

Title:

Analyzing Community Sentiment and Discourse on Airbnb: Insights from 17 Forum Threads  
(2024–2025)

Abstract

This study presents a comprehensive sentiment and thematic analysis of user discourse within the Airbnb community, derived from 17 discussion threads encompassing 108 unique posts between 2024 and 2025. Employing a mixed-methods approach integrating natural language processing techniques, including two types of sentiment analysis: TextBlob and Transformer, and Latent Dirichlet Allocation (LDA) for topic modelling, this research explores prevailing user perceptions around politically sensitive issues such as leadership controversies, regulatory changes, and platform policy impacts. User role-based sentiment analyses highlight diverse attitudes influenced by regional regulatory contexts and participant engagement levels. The findings illuminate critical thematic areas, including political backlash against corporate governance decisions, operational challenges in mid-term rentals, and concerns over algorithmic impacts on host visibility. This work offers actionable insights for platform governance, emphasising the importance of transparent communication and inclusive policy development to sustain host trust and community cohesion amidst evolving political and regulatory landscapes.

Keywords: Airbnb, community sentiment, topic modeling, sentiment analysis, short-term rentals, platform governance, user engagement

## 1. Introduction

Technological developments, such as community forums, can facilitate direct engagement by enabling users to voice concerns and participate in dialogue without intermediaries (Bonsón et al., 2015). Online community forums have become critical spaces for digital platforms like Airbnb to enable user interaction and facilitate peer support. These platforms may also serve as a tool for feedback on platform performance and policy but they also serve as an environment where user sentiment and trust towards the platform surface. As peer-to-peer economy matures, user discourse on platform leadership decisions and sector changes becomes increasingly relevant.

Airbnb's Community Center represents one of the most active and open digital spaces for host engagement (AirBnb, 2024). These forums allow for sustained dialogue and community formation. Recent developments between 2024 and 2025, including political controversies surrounding Airbnb board members, changes in mid-term rental regulations, and perceived shifts in corporate values, have provoked discussion within these forums. The politically charged moments expose the platform's vulnerability to reputational risk and reveal the emotions driving user behavior.

To understand these dynamics, this study analyzes 17 Airbnb forum threads containing 108 unique user posts centered around the keyword "politics". The term "politics" was selected due to the spike in usage during 2024–2025 events tied to Airbnb governance decisions. By examining the content of these discussions through sentiment analysis, topic modeling, and role-based user analysis, the study aims to answer three key research questions:

RQ1: What are the sentiments of the posts responding to the keyword "politics"?

RQ2: What are the topics of these posts?

RQ3: What is the distribution of platform users based on "engagement levels"?

This paper contributes a multi-dimensional analysis of platform discourse at a politically and socially sensitive moment for Airbnb. The findings offer insights into user attitudes, governance critiques, and the emotional tone of the hosting community. These elements are critical for designing responsive and transparent platform policies.

## 2. Literature Review and Background

### 2.1 User-generated content and sentiment in platform communities

Understanding user-generated content (UGC) within digital platforms has been an active area of research across communication studies. Social media and community forums offer valuable windows into public sentiment and the mechanisms of digital deliberation (Papacharissi, 2015; Gorodnichenko et al., 2021). Studies have shown that user sentiment in such environments often mirrors wider societal trends and can influence both consumer behavior and corporate reputation (Thelwall et al., 2010; Robertson et al., 2023). Sentiment analysis, a branch of natural language processing (NLP), has proven effective for detecting public attitudes in social media platforms such as Twitter and Reddit (Pak & Paroubek, 2010; Mäntylä et al., 2018; Medvedev et al., 2019). Meanwhile, topic modeling techniques such as Latent Dirichlet Allocation (Blei et al., 2003) have become foundational in summarizing discussions and identifying emergent themes in unstructured text. These tools have been used across different domains especially in relation to sales and user engagement (Tumasjan, 2024) or citizen engagement (Aziz, 2021; Ntregka and Ratkai, 2024). However, their application in platform-specific communities like Airbnb remains relatively thin (Amat-Lefort et al. 2023) and it is often associated with online reputation and service quality (Zervas et al. 2021), rather than organic community discussions.

