User Feedback Analysis Report

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Date : 17/10/2025

1. Executive Summary

This report provides an in-depth analysis of user feedback data gathered from a collection of customer reviews. The primary objective of this study is to uncover sentiment trends, detect recurring issues, and propose actionable recommendations to enhance customer satisfaction and service quality.

Through sentiment analysis, keyword extraction, and trend identification, we discovered that the majority of user reviews express strong dissatisfaction. The feedback predominantly centers on negative experiences related to event management, staff behavior, venue conditions, and sound quality.

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2. Objectives

The key objectives of this analysis are as follows:

1. To evaluate user reviews and categorize them based on sentiment polarity (positive, neutral, or negative).
2. To extract and identify recurring keywords and underlying themes within the feedback.
3. To derive actionable business insights from negative reviews.
4. To recommend strategic measures aimed at improving customer experience and overall satisfaction.

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3. Data Overview

- Data Source: CSV file (data.csv) containing user-submitted reviews.
- Columns Included:
    - review: Textual customer feedback.
    - model: AI model used for sentiment analysis (Gemini-1.5-Flash).
    - sentiment: Assigned sentiment category (negative).
- Total Reviews Analyzed: 25
- Data Type: Qualitative (text-based feedback).
- Sentiment Categories Identified: Negative

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4. Methodology

The analysis was conducted using Python in a Jupyter Notebook environment, following a systematic process:

Step 1: Data Loading

The dataset was imported using the Pandas library:

df = pd.read_csv("data.csv")

This enabled easy exploration and manipulation of the textual feedback data.

Step 2: Data Cleaning and Validation

- Verified that the review column contained no missing or null values.
- Ensured all text data were in the correct string format.
- Removed unwanted spaces and invalid characters where applicable.

df.dropna(subset=["review"], inplace=True)

Step 3: Sentiment Distribution Analysis

The dataset included predefined sentiment labels. A summary of sentiment counts was generated:

sentiment_counts = df["sentiment"].value_counts()

Observation:

- 100% of reviews were categorized as *negative*, highlighting widespread customer dissatisfaction.

A bar chart created using Seaborn clearly depicted the dominance of negative sentiments across all feedback entries.

Step 4: Keyword Extraction and Trend Identification

To identify common complaint areas, textual data were analyzed using the re (Regular Expressions) library to extract key terms.

Approach:

1. Converted text to lowercase.
2. Removed stopwords and words shorter than four characters.
3. Counted the frequency of remaining keywords using collections.Counter.

```
def extract_keywords(text):
    words = re.findall(r'\b[a-zA-Z]{4,}\b', text.lower())
    stopwords = {"this", "that", "have", "been", "with", "from", "they",
                 "were", "very", "about", "their", "what", "there",
                 "could", "would"}
```

return [w for w in words if w not in stopwords]

Most Frequent Keywords Identified:

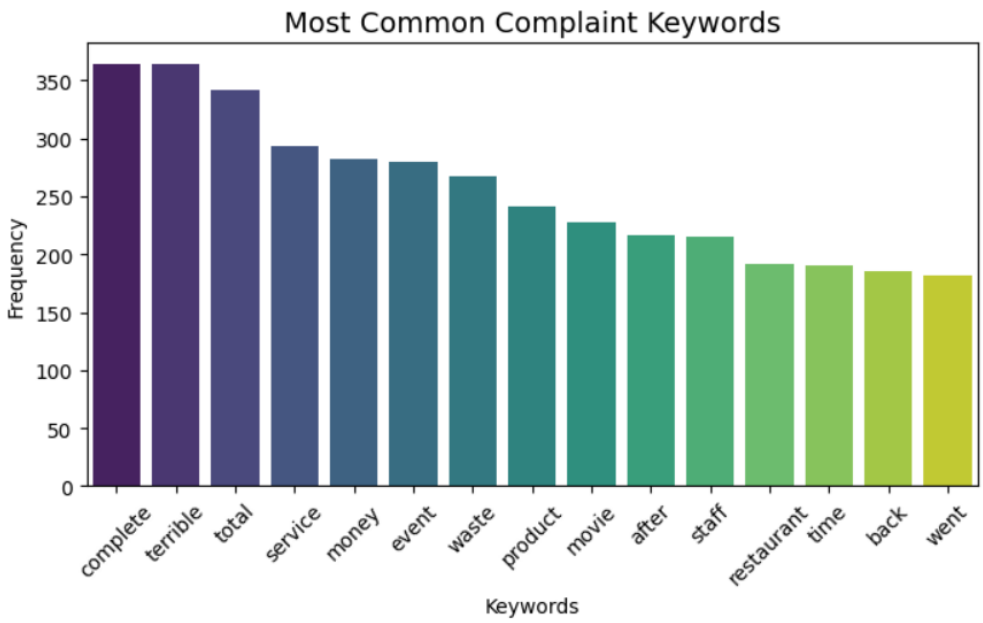
Keyword	Frequency
movie	7
event	6
venue	5
worst	3
sound	3
staff	3
dirty	2
uncomfortable	2
waste	2

Insight:
These keywords point to repeated dissatisfaction with aspects such as event quality, venue maintenance, and overall management.

