

EXPLORING USER SATISFACTION WITH A DIGITAL TOURISM PLATFORM: A SENTIMENT ANALYSIS OF TRAVELOKA ONLINE REVIEWS

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ABSTRACT

Digital tourism applications have become an essential component of contemporary travel experiences, shaping how tourists search for information, make reservations, and evaluate services. Although prior studies highlight the role of digital platforms in enhancing user satisfaction, a gap remains between theoretical perspectives and empirical evidence derived from large-scale user-generated content, particularly in developing countries. This study aims to address this gap by analyzing user satisfaction with the Traveloka application through online reviews. This research employed an explanatory descriptive approach using a lexicon-based sentiment analysis technique. Data were collected from user reviews on the Google Play Store, where an initial dataset of 2,500 reviews was filtered to obtain 516 tourism-related reviews. The analysis involved text preprocessing, sentiment classification, keyword frequency analysis, and statistical testing to examine the relationship between sentiment and user ratings. The results show that positive sentiment dominates user reviews (71.23%), followed by negative sentiment (26.03%) and neutral sentiment (2.74%), supported by an average rating of 3.89 and a median rating of 5. Dominant positive expressions emphasize ease of use, fast service, affordability, and booking convenience, while negative sentiment is primarily associated with refund issues, payment systems, account access, and booking cancellations. The chi-square test indicates a significant relationship between sentiment and user ratings ($\chi^2 = 1022.00$; $p < 0.001$). In conclusion, while Traveloka is generally perceived as a reliable and user-friendly digital tourism application, improvements in transaction handling and post-purchase service processes are essential to further enhance user satisfaction.

Keywords: Digital Tourism, Sentiment Analysis, User Satisfaction, Traveloka Application, Online Reviews.

INTRODUCTION

The rapid development of digital technology has significantly transformed the tourism industry, particularly through the emergence of digital travel applications that facilitate information search, booking, and payment processes (Sanjaya et al., 2025). These applications have become an integral part of tourists' decision-making and travel experiences, as they offer efficiency, accessibility, and personalized services. However, the increasing reliance on digital platforms also raises concerns regarding service quality, user satisfaction, and post-purchase experiences, especially when problems such as booking cancellations, refund delays, or payment issues occur. Understanding how users perceive and evaluate digital tourism applications is

therefore essential for both service providers and tourism stakeholders (Mamakou et al., 2024).

In Indonesia, digital tourism platforms have experienced rapid growth, driven by the increasing penetration of smartphones and internet usage. Traveloka, as one of the leading online travel agencies in Southeast Asia, has attracted millions of users and maintains a strong presence in the Indonesian market. Reports indicate that Traveloka consistently ranks among the top travel applications on the Google Play Store and is widely used for booking transportation and accommodation services. This widespread adoption highlights the importance of examining user experiences and satisfaction with the platform.

Previous studies have highlighted the importance of user satisfaction in digital tourism platforms, emphasizing factors such as usability, perceived usefulness, trust, and system reliability (Mustaqim et al., 2022). Many researchers have applied survey-based approaches or theoretical models, including the Technology Acceptance Model (TAM) and customer satisfaction frameworks, to explain user behavior in online travel services. While these studies provide valuable theoretical insights, they often rely on structured questionnaires and limited samples, which may not fully capture users' spontaneous opinions and real experiences (Dewi et al., 2023).

Moreover, existing research on digital tourism in Indonesia is still dominated by survey-based methods, with relatively limited use of user-generated content (UGC) such as online reviews as a primary data source. Studies employing sentiment analysis on large-scale review data remain scarce, particularly for major tourism applications. This indicates a significant research gap between traditional perception-based studies and data-driven approaches that utilize real user expressions in digital platforms.

In contrast, user-generated content in online reviews offers rich, authentic, and large-scale data that reflect actual user perceptions, yet this source remains underutilized in tourism application research, particularly in the Indonesian context (Wahyuni et al., 2023).

