

*Estratto dal report Ecosister M7_Spoke 5_D5.4.17**30- settembre 2025***Tracing Sustainable Evolution in Peer-to-Peer Accommodation in Emilia-Romagna and Its Relationship with Quality Dynamics in the Hotel Segment: A Municipal-Level Analysis**Andrea Guizzardi¹, Michele Costa², Ercolino Ranieri³¹ Department of Statistical Sciences and Center for Advanced Studies in Tourism (CAST), University of Bologna and Clust-ER Tourism, Emilia-Romagna Regionandrea.guizzardi@unibo.it² Department of Economics, University of Bologna

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³ Xenia S.p.A. SBercolino.ranieri@xenihas.com**Omissis****3.9 THE SUSTAINABILITY OF PEER-TO-PEER TOURISM SUPPLY**

In recent years, the hospitality industry has experienced profound transformations driven by the rapid proliferation of online short-term rental platforms, with Airbnb emerging as a disruptive paradigm-shifting actor. Airbnb's swift growth has reshaped accommodation market dynamics globally, influencing demand structures, pricing strategies, and consumer preferences. Unlike traditional hotels, Airbnb provides a diverse portfolio of lodging options characterized by localized, peer-to-peer arrangements that often deliver more personalized experiences - appealing to travelers seeking authenticity, flexibility, and cost savings.

This disruption prompts two key questions: 1) whether distinct development trends exist across different tourism products and localities (in terms of supply consistency, pricing, and quality), and 2) how the traditional hotel sector adapts to these new competitive pressures.

Most current research on Airbnb's market impact has lacked the spatial resolution necessary to inform regional-level policy - an especially important gap in Italy, where the NUTS-2 level policymakers have significant scope to influence tourism industry dynamics. Furthermore, the literature has predominantly focused on price competition, substitution effects, and market share shifts between Airbnb and hotels (e.g., Zervas *et al.*, 2017; Guttentag, 2015), while service quality - a crucial dimension

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for hospitality competitiveness strongly related to social and economic sustainability of the tourism supply - remains understudied. Quality, encompassing service reliability, customer satisfaction, and experiential factors, represents a vital dimension through which hotels can differentiate themselves beyond price. It influences not only customer loyalty but also the external appearance of hotels and the city skyline, thereby supporting their long-term economic sustainability while contributing to urban decorum and the overall quality of the destination. In this way, tourism could be perceived more positively also by residents, thus highlighting the social and sustainable dimensions of an industry often criticized for its negative social impacts.

We address these gaps by analyzing the local impact of Airbnb with explicit attention to geographic context. We examine Airbnb's quality evolution alongside corresponding changes in traditional hotel quality over time. Our analysis is conducted on a dataset covering approximately 230 municipalities in Emilia-Romagna - one of Italy's most visited NUTS-2 regions - featuring diverse tourism products including coastal resorts, mountain areas, and cultural cities, spanning from 2017 to 2024.

Our objectives are twofold. First, to quantify peer-to-peer market dynamics in Emilia-Romagna, focusing on aspects such as available rental days (inventory management), pricing, and quality - interpreted here as a proxy for the hotels' propensity to innovate. Second, to explore heterogeneity in Airbnb's quality impact across municipalities and tourism contexts, investigating whether trends differ between mass leisure destinations and culturally or nature-based tourist settings.

By adopting a holistic, geographically nuanced, and longitudinal approach over eight years, this study contributes to a more comprehensive understanding of whether peer-to-peer accommodation development is sustainable both socially, at the level of individual destinations and tourism products, and economically, considering how traditional hotels adaptively respond to new forms of competition. While peer-to-peer markets can support tourism development in marginal destinations where hotel supply or investment willingness is low, unregulated growth risks driving up prices and housing shortages, thereby undermining the social sustainability of platforms like Airbnb.

We suggest that sustainability is not a universal truth but should be assessed at the destination or tourism product level, adopting an integrated perspective that also takes into account hotel differentiation strategies centred on quality enhancements and service innovation rather than mere cost competition. Such strategies, aimed at improving service quality, may represent an underexplored benefit of peer-to-peer offerings, as they stimulate destination managers to implement measures that upgrade local services (e.g. transport and parking) which also benefit residents. In other words, our aim is to guide hoteliers toward strategic choices able to sustain competitiveness, while providing policymakers with insights for managing the local externalities associated with the sharing economy in tourism. Ultimately, evaluating Airbnb's complex influence on Emilia-Romagna's tourism supply at both destination and product levels can help both policymakers and hoteliers to better understand current and future sustainability trajectories in the hospitality industry.

Understanding the impact of Airbnb on the tourism and hospitality industries requires an interdisciplinary theoretical lens. This lens must capture competitive dynamics, organizational adaptation, and quality management at both the destination level and within accommodation providers. The local

and product-specific dimension of sustainability in peer-to-peer tourism is highlighted in recent tourism research, where it is shown that unregulated growth can cause socio-economic tensions but also foster development in marginal tourism destinations (Gurran and Phibbs, 2017), where traditional hotel supply is limited or face difficulties in investing. This broadening of access promotes social and economic sustainability by diversifying tourism offerings and supporting local development

However, unregulated growth of peer-to-peer markets also risks negative social externalities such as rising housing costs, reduced availability, and community tensions that threaten the social sustainability of destinations. Therefore, the sustainability of peer-to-peer accommodation markets must be assessed locally through an integrated perspective that includes both competitors' adaptive organizational strategies and place-based governance policies (Gurran and Phibbs, 2017).

