishi and Saito, 2023). Furthermore, when estimating the production function, we exclude establishments that report zero values for any output or input variables, as well as those with incomplete monthly reporting. After these exclusions, approximately 6,000 annual observations remain.

To compute accommodation prices, we match the survey data with census data. As the two sources employ distinct identifier systems and no concordance table exists to link them, establishments are manually matched based on their names and addresses. Owing to incomplete overlap between the two datasets, the resulting matching rate is approximately 50%. Consequently, after matching with the census, the final sample consists of approximately 3,000 observations per year.

By establishment size, our final sample in 2016 comprises roughly 1%, 20%, 30%, and 35% of all accommodation establishments with fewer than 10 employees, 10–29 employees, 30–99 employees, and 100 or more employees, respectively, indicating that the sample is skewed toward larger establishments. Nevertheless, the sample appears reasonably representative of tourism demand in Japan, as establishments with 10 or more employees accounted for approximately 85% of total overnight stays in 2016.