This study addresses the gap between theoretical discussions of digital tourism satisfaction and empirical evidence derived from real user experiences by employing sentiment analysis on online reviews of the Traveloka application. Traveloka is one of the most widely used digital tourism platforms in Southeast Asia, offering services such as transportation booking, accommodation, and digital payments. Despite its popularity, systematic academic studies examining user sentiment toward Traveloka based on large-scale review data are still limited (Usman et al., 2022). Therefore, this research aims to analyze user satisfaction levels, identify dominant positive and negative perceptions, and examine the relationship between user sentiment and rating behavior (Maryam, 2025).

The contribution of this study is twofold. First, it provides empirical evidence on user satisfaction with a major digital tourism application by utilizing sentiment analysis of online reviews, thereby complementing existing survey-based research. Second, the findings offer practical insights for digital tourism service providers by highlighting key strengths and recurring service issues that influence user perceptions. By integrating tourism studies, communication analysis, and data-driven methods, this article contributes to a deeper understanding of digital tourism service quality and supports the improvement of user-centered digital tourism platforms.

METHODS

A. Research Design

This study employed an explanatory descriptive research design combined with computational text analysis to examine user perceptions of the Traveloka digital tourism application. The approach was selected to systematically describe and explain patterns of user satisfaction as expressed in online reviews, as well as to analyze the relationship between sentiment orientation and user ratings (Kheir et al., 2024). By utilizing user-generated content, this study captures authentic user experiences and provides empirical evidence of how digital tourism services are perceived in practice (Rahmayanti et al., 2022).

B. Data Source and Sample

The data used in this study were obtained from user reviews of the Traveloka application published on the Google Play Store. An initial dataset consisting of 2,500 reviews was collected using a data scraping technique within the period of observation. From this dataset, a filtering process was conducted to identify reviews that were relevant to tourism services, including transportation, accommodation, booking processes, and digital payment features (Iswanto et al., 2024). As a result, 516 tourism-related reviews were selected as the final sample for analysis. Each review contained textual feedback and a numerical rating ranging from one to five stars.

C. Data Collection Procedures

Data collection was carried out through an automated review extraction process using a Python-based script. The collected data included review text, user ratings, and review metadata. Prior to analysis, the textual data underwent several preprocessing steps to enhance the reliability and consistency of the dataset. These steps included the removal of duplicate entries, handling of missing values, text normalization, conversion to lowercase, removal of punctuation and numerical characters, as well as stopword removal. In addition, domain-specific stopword filtering was applied to eliminate non-informative terms related to the application name and commonly used expressions.

The filtering process was conducted using keyword-based criteria, where reviews containing tourism-related terms such as “hotel”, “flight”, “booking”, “ticket”, “travel”, and “accommodation” were retained. Reviews that were not directly related to tourism services (e.g., technical issues unrelated to booking or travel experience) were excluded from the analysis. This approach ensured that the dataset specifically reflected user experiences relevant to digital tourism services.

D. Sentiment Analysis and Instruments

Sentiment classification was performed using a lexicon-based sentiment analysis approach, which categorizes review texts into positive, negative, or neutral sentiment classes based on the presence of sentiment-bearing words.

This study utilized a predefined sentiment lexicon adapted for Indonesian language contexts, where each word was assigned a polarity score (positive, negative, or neutral). The classification process was conducted by calculating the cumulative sentiment score of each review. Reviews with positive scores were classified as positive, negative scores as negative, and scores close to zero as neutral.

As a lexicon-based approach was employed, the analysis does not involve a training process or performance evaluation metrics such as accuracy or F1-score. Instead, it relies on predefined sentiment polarity, ensuring transparency and interpretability in the classification process.

The analytical instruments used in this study included text preprocessing tools, sentiment lexicons, frequency-based keyword extraction, and word frequency analysis to identify dominant expressions within each sentiment category. In addition, word cloud visualization was applied to support the interpretation of prominent keywords in positive and negative reviews.

E. Data Analysis Techniques

Descriptive statistical analysis was used to examine the distribution of sentiments, user ratings, and keyword frequencies (Ariansyah et al., 2025). Measures such as percentage distribution, mean, and median ratings were calculated to summarize user evaluation patterns. Furthermore, a chi-square test was conducted to analyze the relationship between sentiment categories and user rating levels, allowing the study to assess whether sentiment orientation significantly corresponds with users’ rating behavior. This analytical framework enables the study to describe, explain, and statistically validate patterns of user satisfaction in the Traveloka application.