Commercial lodging operators, defined as professionally managed hotels and licensed operators, play a crucial role in this ecosystem. They adopt quality-focused differentiation and innovation strategies incorporating sustainable practices. Their investments in service excellence, environmental stewardship, and guest experience can complement peer-to-peer offerings and contribute to a balanced, sustainable tourism system.

This calls for a holistic framework recognizing that sustainability is not one-size-fits-all but contingent on the evolution of local accommodation markets, hotel adaptive capacity, and destination governance managing traditional and peer-to-peer sector interactions. Combining dynamic organizational adaptability, continuous quality improvement, and strategic differentiation with place-based policies provides a pathway for sustainable tourism development.

Dynamic Capabilities Theory (see Teece *et al.*, 1997) offers a foundational framework to understand how firms build, integrate, and reconfigure internal competencies to cope with rapid environmental changes. Hotels confronted by Airbnb competition must develop dynamic capabilities such as digital innovation, flexible service delivery, and rapid customer response. These adaptive strategies lead to service quality improvements that allow hotels to compete on differentiation rather than price alone. Recent research confirms that leveraging dynamic capabilities improves hospitality resilience, innovation, and sustainability performance, especially during disruptive events like the COVID-19 pandemic (see Aladağ, 2023).

Competitive Differentiation Theory (see Porter, 1985) highlights differentiation as a key strategy for achieving superior market position by offering unique, hard-to-imitate value. Facing Airbnb's flexible, authentic, and heterogeneous lodging offers, hotels respond with quality-focused differentiation - implementing standardized cleanliness protocols, technological innovations, sustainability certifications, and curated guest experiences. This multifaceted differentiation maintains hotels' relevance amid growing competition and supports sustainable tourism development. The theory also recognizes that while Airbnb can rapidly expand inventory, hotels' investments in infrastructure and service excellence create high entry barriers and path-dependent advantages that underpin long-term competitive strength.

Extensive Airbnb research has largely focused on price competition and market share shifts, often showing that Airbnb listings exert downward pressure on hotel occupancy and revenues, particularly for midscale and lower-end hotels (Zervas *et al.*, 2017). However, recent meta-analyses reveal these negative

effects to be moderate and diminishing over time, with upscale hotels tending to be less affected (Yang *et al.*, 2022). Still, the strategic hotel responses in service quality remain underexplored in comparison to pricing effects.

Studies analysing guest reviews reveal systematic differences in perceived quality dimensions between Airbnb and hotel stays. Guests typically value Airbnb for experiential authenticity and local host interaction but prefer hotels for professionalism, consistent facilities, and service reliability (Sanchez-Franco and Aramendia-Muneta, 2023). During crises like the COVID-19 pandemic, hotels dynamically adjusted priorities toward cleanliness and safety, illustrating active quality management consistent with dynamic capabilities theory. These findings affirm that quality in accommodation is multidimensional and context-dependent, necessitating nuanced empirical approaches. Integrating these insights with place-based policies, adaptive hotel strategies, and an emphasis on sustainability, supports a comprehensive understanding of Airbnb's complex and evolving role in the accommodation ecosystem.

3.10 DATA AND METHODS FOR THE ANALYSIS OF THE SUSTAINABILITY OF PEER-TO-PEER TOURISM SUPPLY

Our empirical analysis uses a panel dataset from 2017 to 2024, containing monthly observations for 233 Italian municipalities in the Emilia Romagna region, representing different types of tourism destinations (coastal, mountain, cultural cities). For each municipality-month, we collected information on consistency, strategies (inventory and pricing management), and quality ratings related to all properties listed on the Airbnb platform during the period under study. It is important to note that municipalities with a minimal property supply (fewer than 10 properties on average over the 8 years) were excluded.

The data collection was complemented with a dataset obtained through a web scraping engine from the OTA Booking.com website, which enabled us to retrieve quality ratings given by guests for about 921 active 3, 4, and 5-star hotels in Emilia Romagna (83% are not-seasonal hotels). These ratings are daily, spanning from April 2022 to September 2025.

The transition from daily or monthly data to annual data was performed using averages or sums, depending on the context (for example, sums were used for variables like property counts). In the case of hotel quality data, where each review could be linked to the guest's length of stay (LoS), we calculated both unweighted and weighted averages. The unweighted averages treat each review equally, regardless of the size of the hotel or the length of the guest's stay.

This approach may better represent the overall hospitality environment in a destination, capturing the general quality atmosphere that is equally conditioned by small boutique establishments and short-stay guests.

Weighted averages give more importance to larger hotels or reviews from longer-stay guests. Weighting by hotel size (e.g., number of beds) emphasizes the role of large hotels. Their greater strategic flexibility and investment capacity, compared to the collective local hospitality market, allow them to respond differently to possible Airbnb effects, potentially leading to stronger quality improvements or

declines. Weighting by Length of Stay reflects the experiences of tourists who stay longer in the hotel and the destination, resulting in more informed and nuanced quality assessments.

This paper adopts both perspectives to reveal potentially different impacts of Airbnb on localized quality perceptions versus the quality strategies of major hotels. Our choice of quality measures aligns with recent hospitality research, highlighting the importance of tailored metrics that reflect guest heterogeneity and accommodation variety (e.g., meta-analyses showing mixed impacts of Airbnb on hotel performance partly influenced by measurement methods).

In our data analysis, we focused on identifying significant trends by estimating Ordinary Least Squares (OLS) models for each of the 233 municipalities, using the following linear model:

$$Y_{(j,i,t)} = \mu_{(j,i)} + \beta_{(j,i)} t + \varepsilon_{(j,i,t)}$$

where $Y_{(j,i,t)}$ represents the j -th observed variable in municipality $i=1,2,\dots,233$ at year t ; the independent variable t denotes a linear trend. The parameter $\mu_{(j,i)}$ represents an average effect while the key information is provided by the parameter $\beta_{(j,i)}$ whose statistical significance (p -value < 0.10) indicates the presence of a trend in the variable $Y_{(j,i)}$ and whose sign indicates the direction of the trend.

