

The Way to Do Well the Statistical Practice Teaching Centered on the Problem

Taking the Case of Public Opinion Survey

Shunqi Hu

School of Economic Management
Zaozhuang University
Zaozhuang, China 277160

Abstract—The change from knowledge-centered to question-centered is an important means of statistical practice teaching, and it is also an important way to improve students' statistical application ability. The public opinion survey is an important means for the government to observe public opinion, raise and improve policy decision, and it is an important content of statistical practice teaching. In the public opinion survey practice, we should cultivate and enhance students' practical ability by establish a clear research objective, scientific sampling, scientific and reasonable design, improve investigation skills, conduct an independent investigation, objectively presenting investigation conclusion and so on.

Keywords—practical teaching; public opinion; statistical investigation; objective reality

I. INTRODUCTION

Effective investigation of the public opinion survey is an important part of government work, it can not only protect people's political, economic, social and cultural rights and interests, but also enable people to communicate with government. A good public opinion survey will help to check the public opinion and ensure the scientific rationality of government policy decisions. In the statistical teaching of financial management majors, it is necessary to highlight the practicality, and the public opinion survey as an important practice teaching content, change the knowledge explanation as the problem solution, guide students to focus on to solve the following key problems in the investigation practice, improve practice teaching effect. The teaching effect will lay a solid foundation for public opinion survey in future work.

II. THE CLARITY OF THE PURPOSE OF THE INVESTIGATION

Public opinion survey covers a wide range, including political, social, economic, ideological, cultural, ideological and so on. However, due to the limitation of resources conditions, the focus of actual investigation should be on the investigation of the real people's livelihood issues that are most concerned by the government and the people. Students in the school mainly participate in government commissioned or school research projects and collect opinions and suggestions from the people on policies and regulations, administrative management, and implementation of work plans. At present,

the society is full of all kinds of irregular and unlawful behaviors such as market surveys and product promotion, which is under the guise of the public opinion survey, and it is easily cause people's repugnance. The sentiment of the government's statistical system never conducted market research involving commercial conduct and every investigation with the authority approval, the document number and the implementation plan, a clear purpose and significance of the targeted. If the respondents disagreed with the purpose of the investigation and questioned the authenticity of the investigation agency, the respondents will generate resentment so that they are unwilling to cooperate with the investigation or respond casually. Therefore, in practice, students should clarify the purpose and significance of the survey accurately prior to the investigation, and indicate the legitimacy and authority of the representative bodies, and strive for the active cooperation of the respondents.

III. THE SCIENTIFIC NATURE OF THE SAMPLE SELECTION

In the investigation practice, the results are often biased by unscientific sampling methods. Students should be aware that the overall distribution should be fully taken into account in sampling, and the sampling organization method should be selected scientifically. The basis and core of the sample inference is randomness, that is, the probability of each total unit being pumped is completely equal. Because the rationality of sample distribution can directly influence the result of inference, in general, the stratified sampling design is better than simple random sampling, cluster sampling or multi-order sampling. The sample size determined by sampling design corresponds to the total and the set error size represented by the sample. Over summarization or cross summarization may lead to insufficient representation due to insufficient sample size, which makes the aggregated data not fit the objective reality very well. Even though the statistical errors appear mostly in the observation of small samples, even for large samples, sampling methods must not be biased, and they should be adequately representative, otherwise, the sample may still lead to erroneous conclusions. It guarantees the randomness of the sample selection to guarantee the representative of the investigation, and the representative can guarantee the data quality. For example, nationwide survey statistics, the sampling should take into account the

geographical distribution of the East-west region of the uneven and urban and rural differences, ethnic differences, age differences, gender differences, professional differences, educational differences, etc. The sample unit is the family or the individual; home phone surveys should consider families without phones, mobile phone surveys should consider multiple phone numbers for one person, etc. these problems will have an effect to infer the overall, improper handling can reduce the credibility of the conclusion.

Improper or uncontrollable sample selection is often the main source of bias. Some people think that Internet survey is very convenient, as long as the questionnaire answers published on the web page and then click the submit to complete, actually this kind of investigation because sample not controllable, and the proportion of respondents who reject the answers is high. As a result, survey results are often biased because they reflect only the views of certain specific Internet users (readers). Immediately after the killing of the medical report, the Internet users were surveyed and asked about the respondents' feelings. Of the 6,161 respondents, 4,018 chose "happy" (65%). In fact, the results of such investigations are biased. People who see this news will have their own opinions, but few people will actively respond to this survey. Often, only those doctors who have had unhappy doctor-patient conflicts are more willing to participate. This investigation, because of the uncontrollable sample, apparently the investigation result is not reliable.

