

Visualization of Beach Value (Part of Coast Use)

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1. Background and purpose of the study

Beach maintenance is one of the important issues in coastal management. However, in evaluation of projects such as erosion control measures, only the benefit of protecting the hinterland of beach evaluated quantitatively and neither use benefit nor environmental benefit of sand has been evaluated. In recent years, however, activities for using beach as a base of tourism / leisure have started, including "Hama (beach) Tourism Promotion Project" by the Water and Disaster Management Bureau of the Ministry of Land, Infrastructure and Transport (MLIT) and it is also required to establish a method of clearly "visualizing" the benefit of beach maintenance to support such activities.

Hence, this study intends to provide a method of quantitatively evaluating the environmental and use values of beach and tried to evaluate the use value for fiscal 2018.

2. Method of evaluating the use value of beach

Previous studies on evaluation of beach are based on the travel cost method (TCM) or contingent valuation method (CVM) but coast administrators have to bear a large cost to implement such methods by themselves. Then, we decided to provide the standard value (basic unit) of beaches by TCM so that coast administrators can easily evaluate beaches without conducting new survey, and calculated on a trial basis using various means, including use of previous statistics, WEB questionnaire, and position information of mobile phones.

In the Web questionnaire, about 300,000 out of about 4,000,000 people answered the question about whether they visited any mountain, lake, beach, etc. in the last year. Of them, we obtained information in combination of departure and destination locations (OD data) from about 50,000 people (Fig. 1). The differences between prefectures in the number of travelers for sea bathing obtained by the method above were generally the same in the trend as those in the published statistics of the number of beach users.



Fig. 1: Example for the breakdown of departure locations of beach visitors

Of the respondents to the WEB questionnaire, we asked some 4,300 people in detail about destination and means and cost of transportation. With results of this questionnaire, we calculated the recreation value for each use of beach, such as 18,149 yen for Kanagawa.

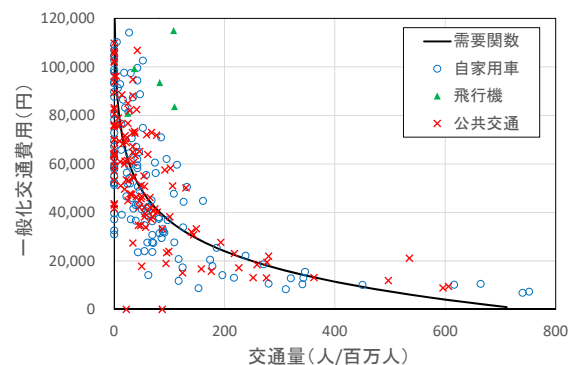


Fig. 2: Transport cost and traffic volume of travels to Kanagawa-ken for beach use (Number of travelers from each prefecture converted per million people)

3. Future development

We intend to calculate and publish the basic unit of use value attributable to beach for each prefecture and provide an evaluation method practicable for coast administrators.