Beta coefficients were estimated again after grouping the 233 municipalities based on their main tourism product offered (identified following the ISTAT classification of municipalities).

3.11 THE ANALYSIS OF THE SUSTAINABILITY OF PEER-TO-PEER TOURISM SUPPLY: MUNICIPALITY-LEVEL RESULTS

We begin the analysis of peer-to-peer accommodation market trends at the municipal level over the last eight years, examining the growth in the number of properties, the primary indicator of changes in the short-term rental supply in Emilia-Romagna region. Figure 5 shows a clear increase in supply, with many more areas in green (positive trends) than in red (negative trends). The Romagna area leads this growth, particularly its coastal destinations, with five municipalities in the top ten. Among the provincial capitals, Rimini, Parma, Reggio Emilia, and Ferrara stand out. The top 20 also include municipalities along the via Emilia – especially east of Bologna – such as Faenza, Imola, and Forlì, where attractiveness is linked not only to tourism but also to strong artisanal business districts. The Apennines in the Bologna and Modena areas also show good growth, while critical situations are mainly concentrated in the western part of the region, including some foothill or Apennine destinations in the provinces of Parma and Piacenza.

These latter municipalities should represent an important asset for developing tourism in provinces where the absence of "standard" tourist products (such as skiing, seaside, or business tourism) could be seen as an opportunity to valorize natural environments and local traditions, for example culinary ones, by promoting slow tourism, a demand segment that often aligns well with the sharing economy concept. DMOs in these areas should exploit this opportunity by enhancing the visibility and integration of peer-to-peer accommodations into broader destination marketing strategies, while also balancing tourism development with social cohesion - this being, together with the natural environment, the unique and irreplaceable asset of slow tourism. Supporting responsible hosting practices and maintaining community

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cohesion are essential for successfully revitalizing short-term rentals in these areas, avoiding rapid tourism expansion that could conflict with slow tourism principles.

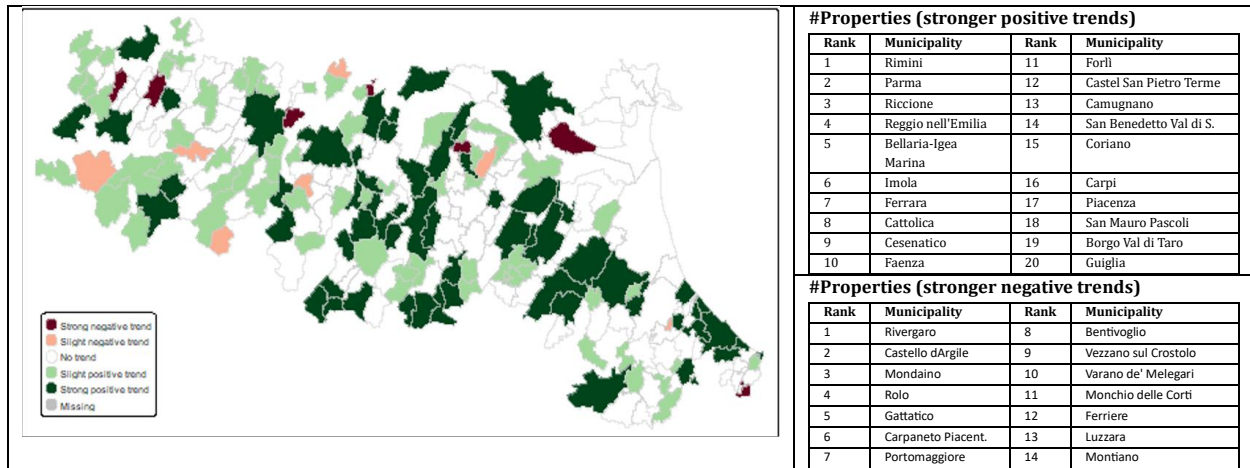


Figure 5 Growth in the number of peer-to-peer accommodations by municipality in Emilia-Romagna (2017–2024). Green indicates positive trends, red negative, and white no trend

While growth is primarily driven by larger destinations, the (generally positive) trend in rental revenue is led by smaller municipalities (see Figure 6) with the notable exception of Bologna that has likely “monetized” the growth of the inbound segment (high spenders) linked to the increase in passengers at its airport. The via Emilia corridor east of Bologna continues to act as a catalyst for short-term rental revenue growth. Among the top 20 municipalities by revenue increase are two spa towns, lowland municipalities near major cities, and hill or mountain locations offering art and cultural attractions. Notably absent are coastal destinations, a mature market whose revenue has remained stable since 2017. The seven municipalities experiencing a revenue decline typically face challenges such as a lack of tourist attractions, limited infrastructure relative to neighboring municipalities, or geographic positions that do not favor tourist flows. Interesting case studies include Gragnano Trebbiense and Agazzano, or Goro and Mesola - neighboring municipalities at opposite ends of the revenue growth ranking. This discrepancy likely reflects differences in service offerings, events, activities, or a broader range of accommodation options addressing diverse price segments and thus attracting a wider and more segmented audience. The other “interesting” gap, between Pellegrino Parmense and its northern municipalities such as Salsomaggiore or Medesano, seems to be explained by the presence of a spa offer.

