Analysis of Preference of Tourist Destination using Twitter: Case Study on Theme Park in Seoul, South Korea

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Introduction

Studies have been conducted to analyze SNS for the purpose of recommending meaningful tourist destinations for tourists.

However, existing studies do not consider the opinion about a destination because they consider only the frequency of destination mentions.
Purpose of study

Quantifying the preference for tourist destinations by considering positive and negative opinions about the destination mentioned in the SNS.
Analysis

“Theme park in Seoul”

138 POIs
Analysis

✓ workflow

- Creating a Corpus
- Removing stop words
- Extracting Twitter texts Containing theme park POIs
- Morphological Analysis
  - Calculating the frequency of Mentions for each theme park POI
  - Extracting sentiment words in the text
- Sentimental Analysis
- Quantifying the preference of Theme parks
Analysis

✓ workflow

### Analysis

**workflow**

1. **Creating a Corpus**
2. **Removing stop words**
3. **Extracting Twitter texts Containing theme park POIs**
4. **Morphological Analysis**
5. **Calculating the frequency of Mentions for each theme park POI**
6. **Extracting sentiment words in the text**
7. **Sentimental Analysis**
8. **Quantifying the preference of Theme parks**

**SNS data**

- (2015.7.22-2016.2.26)

- 273,515 data

- 1,674 twitter texts
- 38 theme park POIs

**Seoul Theme park POIs DB**

**Spatial Sentiment Lexicon**
Analysis

✓ workflow

Analysis of Preference of Tourist Destination using Twitter: Case Study on Theme Park in Seoul, South Korea

Inyoung Chae
Analysis

✔ workflow

<table>
<thead>
<tr>
<th>Spatial sentiment words</th>
<th>POS</th>
<th>Sentiment polarity</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommendation</td>
<td>Noun</td>
<td>Positive (+1)</td>
<td>1.000</td>
</tr>
<tr>
<td>Best</td>
<td>Noun</td>
<td>Positive (+1)</td>
<td>1.000</td>
</tr>
<tr>
<td>Pleasant</td>
<td>Adjective</td>
<td>Positive (+1)</td>
<td>1.000</td>
</tr>
<tr>
<td>Noisy</td>
<td>Adjective</td>
<td>Negative (-1)</td>
<td>0.976</td>
</tr>
</tbody>
</table>

Table 1. Example of Spatial Sentiment Lexicon
Analysis

<table>
<thead>
<tr>
<th>Twitter text</th>
<th>Spatial feature</th>
<th>Sentiment word</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have a test tomorrow, but Lottaworld Christmas atmosphere is very good!</td>
<td>Atmosphere</td>
<td>good</td>
</tr>
</tbody>
</table>

Table 3. Example of Twitter text of the second type

<table>
<thead>
<tr>
<th>Type</th>
<th>Subject</th>
<th>Negatives</th>
<th>Predicate</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Theme park POIs</td>
<td>not</td>
<td>Sentiment word about places (adjective, verb, noun)</td>
<td>Lottaworld, (not), good</td>
</tr>
<tr>
<td>2</td>
<td>Spatial feature</td>
<td>not</td>
<td>Sentiment word about places (adjective, verb, noun)</td>
<td>Street, (not), pretty</td>
</tr>
<tr>
<td>3</td>
<td>Spatial feature</td>
<td>not</td>
<td>‘many’ or ‘little’</td>
<td>Flower, (not), many</td>
</tr>
</tbody>
</table>

Table 2. Types of sentences for sentimental analysis
Analysis

✓ workflow

The frequency of mentions

\[
preference(k) = \frac{F_k}{\sum_{i=1}^{P_z} (D_i \times P_i)}
\]

- \(k\): Theme park POI
- \(F_k\): The frequency of theme park mentions
- \(i\): SNS text containing
- \(D_i\): Sentimental direction of (positive:+1, neutral:0, negative:-1)
- \(P_i\): Sentimental probability of (0 ≤ \(P_i\) ≤ 1)

Results

### Amusement park in Seoul

<table>
<thead>
<tr>
<th>Rank</th>
<th>Theme park POI</th>
<th>Preference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>The lake, beautiful</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The street, beautiful</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The atmosphere, good</td>
</tr>
<tr>
<td></td>
<td>Lotteworld,</td>
<td>best</td>
</tr>
</tbody>
</table>

<Key expressions>

- The lake, beautiful
- The street, beautiful
- The atmosphere, good
- Lotteworld, best
Results

Dosan park

Yeouido Hangang Park – representative park in Seoul

<Key expressions>

The park, quiet
The park, stroll
The park, best
Conclusion

✓ These results may provide useful information for tourists who want to visit the park on the first trip to Seoul.

✓ We may help tourists to plan a travel route by analyzing the preference for various types of tourist destinations.
References


Thank you

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