Comparison and application of different contingent valuation methods in measuring total economic value of restoring Ejina Banner's ecosystem services

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Abstract

The contingent valuation method (CVM) is one of the techniques which is most widely used for estimating the value of environmental goods, its main forms can be classified into open-ended question and closed-ended question formats. It is obviously important to compare the distinction among different forms of CVM. In this paper, we take Ejina Banner as a case to analyze the WTP of restoring ecosystem services and compare the differences among different forms of CVM. We have carried out 500 samples in-person interviews for open-ended and closed-ended question format at respectively during the summer of 2002. We employed a non-parametric and a parametric model to estimate the results. Calculated results suggested that the mean WTP estimated by closed-ended question format is 3-4 times of them can WTP estimated by open-ended question format. No clear difference exist between the mean WTP estimates of open-ended format and pay-card format. It has been found that double-bounded format have a much tighter confidence intervals for the estimate of mean WTP than single-bounded format, and is more closely approximate to the true WTP of respondents. Therefore, we suggested that the estimation results of double-bounded format as the total economic value of restoring Ejina Banner's ecosystem services. The aggregate benefit (present value) of restoring Ejina Banner ecosystem to residents of the Heibe basin is ¥3.01 million annually for 20 years. Taking into account the market discount rate, the aggregate benefit is ¥36.74 million for 20 years.
In the end, we discuss the issues of how to apply the contingent valuation method in developing country, and believe future efforts may be able to apply CVM efficiently accompanying with benefit-cost analysis and evaluating the validity of various survey forms through more practical example.