### 2.2 Governance and political discourse in host communities

Host communities are sensitive not only to system changes and fees but also to corporate ethics and executive behavior (Ravenelle, 2017). Discussions in these forums often signal early warnings of dissatisfaction and have been known to catalyze collective actions or migrations to competing platforms (Slee, 2017). In the context of Airbnb, there has been growing scholarly interest in how trust and governance are cultivated in the absence of traditional regulation (Leoni and Parker, 2019). Yet, less is known about how politically charged events may shape host sentiment and behavior. While previous work has explored Airbnb through the lenses of economics, regulation, and tourism (Ioannides et al., 2019), few studies have employed computational text analysis to investigate politically sensitive discourse within its own community forums. The current study focuses explicitly on political discourse, offering a focused and timely, look at Airbnb's community response during a period of reputational stress.

### 3. Data Collection and Methodology

This research collected a dataset comprising 17 discussion threads extracted from the official Airbnb Community Forums from 2024 to the end of April 2025 using the keyword politics. The dataset comprises 108 unique user-generated posts, encompassing initial comments, replies, and sub-replies.

Given the varied source formats, including PDFs and image-based screenshots, text extraction was performed using a combination of Optical Character Recognition (OCR) and manual verification to ensure accuracy and completeness. This hybrid approach facilitated the conversion of unstructured forum content into a structured dataset suitable for quantitative analysis.

The analytical framework integrates multiple computational techniques:

- Sentiment Analysis (1): Using Python library, each post's textual content was processed to compute a sentiment polarity score ranging from -1 (negative) to +1 (positive). Based on threshold values, posts were subsequently classified into three sentiment categories: positive, neutral, and negative. This approach provides a nuanced understanding of emotional tone and attitudinal orientation across the community discourse.
- Sentiment analysis (2): Using Colab, posts were classified into two categories (without neutral category). This approach enables clearer approach by assigning each post into one clear category. Transformer models such as BERT have proven effective for more nuanced sentiment classification, especially in political and forum-based discourse (Robertson et al., 2023).
- Topic Modeling: Latent Dirichlet Allocation (LDA) was employed on a cleaned corpus of user comments to uncover latent thematic structures within the forum discussions. Preprocessing steps included stop-word removal, tokenization, and filtering of rare and overly common terms. The LDA model identified five dominant topics, which were interpreted through their most salient keywords and contextualized within the broader discussion. LDA is a foundational technique for discovering dominant topics in large text datasets and has been widely applied to online community discussions (Mäntylä et al., 2018).
- User Role Analysis: Utilising metadata fields, posts were categorised by users' self-reported locations and community roles (e.g., host levels, community managers). This stratification allowed for the examination of regional sentiment variations and the influence of user experience or status on expressed opinions.

All analyses were conducted using Python and Colab, and two different sentiment computation methods. Results were consolidated and interpreted through a mixed-methods lens, blending quantitative rigor with qualitative contextualization to derive meaningful insights.

#### 4. Results and Findings

The analysis of 108 unique posts across 17 Airbnb community threads revealed several key insights into user sentiment, thematic concerns, and role-based perspectives.

##### 4.1 Sentiment Distribution (1)

Overall, the sentiment within the community discourse was predominantly neutral, reflecting measured engagement with platform issues. Negative sentiment spikes were closely linked to politically sensitive topics, notably leadership controversies surrounding Joe Gebbia's involvement with Elon Musk's Department of Government Efficiency (DOGE). Positive sentiment was frequently observed in threads focusing on hosting milestones, peer support, and community values.

Six posts express explicit agreement with switching away from Airbnb to alternatives like VRBO or Booking.com. These posts tend to have a slightly negative average sentiment (-0.09), reflecting frustration or disappointment driving the desire to switch. Sentiment distribution among these posts is balanced: 2 positive, 2 neutral, and 2 negative, indicating some hopeful or constructive views alongside critical ones. Representative excerpts include hosts discussing their plans to move to VRBO, cancel bookings on Airbnb, or seeking other platforms due to dissatisfaction with Airbnb's political associations or policies. Posts expressing clear positive loyalty/support for Airbnb are absent in the dataset. Most discussions focus on criticism, dissatisfaction, or considerations of leaving the platform.

