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Abstract

APPLICATION OF STATISTICAL APPROACH TO
PUBLIC SURVEY FOR ENVIRONMENTAL ISSUES

by

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The intention of thesis was to investigate residents' opinions about environmental issues in Macau by the way of telephone survey. Furthermore, the thesis would explore how large the sample size should be the most appropriate on the basis of probability distribution under the condition of a given sampling error. The opinions were collected by conducting sampling telephone interviews, and the systematic sampling method was adopted to select the respondents, which is based on the concept of probability statistics. The chi-square (χ^2) test of independence was conducted to deduce the strength of the relationship between two features.

The public survey on pollution of "cooking oil & fume emission from restaurants" was conducted in September 2002, and the response rate was 53.3% as well as the sampling error was $\pm 3.4\%$. With reference to the collected data, it was found that 68.3% of respondents indicated that cooking oil & fume from restaurants

affected their living conditions to some extents, and 56.2% of the respondents agreed that Macau government should regulate the cooking oil & fume emission from restaurants by legislation. Moreover, Approximately 54% of the respondents accepted increasing cuisine price around MOP\$3 for sharing the expenditure of cooking oil & fume equipments installation. According to the result of chi-square (χ^2) test of independence, the relationship with cooking fume pollution was observed and the adverse extent of cooking fume was significant. It was recommended that diminishing the visible obstacles of cooking fume was one of the most important aspects in improving the public attribute towards cooking fume and odour emission.

The survey of public opinions on “environmental expenditure in improving air pollution” was conducted in December 2002, the response rate was 45.0% as well as the sampling error was $\pm 3.6\%$. It was found that almost half of respondents thought that air pollutants came from vehicular emissions and 69.2% of respondents agreed with governing vehicular emission by government. Furthermore, 47.8% of respondents were willing to pay for money in order to prevent households from air pollution. Finally, the conclusion was drawn that all Macau residents can afford approximately MOP\$ 19,000,000 per year in improving air quality environment on the basis of inferential statistics.