FINDINGS

A. Overview of the Dataset

The analysis was conducted on 516 tourism-related user reviews of the Traveloka application collected from the Google Play Store. These reviews were selected from an initial dataset of 2,500 reviews after a filtering process to ensure relevance to tourism services, including transportation booking, accommodation, and payment features. Each review consisted of textual feedback and a user rating on a five-point scale.

Table 1. Data Description

Description	Details
Data source	Google Play Store
Application analyzed	Traveloka
Total initial reviews collected	2,500
Tourism-related reviews analyzed	516
Type of data	User review text and rating
Rating scale	1–5 stars
Unit of analysis	Individual user review

B. Sentiment Distribution

The sentiment analysis results indicate a strong dominance of positive sentiment among users. Of the total reviews analyzed, 71.23% were classified as positive, 26.03% as negative, and only 2.74% as neutral. This distribution suggests that the majority of users express favorable experiences when using the Traveloka application. The prevalence of positive sentiment is consistent with the overall rating pattern observed in the dataset.

Table 2. Distribution of User Sentiment

Sentiment Category	Frequency	Percentage (%)
Positive	364	71.23
Negative	133	26.03
Neutral	14	2.74
Total	511	100.00

Table 2 shows the distribution of user sentiment toward the Traveloka application based on online reviews. The results indicate that positive sentiment dominates the dataset, accounting for 71.23% of the reviews. Negative sentiment represents 26.03%, while neutral sentiment accounts for only 2.74% of the total reviews analyzed. This distribution suggests that the majority of users express favorable opinions about the application, although a considerable proportion of users also report negative experiences.

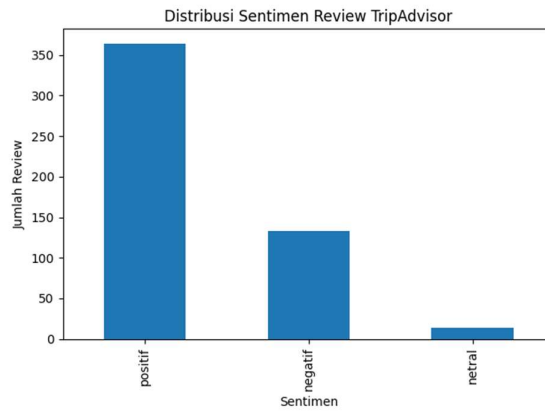


Figure 1 Distribution of User Sentiment

C. User Rating Characteristics

Descriptive statistical analysis of user ratings shows that the average rating of the Traveloka application is 3.89, while the median rating is 5.0. The high median value indicates that most users tend to give the highest rating, reflecting generally high levels of satisfaction. Rating distribution analysis reveals that positive sentiment is almost exclusively associated with higher ratings, particularly four- and five-star reviews, whereas negative sentiment is concentrated in one- and two-star ratings.

Table 3. Descriptive Statistics of User Ratings

Statistic	Value
Number of reviews	516
Mean rating	3.89
Median rating	5.00
Minimum rating	1
Maximum rating	5

Table 3 presents the descriptive statistics of user ratings for the Traveloka application. The mean rating of 3.89 indicates a generally positive evaluation of the application, while the median rating of 5.00 suggests that more than half of the users awarded the highest possible rating. The rating values range from one to five stars, reflecting both highly satisfied users and those who reported unfavorable experiences.

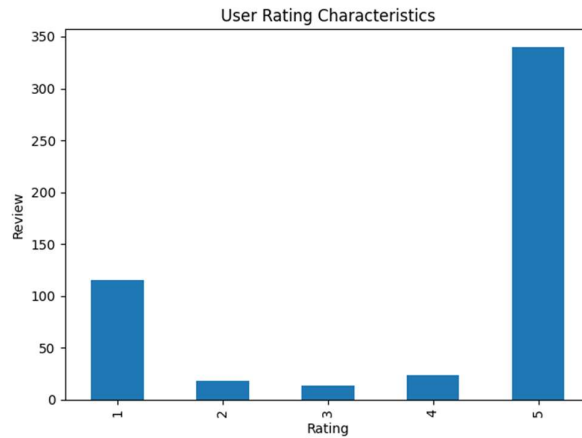


Figure 2 Statistics of User Ratings

D. Dominant Keywords in Positive and Negative Reviews

The keyword frequency analysis reveals that positive reviews emphasize ease of use, efficiency, and affordability, as reflected in dominant terms such as *mudah*, *bantu*, *cepat*, and *murah*. In contrast, negative reviews predominantly highlight issues related to refunds, payment systems, and service processes, indicated by frequent occurrences of words such as *refund*, *kecewa*, *paylater*, and *batal*.