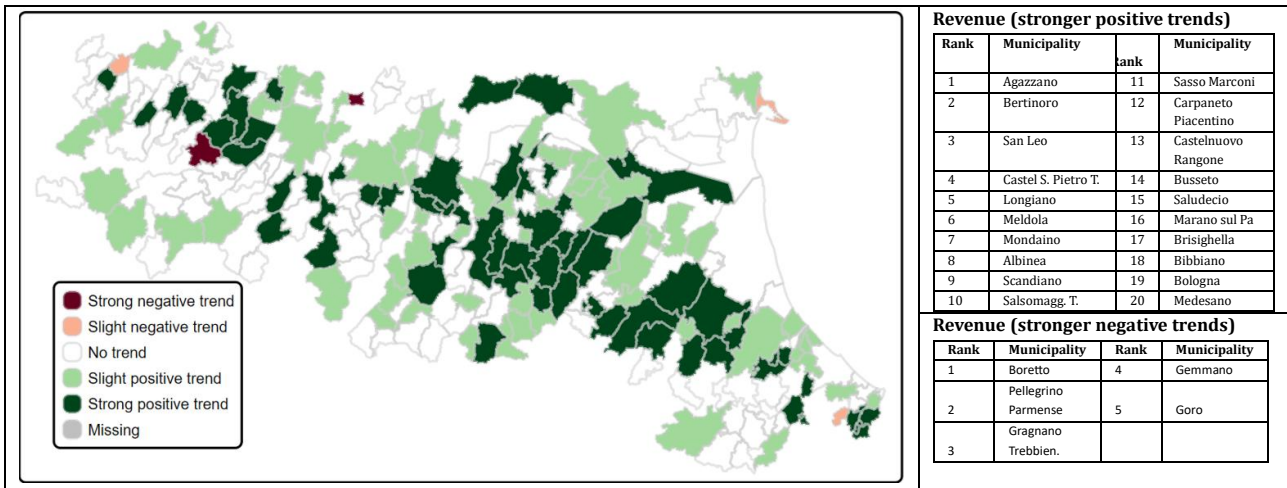


Figure 2 Growth in revenue of peer-to-peer accommodations by municipality (2017–2024). Green indicates positive trends, red negative, white no trend

The dynamics of Average Daily Rate (ADR) (see Figure 7) closely resemble revenue trends, suggesting that municipalities are successfully positioning themselves in the tourism market with attention to economic and social sustainability. Higher prices are achieved by market segmentation, attracting visitors willing to pay more for higher quality accommodations or premium experiences, or by making locations more attractive through investment in infrastructure and services.

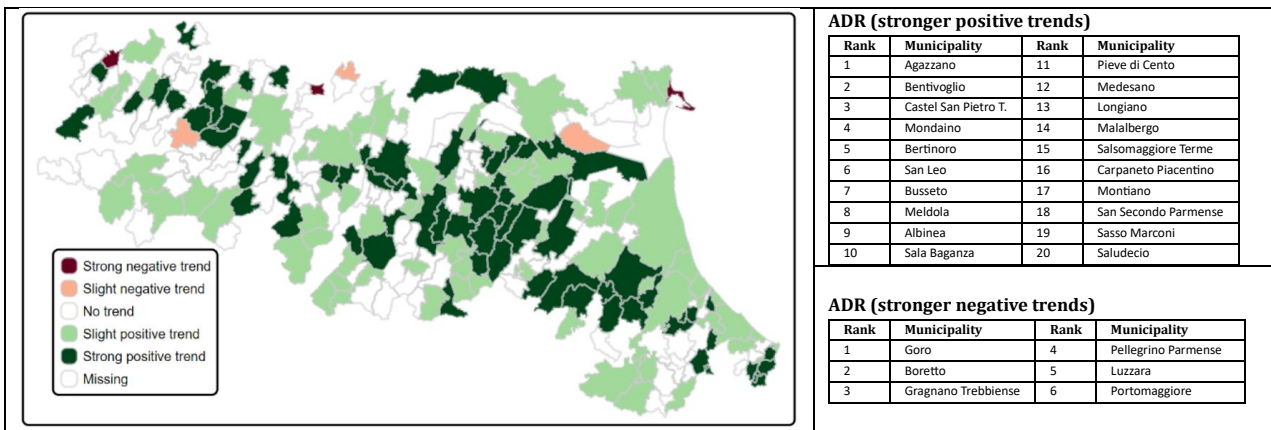


Figure 7 Growth in ADR of peer-to-peer accommodations by municipality (2017–2024). Green indicates positive trends, red negative, white no trend

However, it is important to verify whether the income generated remains within the local community – considering second homes owned by non-residents - and the extent of the local economic impact. These factors often drive perceptions of overtourism, which stem less from congestion and more

from residents' low willingness to tolerate even minor inconveniences caused by tourism when they are not actively engaged in tourism development (they don't benefit from the generated income).

An increase in ADR could potentially lead to a long-term decline in demand, as excessively high prices -if not accompanied by product quality improvements - may discourage tourists. Figure 8 presents an analysis of occupancy rate dynamics, which counters this negative hypothesis. The few (four) critical municipalities are the same showing difficulties with ADR growth, reflecting a consistent relationship between supply and demand (low demand leads to price reductions). Additionally, among positive cases, there is substantial alignment between the trends shown in Figures 7 and 8, although often only one of the two indicators shows a significant trend while the other remains stable.