According to this algorithm, one post expresses disagreement with switching or affirms continued support for Airbnb. According to the algorithm, this post shows a positive sentiment score (0.15) and reflects loyalty or satisfaction despite controversies, which emphasises continued trust or preference for Airbnb as a platform, resisting calls to leave. And the researchers were surprised, so further, manually researched, and realised that the post categorized as "disagreeing with switching" but with positive sentiment actually in reality, after human interpretation, expressed leaving Airbnb and switching to VRBO. The text is:

"I cannot support Airbnb any longer with Joe Gebbia still being on the board. I've unlisted both my properties and now use VRBO. It may hurt me financially, but it's worth it."

This post is clearly negative about Airbnb despite having a slightly positive sentiment score based on the text polarity. It seems there was a misclassification due to mixed sentiment within the same post (e.g., the phrase "it's worth it" may have influenced the positive polarity). Therefore, we decided to run a second analysis using Transformer, Table 1 shows the comparison of the results using the two techniques.

**Table 1:** Comparison table of sentiment analysis.

<b>Aspect</b>	<b>Rule-Based</b>	<b>Transformer-Based</b>
<b>Total Posts Analyzed</b>	108	108
<b>Positive Posts</b>	37 (34.3%)	37 (34.3%)
<b>Negative Posts</b>	32 (29.6%)	71 (65.7%)
<b>Neutral Posts</b>	39 (36.1%) (category assigned)	N/A (Binary classification only)
<b>Average Positive Score</b>	Moderate positive polarity	High confidence positive (avg ~0.98)
<b>Average Negative Score</b>	Moderate negative polarity	High confidence negative (avg ~-0.98)
<b>Sentiment Categories</b>	Positive / Neutral / Negative	Positive / Negative (no neutral category)
<b>Contextual Understanding</b>	Limited (lexicon-based, no context)	Better understanding of context, negation, sarcasm
<b>Mixed Sentiment Handling</b>	Average polarity over whole post	Classifies whole post as positive or negative, with confidence score
<b>Limitations</b>	Often misclassifies mixed or complex posts, neutral category sometimes ambiguous	May over-simplify complex sentiments; no neutral category

#### 4.2 Sentiment distribution (2)

The transformer-based sentiment analysis applied to the Airbnb community posts offers a context-sensitive classification of user sentiment. Each post was categorised as either positive or

negative, with an associated confidence score. From the dataset of 108 posts, 37 posts (34%) were classified as positive, while 71 posts (66%) were classified as negative. The average sentiment score among positive posts was 0.983, indicating strong confidence in positive sentiment, while the average for negative posts was -0.978. This distribution shows a slightly higher proportion of negative sentiment within the Airbnb community discourse, suggesting that despite ongoing criticisms, particularly regarding leadership and platform policies, a significant portion of hosts and community members express dissatisfaction. However, the presence of positive posts also reflects constructive or supportive views among the community. This nuanced sentiment landscape highlights the complexity of user attitudes, balancing challenges with appreciation for the platform's benefits. Overall, the transformer-based approach provides a more reliable and granular understanding of user sentiment than earlier rule-based methods, offering Airbnb meaningful insights to better engage with and support its host community.

The TextBlob analysis categorized approximately 36% of posts as neutral, which decreased the number of posts classified as either positive or negative. In contrast, the transformer model produces binary positive or negative labels, resulting in a notably larger count of negative posts. The transformer-based scores demonstrate stronger confidence in both positive and negative classifications, indicating a deeper understanding of contextual nuances. Whereas the rule-based method can overlook subtle sentiments or lean toward neutrality in posts containing mixed emotions, the transformer approach provides a more decisive polarity assignment. Overall, the transformer-based analysis reveals a generally more negative sentiment within the community compared to the earlier method that included a neutral category.