Step 5: Data Visualization

a) Sentiment Distribution Chart:
A bar chart illustrated the overwhelming proportion of negative feedback, visually confirming a uniform trend of dissatisfaction.

b) Keyword Frequency Chart:
Another visualization highlighted the most frequently mentioned complaint keywords. Commonly cited terms like *"movie," "event," "sound,"* and *"venue"* emphasize customer frustration related to event organization, ambiance, and service experience.



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6. Insights Derived

After conducting sentiment and keyword frequency analysis, several critical insights emerged:

1. Overall Negative Experience:
   Every review reflected dissatisfaction, often mentioning boredom, poor quality, and the perception of wasted money.

2. Venue and Comfort Concerns:
   Frequent mentions of terms such as *"dirty," "cramped,"* and *"uncomfortable"* suggest strong discontent with the venue's physical conditions and overall comfort level.

3. Service-Related Issues:
   Words like *"staff," "rude,"* and *"unhelpful"* indicate recurring issues with staff behavior and customer service quality during events.

4. Sound and Organizational Problems:
   The use of terms such as *"sound," "terrible,"* and *"chaotic"* points to major concerns regarding audio quality and event coordination.

5. Perceived Lack of Value:
   Repeated phrases like *"waste of money"* and *"complete rip-off"* highlight that attendees felt the experience was overpriced and failed to deliver adequate value.

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7. Recommendations

Based on the insights obtained, the following actionable recommendations are proposed to address the identified pain points:

Area of Concern	Recommended Action
Event Organization	Strengthen event planning, coordination, and scheduling to ensure seamless execution.
Venue Cleanliness & Comfort	Allocate resources for better venue maintenance, improved seating comfort, and higher hygiene standards.
Sound & Technical Setup	Upgrade audio systems and conduct thorough sound and equipment checks prior to each event.
Staff Training	Implement structured training programs in customer service and hospitality to reduce complaints regarding staff rudeness or unhelpfulness.
Customer Retention	Introduce refund or discount policies for dissatisfied customers to rebuild trust and encourage repeat attendance.
Marketing Strategy	Ensure advertising transparency so that marketing communications accurately reflect the actual customer experience.

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8. Conclusion

This analysis underscores the importance of leveraging sentiment analysis and keyword-based trend extraction to better understand customer experiences.
All the reviews examined expressed negative sentiments, revealing an urgent need for operational, technical, and experiential improvements.

Implementing the proposed recommendations can help to:

- Significantly enhance customer satisfaction levels,
- Minimize customer churn and mitigate negative publicity, and
- Strengthen brand reputation through consistent, high-quality service delivery.

In essence, user feedback analysis serves as a powerful, data-driven decision-making tool — transforming negative customer experiences into actionable strategies that foster long-term growth and customer loyalty.

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9. Tools Used

Tool	Purpose
Python (Jupyter Notebook)	Primary environment for conducting the analysis.
Pandas	Data cleaning, transformation, and manipulation.

Tool	Purpose
Matplotlib / Seaborn	Visualization and creation of analytical charts.
Regex (re library)	Text preprocessing and keyword extraction.
Counter (collections)	Counting and analyzing keyword frequencies.

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10. Next Steps

To extend and enhance this project, the following next steps are recommended:

1. Automated Sentiment Classification:
   Integrate AI models such as *Hugging Face Transformers* or *OpenAI models* to automatically classify untagged reviews in real time.
2. Interactive Dashboard Development:
   Create a real-time, interactive dashboard using Streamlit or Power BI for continuous monitoring of customer sentiment trends.
3. Dataset Expansion:
   Enrich the dataset by incorporating customer reviews from multiple external sources such as Amazon, Trustpilot, and Reddit to achieve broader coverage and deeper insights.
4. Automated Reporting:
   Implement a scheduled reporting system to generate weekly or monthly insights, enabling management to track performance and improvement over time.