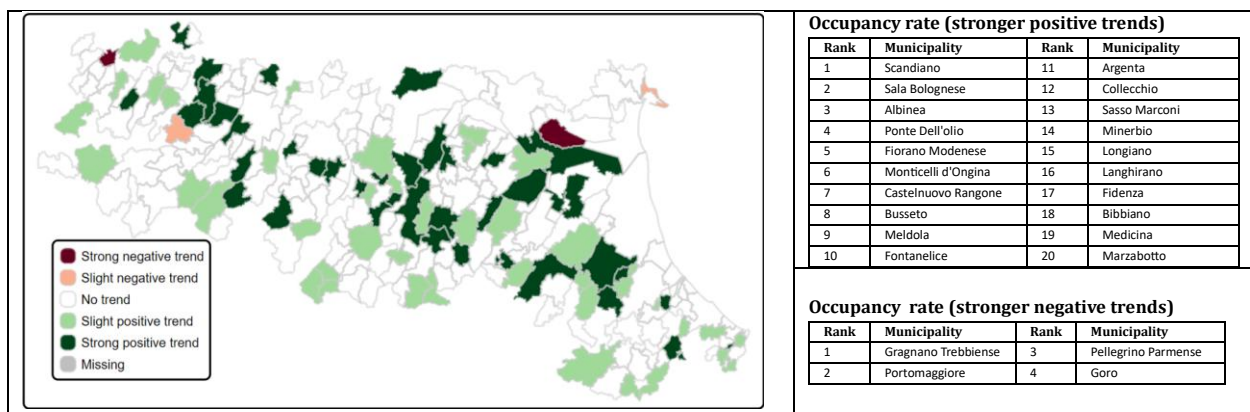


Figure 8 Growth in occupancy rate of peer-to-peer accommodations by municipality (2017–2024). Green indicates positive trends, red negative, white no trend

Figure 9 highlights municipalities with positive trends in either ADR, occupancy rate, or both. Albinea, Busseto, Meldola, Longiano, and Sasso Marconi are "virtuous" municipalities where hosts and DMOs have successfully combined growth in both ADR and occupancy rates. Less favourable cases involve growth in occupancy without a corresponding increase in ADR. Such mismatches, which among others, involve two core municipalities of the motor valley (Maranello and Fiorano Modenese) may result from local, competitive, or market factors. such as increased accommodation capacity (likely commercial, since these municipalities do not appear in the top 20 for property growth) or a gradual shift towards low-cost or last-minute travellers. Local DMOs should monitor these trends to prevent overtourism risks, which are particularly likely when such misalignments occur.

The scenario where ADR grows while occupancy remains stable could reflect strategies by accommodation providers to improve profitability by targeting more profitable market segments or improving service quality, and good DMO practices that enhance brand reputation or promote events and attractions. This assumes inflation is accounted for and that local regulations have not restricted the supply of accommodations - restrictions that would naturally drive ADR increases even if tourist numbers remain unchanged.

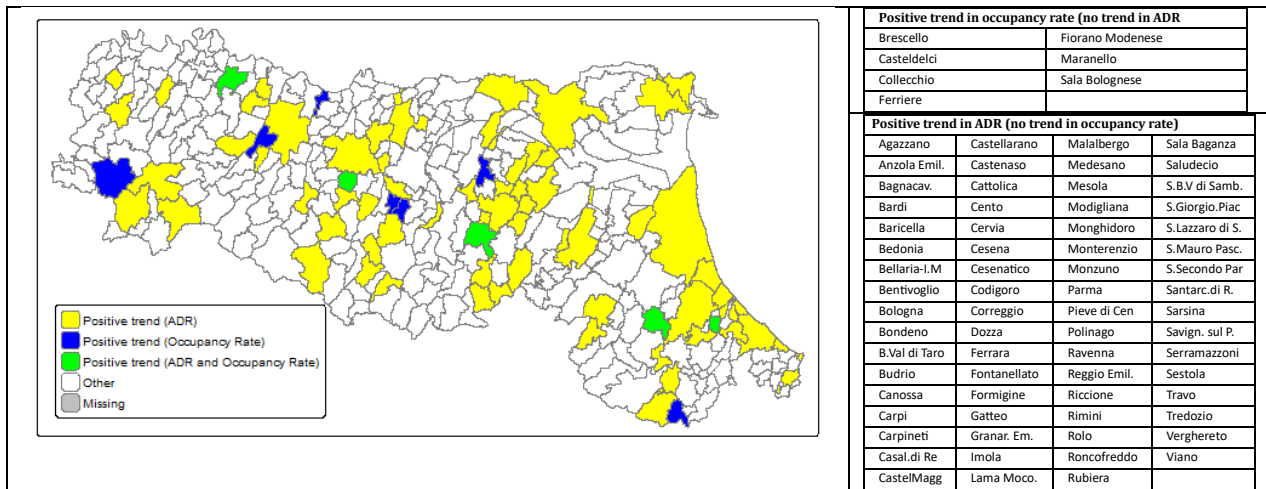


Figure 9 Growth in ADR and occupancy rate (2017–2024): a comparison

3.12 THE ANALYSIS OF THE SUSTAINABILITY OF PEER-TO-PEER TOURISM SUPPLY: PRODUCT-LEVEL RESULTS

In this section, we aim to highlight the heterogeneity in Airbnb trends by considering homogeneous tourism products. Using the official ISTAT classification for the 233 municipalities in our study, we examine the possible presence of a “product type effect” that differentiates the growth of the peer-to-peer market in Emilia-Romagna.

Table 1 reports the observed trends for various variables, distinguishing three main aspects: consistency, strategies, and quality, as well as the six types of tourism products: Tourist municipalities without a clearly defined tourism product (Undefined tourism product), Municipalities with a cultural, historical, artistic, and landscape vocation (Cultural/historical), Coastal municipalities (Coastal), Mountain municipalities (Mountain), Spa/wellness municipalities (Spa/wellness), and Provincial capitals (Large cities).