1. Dominant Keywords in Positive Reviews

Table 4 presents the most frequent keywords identified in positive user reviews after text preprocessing and stopword removal. The frequency distribution shows that words such as *mudah* (easy), *bantu* (helpful), *terimakasih* (thank you), *cepat* (fast), and *pesan* (booking) appear most prominently, indicating users' positive perceptions of ease of use, service assistance, efficiency, and booking convenience provided by the Traveloka application.

These findings are further reinforced by the positive review word cloud illustrated in Figure 3. In the visualization, high-frequency keywords such as *mudah*, *bantu*, *cepat*, and *terimakasih* appear in larger font sizes, confirming their dominance within positive user narratives. The visual prominence of these terms supports the quantitative results shown in Table 4 and highlights that user satisfaction is largely driven by functional simplicity, responsiveness, and perceived value for money.

Table 4. Dominant Keywords in Positive Reviews

No.	Keyword (Indonesian)	Frequency
1	<i>mudah</i> (easy)	93
2	<i>bantu</i> (helpful)	79
3	<i>terimakasih</i> (thank you)	55
4	<i>jalan</i> (works well)	30
5	<i>cepat</i> (fast)	28
6	<i>pesan</i> (booking)	28
7	<i>beli</i> (purchase)	26
8	<i>harga</i> (price)	23
9	<i>pakai</i> (use)	23
10	<i>libur</i> (holiday)	22
11	<i>best</i>	22

Figure 5 Relationship Between Sentiment Categories and User Ratings

The relationship between sentiment categories and user ratings was examined using a chi-square test of independence. The results indicate a statistically significant association between sentiment orientation and rating levels ($\chi^2 = 1022.00$, $p < 0.001$). This finding confirms that negative sentiment is strongly associated with low ratings, whereas positive sentiment is predominantly linked to high ratings.

Table 6. Crosstabulation of Sentiment and User Ratings

Sentiment	1 Star	2 Stars	3 Stars	4 Stars	5 Stars	Total
Negative	115	18	0	0	0	133
Neutral	0	0	14	0	0	14
Positive	0	0	0	24	340	364
Total	115	18	14	24	340	511

Table 6 shows a clear correspondence between user sentiment and rating behavior. Reviews classified as negative are concentrated in one- and two-star ratings, while positive sentiment reviews are almost exclusively associated with four- and five-star ratings. Neutral sentiment appears only in three-star reviews. The chi-square test further supports the existence of a significant relationship between sentiment and user ratings.

DISCUSSION

The findings of this study provide empirical evidence regarding user satisfaction with the Traveloka application as reflected in online reviews related to tourism services. The sentiment analysis results indicate that the majority of reviews are positive, accounting for more than seventy percent of the total tourism-related reviews. Compared to similar studies on digital platforms, where positive sentiment typically ranges between 60% and 75%, this proportion can be considered relatively high, indicating a generally favorable user perception. This dominance of positive sentiment suggests that digital tourism applications such as Traveloka generally succeed in meeting user expectations, particularly in supporting travel planning and booking activities. This finding is consistent with previous studies on digital tourism platforms, which emphasize the role of usability, efficiency, and service reliability in shaping user satisfaction.

The descriptive analysis of user ratings further strengthens this interpretation. The average rating of 3.89 and a median rating of 5 indicate that users tend to assign high scores when they express positive experiences. The cross-tabulation between sentiment and rating, supported by the chi-square test results, reveals a statistically significant relationship between user sentiment and rating levels. Positive sentiments are strongly associated with high ratings (four and five stars), while negative sentiments are predominantly linked to low ratings (one and two stars). This confirms that emotional expressions in user reviews are closely aligned with numerical evaluations, supporting theories of electronic word-of-mouth (e-WOM) that emphasize consistency between affective responses and behavioral indicators such as ratings.