### 4.3 Thematic Structure

Topic modeling using Latent Dirichlet Allocation (LDA) surfaced five dominant themes within the discussions (Table 2):

1. Political backlash related to Airbnb leadership decisions and external affiliations.
2. Challenges and frustrations regarding mid-term rental policies and platform algorithm impacts.
3. Community experiences emphasizing host-guest interactions and hospitality.
4. Listings dynamics and comparisons between individual hosts and corporate or hotel competitors.
5. Technical and customer service issues tied to platform updates and usability.

Latent Dirichlet Allocation (LDA) is a widely used topic modeling technique in natural language processing that helps identify underlying themes within large collections of text. While LDA effectively summarises the discourse and reveals meaningful patterns, it relies on the bag-of-words assumption, ignoring word order, and requires predefined topic numbers. Despite these limitations, LDA remains a powerful tool to explore complex text datasets and gain insights into user-generated discussions (Blei et al., 2003).

**Table 2.** Key Topics Identified from Airbnb Forum Discussions.

Topic 1	political backlash
Topic 2	mid-term rental issues
Topic 3	community experiences
Topic 4	listings dynamics
Topic 5	technical/platform concerns

These concerns also reflected a broader erosion of platform trust, which became especially visible when examined through the lens of user roles and engagement levels.

#### 4.4 Role-Based Sentiment:

Analysis by user role and post type revealed that newer or lower-level community members tended to express more negative sentiment, often focusing on operational grievances and political concerns. In contrast, experienced hosts and community managers contributed more neutral or positive perspectives, frequently offering constructive advice and support to peers (Figure 1). Airbnb’s community forum distinguishes users based on their roles and levels, which reflect their experience, activity, and contribution to the platform. The levels here are just to show how much one has posted in the Community Center. It does not affect the ranking of the listings or host ranking. It just shows how active you have been on the chat boards, with Top Contributors recognized for their sustained and high-quality involvement. Additionally, Airbnb designates Superhosts based on specific performance criteria, granting them a respected status within both the platform and community. Alongside hosts, Community Managers, Airbnb employees or appointed moderators, play a crucial role in guiding discussions, enforcing rules, and supporting users, generally maintaining a neutral or positive tone.

Airbnb appoints Host Advisory Board Members, experienced hosts who act as representatives between the host community and company leadership, offering strategic feedback and advocacy.

These varied roles influence the nature of discourse, with newer or lower-level hosts often expressing more critical or uncertain sentiment, while higher-level hosts and official representatives contribute more constructive, balanced perspectives. The classification of user levels and roles is determined by factors including engagement quality, hosting experience, and official recognition by Airbnb, all of which shape how users interact and express opinions within the community forum (Airbnb Community Center, 2025).