The table uses green and red cells to indicate significant trend estimates over the eight years considered. Green for positive trends, red for negative. Non-significant trends are shown with empty cells.

Product Dimensions		Undefined tourism product	Cultural/historical	Coastal	Mountain	Spa/wellness	Large cities
Consistency	# Properties	Green	Green	White	Green	White	White
	# Bedrooms	Red	White	White	White	White	White
	Entire home (share)	Orange	White	White	White	White	Orange
	Private apart.(share)	Red	White	White	White	White	Red
	Shared apart.(share)	White	Red	Red	White	White	Red
Strategies (pricing and inventory)	ADR	Green	Green	Green	Green	Green	Green
	Occupancy rate	Green	Green	Green	Green	Green	Green
	# of reservation	Green	Green	Green	Green	Green	Green
	Available days	Red	Red	Red	Red	Red	Red
	Max guests	Red	White	White	Red	White	White
	Minimum stay	White	White	White	White	White	Green
	# of photo	Green	Green	Green	Green	Green	Green
Quality	# of reviews	White	White	White	Green	White	White
	Overall Rating	Green	Green	Green	Green	White	Green
	Cleaning rating	Green	White	White	Green	White	Green
	Location rating	Green	Green	Green	White	White	Green
	Value for money rat.	White	White	Green	White	White	White

Table 1 Trend analysis of peer-to-peer accommodation market variables by tourism product type in Emilia-Romagna (2017–2024). Green for positive trends, red for negative white for no trends

Regarding consistency, findings confirm that the peer-to-peer market growth has mainly occurred in municipalities with a strong historical, artistic, or landscape vocation (including mountain municipalities), where both the number and average size of properties have increased, reflecting rising demand for family and group tourism in natural environments. This growth is possibly also influenced by climate change challenges faced by sunny coastal destinations, which experience high seasonality during the hottest months.

In contrast, the supply has remained stable in coastal, spa, and large cities. The expansion of online travel agencies (OTAs) into the short-term rental market since 2017 may have caused a reduction in Airbnb’s market share in these areas. This, combined with growing demand, could explain why our study does not empirically support the growing rental market negative impact perceived by non-tourists (residents, students, and workers). Instead, we show a reduction in apartment offerings (both entire and shared) in favor of entire home rentals, indicating an increase in quality that matches the positive trends in average daily rates (ADR) observed across all destination types.

Interestingly, destinations without a clearly defined tourism product also show significant growth in the number of listed properties. However, they are the only category where the average property size shows a negative trend. This evidence resumes the growing popularity of platforms for short term rental

and the large abundance of second homes in these destinations raising challenges in ensuring sustainable quality standards. DMOs must closely monitor these trends, as maintaining high-quality offer is crucial for repeat visitation, positive destination reputation.

Regarding trends in pricing and inventory management, the analysis reveals similar patterns across product types. Trends are positive for number of reservations, occupancy rate, and average daily rates (ADR). The lack of differentiation between mature products (coastal) and newer or renewed segments (large and cultural/historical cities) indicates that the peer-to-peer market is still in an expansion phase across all products. This phase likely includes improvements in the capacity to promote individual listings, as supported by the positive trend in the number of photos posted to describe properties.

The opposite trends between demand (increase in the number of reservations) and available days (always negative) suggest a growth in length of stay (LoS) over time. In provincial capitals, the increase in LoS is also associated with a significant raise in minimum stay requirements. This indicates market maturity where hosts optimize availability and pricing to match demand, likely supported by DMO tools and data sharing initiatives. This aspect is also important from a social sustainability standpoint: longer stays and limiting very short stays by increasing minimum stay thresholds guarantee hosts a more stable income flow and lower operation costs. Notably, many hosts in provincial capitals are local residents. This helps preserve residents' quality of life and prevents adverse effects of overtourism. Moreover, longer LoS can avoid abrupt price shocks and maintain customers' positive perceptions of pricing fairness and ethics, an aspect linked by management studies to the destination's image (Choi and Mattila, 2018).

Regarding quality, all destinations except spas show growth in overall quality ratings, indicating increasing host attention to guests and a learning-by-doing process that helps overcome the training gaps of non-professional operators. Quality growth is accompanied by increasing price-related ratings only in coastal destinations, which are the only product category where hosts theoretically still have room to raise their tariffs. This is partly due to listings being increasingly located near tourist attractions, as shown by the rising trend in location ratings. The gap between guests' price expectations and the quality offered by short-term rentals may also be influenced by the presence of a very low-cost hotel supply in these mature destinations, which serves as a strong benchmark shaping price competition.

The spa segment of short-term rentals faces the greatest difficulties in improving quality; all rating dimensions have remained stable between 2017 and 2024. This may be explained by the fact that these destinations attract higher-spending guests with elevated expectations, justifying hotels' strategic investments in quality improvements to differentiate from the short-term rental market. However, it is probably even more important to consider that this segment is difficult for Airbnb because private hosts face significant entry barriers, including the fact that they can't offer internal thermal facilities as hotels can.

To complete our product-level analysis, we examine the relationship between Airbnb prices and quality trends and the quality dynamics of the hotel segment. Hotels are expected to respond to the growth of the peer-to-peer market by embedding continuous improvement into their organizational culture, fostering sustained quality growth that meets guest expectations. This enables hotels to differentiate primarily on quality and avoid price competition.