The keyword frequency analysis offers deeper insights into the factors driving positive and negative user perceptions. In positive reviews, dominant keywords such as mudah (easy), bantu (helpful), cepat (fast), pesan (booking), and terimakasih (thank you) indicate that users highly value ease of use, efficiency, and supportive service

features. These findings align with the Technology Acceptance Model (TAM), which highlights perceived ease of use and perceived usefulness as critical determinants of user acceptance and satisfaction with digital systems. The frequent appearance of price-related keywords such as *harga* (price) and *murah* (cheap) also suggests that perceived economic value plays an important role in shaping positive user experiences in digital tourism applications.

Conversely, negative reviews are dominated by keywords related to financial and procedural issues, including *refund*, *bayar* (payment), *paylater*, *uang* (money), *proses* (process), *batal* (cancellation), and *blokir* (blocked). These results indicate that dissatisfaction largely arises from problems associated with payment systems, refund mechanisms, and account management. This finding is in line with prior empirical studies on online travel agencies, which report that transaction failures and delayed refund processes are among the most common sources of user complaints. From a service quality perspective, these issues reflect gaps in responsiveness and reliability, particularly in post-transaction services.

From a practical standpoint, these findings suggest the need for improvements in refund processing efficiency, clearer communication regarding payment status, and more transparent management of PayLater services. Enhancing these aspects may reduce user dissatisfaction and strengthen trust in the platform's financial transaction system.

The visual representation through word clouds complements the quantitative results by emphasizing the prominence of key terms within each sentiment category. The larger and more visible keywords in both positive and negative word clouds reinforce the statistical findings and help illustrate recurring themes in user narratives. This combined approach strengthens the interpretative validity of the analysis by integrating numerical frequency data with visual patterns of user expression.

Overall, the discussion highlights that while Traveloka is generally perceived positively as a digital tourism application, critical challenges remain in managing financial transactions and service recovery processes. Addressing these issues may enhance user trust and satisfaction, thereby improving the overall quality of digital tourism services. This study contributes to the growing body of literature on digital tourism and online reviews by demonstrating how sentiment analysis and keyword frequency analysis can be used to evaluate user satisfaction and identify practical areas for service improvement. Furthermore, it highlights the importance of integrating user-generated content analysis into digital tourism research to capture real user experiences at scale.

CONCLUSION

This study demonstrates that sentiment analysis of online reviews is an effective approach for evaluating user satisfaction with digital tourism applications. The findings indicate that the Traveloka application is predominantly perceived positively, particularly due to its ease of use, efficiency, and perceived value in supporting travel-related activities. The significant relationship between user sentiment and rating levels further confirms that online reviews provide reliable insights into user experiences in digital tourism contexts.

This study contributes to the literature by utilizing user-generated content from the Google Play Store as a primary data source, offering authentic and large-scale insights into user perceptions. By integrating sentiment classification, rating analysis, keyword frequency analysis, and word cloud visualization, this research provides a comprehensive framework for understanding both positive and negative aspects of digital tourism services.

However, several limitations should be acknowledged. The study is limited to a single platform and one application, which may restrict the generalizability of the findings. In addition, the use of a lexicon-based sentiment approach may not fully capture nuanced or context-dependent expressions in user reviews. Future research is encouraged to incorporate multiple platforms, apply more advanced analytical models, and explore longitudinal patterns of user sentiment.

From a practical perspective, the findings highlight the importance of maintaining system usability and efficiency while addressing critical issues related to payment systems, refund processes, and account management. Specifically, it is recommended that service providers establish clearer and more measurable Service Level Agreements (SLAs) for refund processing—such as defining maximum processing times, improving real-time status tracking, and enhancing communication transparency—to reduce user uncertainty and dissatisfaction. In addition, optimizing PayLater management and transaction verification processes may further improve user trust and service reliability.

For future research, it is recommended to apply aspect-based sentiment analysis to capture more granular insights into specific application features, such as booking systems, payment services, and customer support. This approach would enable a deeper understanding of user perceptions at the feature level and support more targeted service improvements.

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