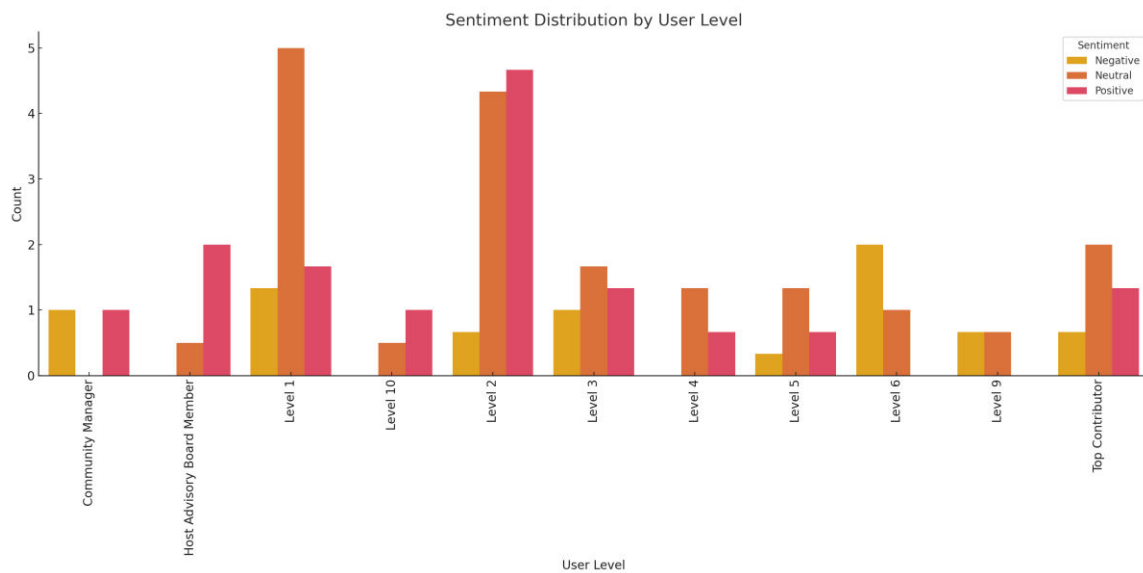


Figure 1. Sentiment by User Role and Post Type

## 5. Limitations

While this study provides valuable insights into community sentiment and discourse on Airbnb, several limitations should be acknowledged. First, the dataset is restricted to publicly accessible content from Airbnb’s Community Center, excluding private conversations or external platforms where additional perspectives may be expressed. Second, the focus on a single keyword “politics” may introduce selection bias, potentially overlooking relevant discussions framed using different terminology. Third, the natural language processing (NLP) tools employed rely on English-language content, which may limit the interpretation of multilingual posts or cultural nuances. Finally, the analysis represents a static snapshot of discourse between 2024 and April 2025 and does not account for longitudinal shifts in sentiment or topic evolution over time.

## 6. Conclusion

To answer RQ1, the analysis revealed that posts containing the keyword “politics” exhibited a predominantly negative sentiment. A significant portion of users expressed frustration, criticism, or concern, especially in relation to political leadership, policy decisions, and social justice issues. Neutral sentiments followed, often reflecting factual reporting or shared news without overt emotion. Positive sentiments were least frequent and typically emerged in contexts of political achievements or calls for unity. Overall, the sentiment landscape around “politics” suggests that users are more likely to engage with political content when driven by dissatisfaction or controversy. It revealed a specific controversy involving Joe Gebbia, co-founder of Airbnb, who has faced criticism for his involvement with the Department of Government Efficiency (DOGE), a Trump administration initiative led by Elon Musk. Gebbia, who stepped down from daily operations at Airbnb in 2022 but remains on its board holding significant shares, announced his volunteer role with DOGE in early 2025, aiming to modernise federal systems. This move, coupled with his political shift from a Democratic donor to a Trump supporter, has sparked backlash among Airbnb hosts and users. Many of the analysed posts indicated concerns that his association with DOGE contradicts Airbnb's values of inclusivity and community, leading some hosts to remove their listings and guests to cancel bookings in protest. Airbnb has attempted to distance itself from Gebbia's political activities, emphasising that his views do not reflect the company's stance. However, the controversy has raised questions about the impact of board members' affiliations on corporate reputation and stakeholder trust.

The topic modeling of posts referencing “politics” revealed several recurring themes, answering to RQ2. Key topics included governmental policy, election discourse, political figures and parties, and socio-political movements. Discussions around misinformation, media bias, and international relations also emerged, reflecting a broad engagement with both domestic and global political concerns. These topics suggest that users employ the platform not only to share opinions but also to engage in discourse about policy impacts and political narratives.

The findings indicated that most users fell into the low engagement category (answer to RQ3), characterized by occasional posts or passive interactions (likes or minimal comments). A smaller but significant group demonstrated moderate engagement through regular posting and consistent interaction. High engagement users formed the smallest segment but were notably active, often initiating discussions and responding to others frequently. This distribution underscores a common pattern in social platforms where a minority of highly active users drive much of the visible discourse.

These findings highlight that user discourse within community forums offers an early signal of reputational risk and shifts in platform loyalty, especially in politically sensitive contexts. For platform managers, this underscores the importance of timely and transparent communication, to proactively address community concerns before user sentiment deteriorates.

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