We measure hotel quality with both an unweighted measure (Q) and a measure weighted by length of stay and hotel size (Q_LoSBed). For Airbnb prices, we use the average ADR. To ensure robustness, the analysis is limited to municipalities with at least three hotels, each having a yearly average of at least ten reviews. The resulting 43 municipalities are divided into two groups based on median hotel quality. Tables 2 and 2a contain, respectively for Q and Q_LoSBed, the average values of these variables by group, alongside average Airbnb prices.

<i>Group</i>	<i>Avg_Q</i>	<i>Avg_ADR</i>
<i>Low-Q cities</i>	<i>7.89</i>	<i>120.61</i>
<i>High-Q cities</i>	<i>8.51</i>	<i>90.66</i>

Table 2 Hotel quality (unweighted) versus Airbnb prices (unweighted)

<i>Group</i>	<i>Avg_Q</i>	<i>Avg_ADR(m)</i>
<i>Low-Q_LoSBed cities</i>	<i>7.88</i>	<i>158.05</i>
<i>High-Q_LoSBed cities</i>	<i>8.48</i>	<i>147.71</i>

Table 2a Hotel quality (weighted by length of stay and hotel size) versus Airbnb prices (weighted)

In both cases, the difference in hotel quality between “low” and “high” cities is modest, indicating that all municipalities generally offer good quality hotels.

However, Airbnb prices behave differently: municipalities with higher hotel quality exhibit lower average Airbnb prices. This suggests that hotels rely on quality differentiation while Airbnb hosts tend to compete more aggressively on price. The quality-price gap is more pronounced when hotel quality is measured without weighting by length of stay and hotel size, meaning that where the destinations have a stronger tourism vocation (and hotels are larger), also private accommodations are able to command higher prices. Conversely, shorter guest stays (e.g., the business segment or others higher-spending customers) enable hotels greater opportunities to invest in quality to differentiate themselves from peer-to-peer offerings.

Additionally, we classify the direction and significance of quality trends using a contingency table (Table 3) that cross-tabulates hotel and Airbnb quality trends in the municipalities. Quality changes over time are detected as described in the methodology section.

<i>Hotel \ Airbnb</i>	<i>Negative</i>	<i>Stable</i>	<i>Positive</i>	<i>Tot</i>
<i>Negative</i>	0	0	1	1
<i>Stable</i>	4	2	11	17
<i>Positive</i>	2	4	19	25
<i>Tot</i>	6	6	31	43

Table 3 Trends in Hotel and Airbnb Quality by Municipality

Out of 43 municipalities, the majority (19, about 44%) exhibit significant improvements in both hotel and Airbnb quality. This pattern suggests a tendency for the two markets to evolve positively in parallel, indicating interdependence particularly in the case of a joint increase in quality. Other combinations are less frequent: 11 municipalities show stable hotel quality with increasing Airbnb quality, while 2 show the reverse. Cases of simultaneous decline or stability in both sectors are rare or absent.

A chi-square test yields a statistic of 2.45, corresponding to a normalized chi-square of 2.9%, implying only minimal dependence and insufficient evidence to reject the null hypothesis of independence. However, the scarcity of negative hotel quality trends warrants cautious interpretation. Still, we observe a positive association between hotel and Airbnb quality trends concentrated in cases of quality improvement. When Airbnb quality improves, hotel quality tends to do so as well, pointing to common structural drivers such as competition and innovation lifting standards in both sectors.

We also analyse the association between quality trends in commercial and peer-to-peer accommodation across different tourism destination types to investigate a possible “product type effect.” Table 4 reports the percentage of municipalities within each ISTAT category exhibiting positive or negative hotel and Airbnb quality trends over time.

	<i>Hotel (Positive)</i>	<i>Airbnb (Positive)</i>	<i>Hotel (Negative)</i>	<i>Airbnb (Negative)</i>
Cultural/ historical	67%	87%	0%	13%
Coastal destinations	83%	100%	0%	0%
Mountain destinations	25%	75%	0%	0%
Spa/ wellness destinations	50%	25%	0%	50%
Undefined tourism product	50%	57%	7%	14%
Total	58%	72%	2%	14%

Table 4 Trends in hotel and Airbnb quality across different types of tourism destinations. Percentages indicate the share of municipalities within each ISTAT category showing a positive or negative trend.

Overall, Airbnb quality improves more frequently than hotel quality (72% versus 58%), but also shows higher rates of decline (14% versus 2%), indicating greater variability and local market sensitivity. Differences across destination types are notable: cultural/historical municipalities show largely positive quality trends, with Airbnb outperforming hotels (87% versus 67%). Negative trends appear only for Airbnb in this category (13%), with no hotel quality declines. In seaside destinations, both sectors improve markedly, while in mountain destinations Airbnb shows stronger improvements. Negative trends in short-term rental quality are mainly found in spa/ wellness destinations, where hotels experience solid quality growth. This segment presents challenges for peer-to-peer accommodations due to entry barriers such as exclusive internal thermal facilities that are only available in some hotels. These unique amenities prevent Airbnb hosts from competing on quality with hotels, which, on the contrary, have strong incentives to invest in quality improvements given the generally high-spending clientele in the thermal tourism segment.

3.13 THE ANALYSIS OF THE SUSTAINABILITY OF PEER-TO-PEER TOURISM SUPPLY: CONCLUSIONS AND IMPLICATIONS FOR STAKEHOLDERS

This study offers a detailed analysis of the trends in the peer-to-peer accommodation market in Emilia-Romagna from 2017 to 2024, revealing complex and geographically diverse dynamics in Airbnb supply, pricing, occupancy, and quality that shape the entire hospitality ecosystem.

