Research on Satisfaction of Habitat Natural Environment

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Abstract. With the continuous development of China's economy and the deepening of urbanization construction, the public's requirements for the quality of living environment are getting higher and higher. The good natural environment of human habitat is the necessary prerequisite for the sustainable development of regional social economy. On the one hand, it is also a powerful guarantee for improving public satisfaction and improving the quality of public life. The Beijing-Tianjin-Hebei urban agglomeration is centered on the capital and is an extremely important area for population gathering in China. However, due to many factors such as fragile ecological environment, unreasonable economic structure, imperfect environmental protection and management system, etc. It faces greater pressure for improvement.

1. Introduction
The natural environment of human habitats has a very important impact on the public life and work of the region. The improvement of the ecological environment does not only mean the construction of the natural environment itself, but also the interaction between the public and the ecological environment. The traditional research on ecological environment assessment is mainly based on environmental monitoring statistical indicators, based on the subjective evaluation of the public. There are relatively few case studies of the situation, and in fact, this aspect is the study of the public's psychological state in the human settlement environment involved in the theory of human settlements, although some scholars' research involves the public's subjective evaluation of the living environment. However, subject to the limitations of its data collection methods, it can only be subjective evaluation of the public in a small area, thanks to the development of Internet media and the improvement of current natural language processing methods, using network data for relatively large-scale personal data. Information collection and analysis is possible [1]. This study uses the relevant text information of Weibo and related statistical data to take a comprehensive analysis of the subjective level of the information on the natural environment response measures of the Beijing-Tianjin-Hebei region, taking the Beijing-Tianjin-Hebei region as an example, and draws the public to the people in the Beijing-Tianjin-Hebei region. The satisfaction status of the improvement of the natural environment has supplemented and improved the relevant theories and case studies of human environmental science.

2. Method
2.1. Research methods related to quality assessment of human habitat natural environment
The traditional research on the evaluation of human habitat natural environment is mainly based on objective evaluation. Considering that the core of human settlement research is to satisfy the
environment suitable for human life and production, the human settlement environment based on public subjective evaluation is also very necessary. With the popularization and application of Internet media, more and more people participate in the information interaction platform built by the Internet, and express their opinions and opinions on the media or the information provided by others through the comment function provided by the network platform. Public participation in social media and other interactive comments reflects the individual's emotional attitude towards the information disclosed by social media, and this attitude tends to reflect the public's satisfaction with the object of the comment. In view of the high degree of popularity of Weibo information, the microblog text related data can better reflect the emotional state of public participation in social topic discussion, such as Wang Wei and other people's views on the "British Brexit" event through the microblog text information. The emotional response was analyzed [2]. Therefore, this paper draws on relevant research, uses natural language to analyze texts, and conducts research on the improvement of human settlements' natural environment in Beijing-Tianjin-Hebei region through subjective evaluation and analysis.

The evaluation of the natural ecological environment quality of human settlements is mainly composed of urban ecology, urban greening and environmental quality. Urban ecology includes urban ecological environment protection and biodiversity. Urban greening mainly covers urban greening and park construction. Environmental quality includes air quality, water environment quality and noise environment quality. Based on this evaluation system, this paper establishes a research system for the satisfaction evaluation of the natural environment quality improvement of the people living in Beijing, Tianjin and Hebei. As shown in Table 1

Table 1. The relevant parts of natural environment from the evaluation index system of Chinese living environment prize

| Indicator standard       | Indicator standard                                                                 |
|-------------------------|-------------------------------------------------------------------------------------|
| Green coverage rate in built-up areas(%) | ≥40%                                                                               |
| Built-up area green rate(%)        | ≥35%                                                                               |
| Per capita park green area(㎡)     | ≥12                                                                                |
| Park Greenland Service Radius Coverage Rate (%) | ≥90%                                                                               |
| Green plant promotion rate (%)     | ≥70%                                                                               |
| The number of days with AQI ≤100 accounts for ≥80% of the total number of days in the year. Inhaleable particulate matter concentrations are 10% below the regional average. The PM2.5 concentration dropped significantly and the urban air quality improved significantly. |
| The compliance rate is 100%, and there is no black and odorous water body in the built-up area; the primary protection area of the centralized drinking water source area meets the requirements of specific projects. |
| ≤60db                                                                                 |

The living environment is a collection of relationships between people and the natural and social space in which they live. It is a place where human beings live together. The fundamental purpose of the construction and development of human settlements is to better meet the production and life of the local public. In terms of the composition of the living environment, according to the content, it can be divided into five systems: natural system, human system, living system, support system, and social
system. The natural environment of human habitat refers to the natural system that has an important impact on the human settlement environment Factor [3].

2.2. Satisfaction evaluation and analytical theory

This paper refers to Shen Lei's research [4], using a dictionary-based sentiment analysis method to analyze the satisfaction of the collected microblog text. The specific analysis steps are as follows:

1. Using the jieba word segmentation tool to perform word segmentation on the filtered microblog content by sentence. The Jieba participle is an open source tool written in Python by nicknamed fxsjy, gumblex etc. The main functions of jieba participle include analysis, dictionary editing, etc, which are widely used due to their strong practicability. Through the word segmentation process, the characteristic words in the text are identified and labeled. In general, the emotional polarity words in the sentence can reflect the author's emotional attitude to a large extent, such as:

   "The weather is really good today!"

"Good" means the author's recognition of "weather", the degree adverb "true" and the exclamatory sentence form an emotional strengthening effect.

