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# Tourist Satisfaction Analysis of Rural Cultural Tourism Based on the Enhanced IPA Model

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## 1. INTRODUCTION AND RESEARCH QUESTIONS

Rural cultural tourism is one of the important ways to implement the rural revitalization strategy. However, the COVID-19 epidemic has brought a huge impact on the tourism industry. Rural cultural tourism also suffered from the impact of the epidemic. In the severe market environment, it is an important means to promote the healthy development of rural cultural tourism to construct and manage based on the demand side. In this context, it is necessary to explore fully the tourists' satisfaction, starting from the tourists' personal feelings, to improve the rural cultural tourism products, enhance their competitiveness, and promote their development healthily and orderly.

In order to analyze the tourist satisfaction of rural cultural tourism, this paper proposes an enhance IPA model (i.e., Importance-Performance-Frequency Analysis, IPFA) based on SIPA model<sup>[1]</sup>, and uses the tourist reviews<sup>[2]</sup> in tourism online social network platform as research material. IPFA based on three dimensions can classify attributes into eight categories, while SIPA only divides the attributes of tourism products into four categories. IPFA can analyze the tourists' satisfaction in a fine-grained way.

## 2. THEORY AND RESEARCH FRAMEWORK

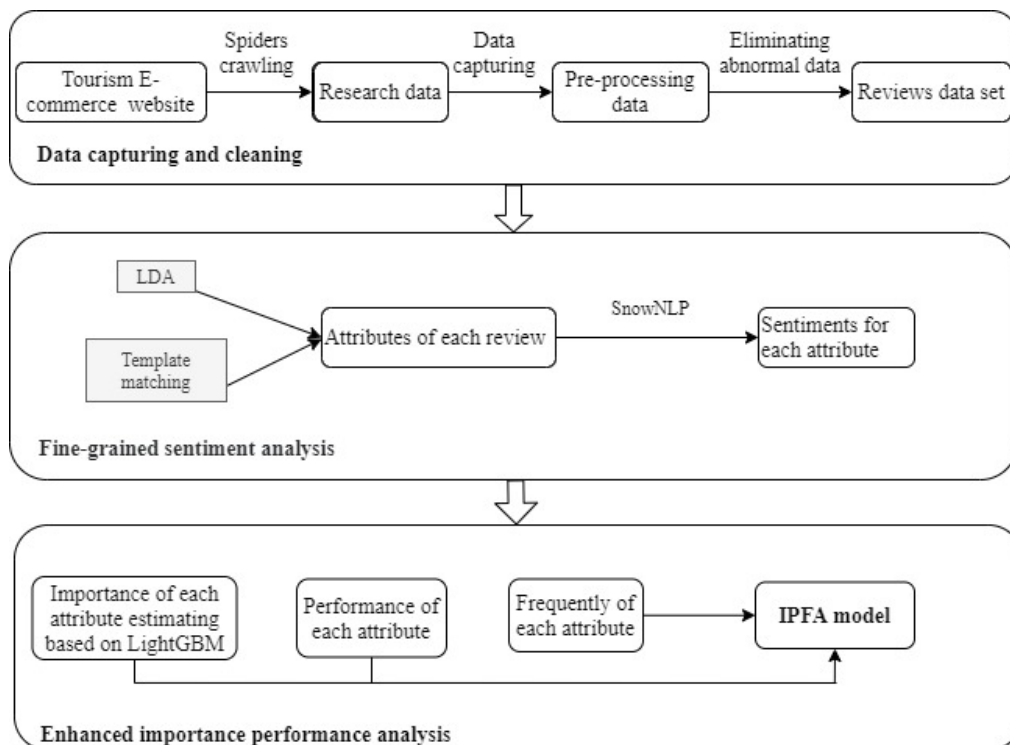


Figure 1. Analysis structure of tourist satisfaction based on IPFA

Aiming to analyze the tourist satisfaction based on the online reviews, the overall structure of the method proposed in this paper is shown in Figure 1. There are three steps in the method, including reviews data capturing and cleaning, fine-grained sentiment analysis and improved IPA.

### 3. RESULTS AND MAJOR FINDINGS

We choose several typical rural cultural tourisms as the research objects. After removing the invalid data, 38477 online comments are obtained as the research data of this paper. Based on LDA, 14 attributes are obtained from the online comments. Based on the emotional orientation value of each attribute under each comment, the performance and frequency of tourists for the 14 attributes of scenic spot products are calculated. Combining the importance of attributes extracted by LightGBM<sup>[3]</sup>, using IPFA analysis, we can obtain the classification of fourteen attributes, as shown in Table1.

**Table 1. IPFA analysis results**

Categories ID	Categories Name	Attributes
C1	special keep up the good work	natural scenery, entertainment experience
C2	general keep up the good work	-
C3	special concentrate here	consumption perception, tourism services, transportation
C4	general concentrate here	commercialization, passenger flow
C5	special possible overkill	Architecture, folk customs
C6	general possible overkill	Accommodation, cultural environment
C7	special low priority	catering
C8	general low priority	Infrastructure, scenic spot management

### 4. CONTRIBUTIONS

In order to analyze the tourist satisfaction of rural cultural tourism deeply, this paper designs an enhanced IPA model, IPFA, based on SIPA, and uses the tourist reviews in tourism online social network platform as research material. IPFA based on three dimensions can classify attributes into eight categories, while SIPA only divides the attributes of tourism products into four categories. Thus, the online satisfaction of tourists can be analyzed in a more fine-grained way by IPFA. However, the methods and conclusions of this paper are still preliminary and limited. Our ongoing work is to consider the following aspects: (1) select more rural cultural tourism products and online review data, to mine more accurate information and to provide more helpful reference for tourism managers; (2) the method we proposed has certain universality and can be also applied to the analysis of customer satisfaction of other products/services.

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