The peer-to-peer accommodation supply has broadly expanded, driven by large coastal destinations in Romagna and key provincial capitals such as Rimini, Parma, Reggio Emilia, and Ferrara. Growth is also emerging in cultural and mountainous areas, particularly along the via Emilia corridor east of Bologna and in sections of the Apennines. Conversely, some western municipalities -mainly foothill and Apennine locations within Parma and Piacenza provinces -experience slower or negative growth.

With the notable exception of Bologna (which represents the main gateway to the region for the rich inbound segment), increases in rental revenues tend to favour smaller municipalities. This pattern suggests that less crowded and less mature destinations may be better positioned to capitalize on quality improvements and market segmentation, achieving higher returns. Case studies of neighboring municipalities with contrasting trends, such as Gragnano Trebbiense and Agazzano, illustrate how variations in service offerings, local events, and accommodation diversity affect performance and destination attractiveness.

Pricing dynamics, measured by Average Daily Rates (ADR), closely follow revenue trends, indicating improved market positioning through segmentation and investments in service enhancement. However, a critical issue remains about the distribution of generated income -whether it benefits the local community or is “lost” to owners of second homes. Residents’ perceptions of overtourism often arise less from visitor numbers and more from inadequate community engagement and restricted local economic returns, emphasizing the need for socially sustainable tourism development.

Occupancy rate analyses generally support positive demand trends that allow for ADR growth without significantly reducing visitor flows. However, some municipalities require careful monitoring to avoid disproportionate price rises or demand declines. Municipalities successfully combining growth in both ADR and occupancy - such as Albinea, Busseto, Meldola, Longiano, and Sasso Marconi - illustrate the potential for balanced, quality-driven market expansion.

Looking at differences by tourism product type, peer-to-peer market growth is most pronounced in municipalities focused on cultural, historical, or landscape tourism, including many mountainous destinations. Coastal, spa, and large urban centers tend to exhibit more mature, stable market conditions with quality improvements concentrated on entire home rentals, reflecting increasing professionalism and enhanced guest experiences. The spa segment particularly stands out for its limited peer-to-peer growth due to structural barriers and the high expectations of its clientele, favoring hotels with exclusive thermal facilities.

Overall, the interaction between Airbnb and hotel markets reflects a competitive yet evolving environment in which quality improvement and market segmentation are essential drivers of sustainability. Both sectors appear to benefit from shared innovations and governance measures. At the same time, risks related to unregulated growth -including housing affordability pressures, infrastructural strain, and social tensions - require active and thoughtful management.

The results of this study can guide policy makers in designing effective place-based policies tailored to the diverse tourism products and spatial patterns identified across Emilia-Romagna. In Romagna's coastal and large urban destinations, where the peer-to-peer supply remains stable but pressures on quality and pricing are increasing, policy efforts should focus on housing regulations, infrastructure capacity, and mitigating social impacts to preserve affordability and community well-being. Conversely, in emerging mountain and cultural municipalities, market expansion offers opportunities to foster diversified tourism economies rooted in local identity and environmental sustainability, supported by quality-driven growth.

Integrating peer-to-peer accommodations within comprehensive destination marketing and infrastructure development is essential. Supporting hosts through training programs, quality certification schemes, and responsible hosting guidelines can raise accommodation standards and reduce the risk of overtourism. Crucially, ensuring that residents are actively involved in tourism planning and benefit economically through policies promoting local ownership and longer stays is fundamental to maintaining social cohesion.

Policy measures should also encourage a harmonious development of the accommodation supply, fostering collaboration between traditional hotels and peer-to-peer hosts while acknowledging the inherent competition between them. Peer-to-peer hosts and DMOs must work together to improve listing quality, diversify offerings, and target visitor segments aligned with sustainable objectives, such as slow tourism in marginal destinations where hotel supply is minimal both in quantity and quality. Hotels, in turn, should prioritize differentiation based on quality and innovation rather than competing on price with apartment rentals. Our analysis shows this is achievable by developing dynamic capabilities, including digital transformation, personalized guest services, and eco-friendly practices, enabling hotels

to attract higher-spending market segments. This is particularly important in coastal destinations, where price competition remains too intense to guarantee the long-term sustainable development of tourism.

Moreover, hotels have an advantage in regularly monitoring key performance indicators such as occupancy rates and ADR within the peer-to-peer market. This allows them to respond quickly to emerging local trends and prevent market distortions such as oversaturation caused by short-term hosts, who often lack the managerial expertise to approach tourism sustainability looking at long-term return on investment strategically. Encouraging partnerships between hotels and peer-to-peer hosts, including shared quality standards and joint promotional initiatives, can build a cohesive tourism ecosystem that enhances the overall reputation and sustainability of the destination.

Residents and local communities play a central role in maintaining the balance of the tourism ecosystem. Sustainable tourism development must prioritize their perspectives and needs through transparent communication and inclusive, participatory planning. Promoting local benefits from peer-to-peer accommodations includes encouraging longer stays, supporting local property ownership, and strengthening connections between tourism and other community enterprises. Such measures increase residents' acceptance of tourism by ensuring tangible economic benefits and mitigating potential negative impacts, such as noise, congestion, and housing affordability pressures.

Addressing overtourism thus requires managing not only visitor numbers but also embedding tourism within the local cultural and social fabric to uphold social cohesion and protect residents' quality of life. Supporting responsible tourism practices enables the peer-to-peer market to grow in ways that are both economically beneficial and socially inclusive. With this work, we believe we have provided food for thought to stakeholders, helping them better understand these complex dynamics and supporting the development of peer-to-peer tourism markets harmoniously integrated within the regional tourism ecosystem - an ecosystem traditionally characterized by strong hospitality rooted in flexible and efficient hotel entrepreneurship and by residents who have always welcomed tourists warmly and inclusively.

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