2. Load nouns and sentiment dictionaries, identify and label the topic features and satisfaction expressions mentioned in the microblog text. For new words, popular online words to make recognition and part of speech judgment, such as "to force" represents a positive, positive attitude. The emotional dictionary is established, and the negative or positive attribute status is judged by matching the emotional words in the dictionary. The emotional dictionary used in this paper is derived from the HowNet lexicon.

3. Calculate the satisfactory evaluation status of each microblog according to the satisfaction condition evaluation formula. Remembering the satisfaction status (satisfaction) of each Weibo content is s, then the satisfaction status of Weibo is mainly caused by the emotional words (positive, denoted as p) or negative (negative) in Weibo. The degree of modification (degree, recorded as d) adverbs, and the contrast or transition of semantic organization (contrast, recorded as c) and other factors, then, the satisfaction status of a comment under a microblog information can be determined by the following formula (1) indicates:

\[
s = \sum_{i_1}^{r_1} \sum_{i_2}^{r_2} dpc - \sum_{i_2}^{r_2} dnc
\]

Where \(i_1=1, 2, 3... r_1\); \(i_2=1, 2, 3...r_2\), d are represented by the quantitative description of the degree words in the dictionary, and the degree levels adopted in this paper are respectively 0.5, 2, 3, 4, a total of four levels; n and p are respectively derogatory words or derogatory words appearing in Weibo Word part, when the search word is a derogatory or derogatory word in the dictionary, it is recorded as 1, otherwise it is 0; c is represented by -1, which is used to represent the semantic reversal; m and n respectively represent the number of derogatory or derogatory words retrieved in the piece of information.

3. Conclusion

According to the sample statistics, in general, the public is most concerned about the air quality status response measures in the Beijing-Tianjin-Hebei region, followed by greening, water quality and other indicators, and the public's attention to the regional noise environment is relatively low. Judging from the public satisfaction situation expressed in the relevant microblog information comments, the public's response to the greening situation is higher than the negative proportion of the positive feedback information, and other indicators related to the natural environment such as air, park, water quality, The negative proportion of noise environment response measures is relatively higher than the positive proportion. In general, the negative proportion of the public's higher attention to the statistics of Beijing-Tianjin-Hebei natural environment construction management measures is slightly higher than the positive proportion. See Table 2 for details.
Table 2. The analyse of attitudes to the most attractive actions of changing on natural environment of human settlements in Beijing-Tianjin-Hebei during 2014-2016 (arranged by category)

|                | Air   | Park  | Greening | Water quality | Noise  | Average |
|----------------|-------|-------|----------|---------------|--------|---------|
| Positive ratio | 26.1% | 25.5% | 31.8%    | 20.1%         | 15.3%  | 26.0%   |
| Neutral ratio  | 43.2% | 48.6% | 52.2%    | 46.7%         | 54.9%  | 47.5%   |
| Negative ratio | 30.7% | 25.9% | 16.0%    | 33.2%         | 29.9%  | 26.5%   |
| Average number of comments | 388 | 293 | 366 | 300 | 78 | 285 |

Combined with the analysis of the attitudes of the public about the sample information related to the response measures of the Beijing-Tianjin-Hebei natural environment, it is not difficult to find that the public participates in the improvement of the natural environment in the online media. On the whole level, the public has expressed a relatively high proportion of public construction measures for regional governments and the public sector, while the regional government has adopted a relatively low degree of recognition for administrative or comprehensive measures. Judging from the content of the information, the comprehensive measures involve more public participation in environmental governance related requirements. It is worth noting that in the information content related to public participation in environmental governance, the attitudes presented in most comments are relatively high.

Proportion of negative emotions.

(1) From the scale of information content published by microblogs such as media, media and related organizations account for the highest proportion of air quality-related content, followed by water quality, parks and other related content, and the lowest proportion of noise-related content. The public pays the highest attention to regional air quality and environmental information, followed by water quality environment and other categories. The public pays the least attention to the regional noise environment quality. From the public's evaluation of the various measures of the Beijing-Tianjin-Hebei natural environment, the public the water quality environmental response measures have the highest negative proportion, followed by air quality. This indicates that Beijing-Tianjin-Hebei still has room for improvement in environmental improvement such as water quality and air quality.

(2) The research in this paper reflects that the public's subjective attitude towards the local natural environment response measures is diversified. From the analysis of the attitudes in the comments, the public's satisfaction with the natural environment quality of Beijing, Tianjin and Hebei is relatively low. According to the relevant explanation of the theory of satisfaction formation, this is inextricably linked with the public's own expectations, feelings and evaluation criteria for the natural environment of human settlements. Therefore, in order to further improve the public satisfaction situation and improve the residents' happiness index, all localities should carry out the future construction and management of human natural environment according to their natural environment foundation and with reference to local public psychological expectations, feelings, evaluation criteria, etc.

(3) The public in different regions have different attitudes towards the natural environment information of human settlements. In terms of the situation of concern, Beijing has the most commentary on the relevant natural habitat response measures, followed by Hebei and Tianjin, which reflects to a certain extent that Tianjin citizens have the least concern about the improvement of human settlements. In the response measures of natural habitats in Beijing, the public is most concerned about air quality related content, while Tianjin and Hebei are respectively water quality and green environment. The public's satisfaction with the improvement of Beijing's natural environment quality is relatively low, and Tianjin and Hebei are relatively high. In terms of categories, the public has the highest negative attitude towards the noise environment in Beijing, while Tianjin and Hebei are the park environment and water quality environment respectively. The public's satisfaction with the situation of the natural environment response measures of the three places is different.
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