IV. RATIONALITY OF QUESTIONNAIRE DESIGN

The quality of questionnaire is an important factor to improve the quality of investigation, and the questionnaire should be designed according to the survey objective, the cultural quality and identity background of the respondents. Questionnaires are usually provided by the entrusting party, but as an important content of statistics teaching, teachers require students to clearly investigate the basic principles of questionnaire design and try to allow students to design questionnaires. In practice teaching, students are required to grasp the following points: First, the design of the investigation is scientific, reasonable, timeliness, operability and accessibility. The time period involved in a question should not be ambiguous. The problem should be arranged from easy to difficult. The relevance of the question and the clarity of the respondents' responses should be fully considered. If a definition is to be provided, it should be done before the question is asked. Secondly, in order to improve the reliability of the investigation, the questionnaire should avoid the problem of ambiguity. Third, the problem of subjective perception judgment usually appears in the form of option, and it is necessary to improve the range of the options. Fourth, improve investigation validity through scientific setting survey index. Fifth, after the questionnaire design is completed, it is usually necessary to conduct a pre-survey evaluation of the survey questions so as to find out the problems and improve them in time. In practice teaching, students are gradually allowed to understand these issues. In the design of the questionnaire, students should be reminded to avoid the problem of YES••SET, which inadvertently preset problems that can anticipate answers. For example, do you want humans

to live longer? Would you like to have more income? Do you want your family to be in good health? Would you like to pass the exam? And so on. In fact, the answer to these questions is self-evident. In addition, when the problem showed suggestive content, answer bias is inevitable. This requires the design of the questionnaire to ensure the neutrality of the problem.

V. PROFESSIONALISM OF SURVEY SKILLS

Public opinion survey is a strong professional artistic work, in addition to the statistics, students need to have a certain level of multidisciplinary knowledge, especially in economics, sociology, psychology, computer technology and so on, while also require high quality, clear mind, a strong sense of responsibility. Students should be familiar with the information collected, in addition to questionnaire survey, household survey, street access, in-depth interviews and other traditional forms, but also master the computer assisted telephone survey (CATI), E-mail survey, network survey as the representative of the new investigation means and methods.

Because of the fast pace of social work and the pressure, some people will be reluctant to investigate the psychological, its better to save trouble leads to reluctance to participate in investigation or perfunctory investigation, thus affecting the objectivity of the results of the investigation. Students should actively communicate with respondents in advance to obtain the understanding and trust of the respondents. During the investigation, students should be polite and generous, create a harmonious atmosphere, and always maintain a neutral attitude toward the issue. Non-responding units can be accessed at different times or randomly sampled from an unanswered unit for further investigation; alternatively, non-responsive survey units may be replaced by certain rules, such as strictly following the "right-hand principle" or the re-sampling is done in some other agreed way, the sensitivity of the problem can be used by randomization technology to deal with. In order to obtain the cooperation of the respondents, the students should abide by the strict system of investigation and confidentiality and publish the policy of secrecy to the society. Never disclose or sell the information of the respondent because of the personal interests of the individual or the group. This is both a professional ethics and a rule of law. Students must cultivate this awareness from the very beginning.

VI. INDEPENDENCE OF INVESTIGATION

The vitality of public opinion surveys lies in the objectivity and authenticity of the investigation. This requires independence and neutrality in the investigation activities, and it should avoid being both an "athlete" and a "referee". At the end of 2004, the National Bureau of statistics public opinion research center was formally established as the independent third party, and was commissioned by numerous ministries to conduct public opinion surveys. Subsequently, the public opinion survey institutions under the statistical system of provinces and cities also appeared. The national statistical system has successively opened a special number 12340 for social opinion surveys, which promotes the development of the public opinion in China.

At present, the majority of China's polling institutions are affiliated with the government (statistics) departments. The advantage is that the institutional attributes can guarantee the authority of the poll results. However, this kind of "family-friendly" with the government pollsters may from time to time by the will of the government, as a result, the results will be "corrected" by the relevant stakeholders, there may even be "rationality" from the provision of decision making to the active argumentation decision. As far back as 1967, the United States passed a law stating that all government departments should not conduct public opinion surveys on the common people, which should be used for reference. In statistical practice teaching, we should guide students to correctly understand and practice this problem.

VII. OBJECTIVITY OF THE INVESTIGATION CONCLUSION

In the statistical analysis of the survey data, should always maintain an objective and impartial attitude, consciously avoid any form of subjective prejudice, if selective extraction of data, it is impossible to reflect the true image of the survey. Due to the imperfect system regulations, the analysis of the results of the public opinion survey in the decision-making process sometimes mainly depends on the individual's idea and style. Students to resolutely overcome preconceptions, biased and jump to conclusions too generalized thinking, the phenomenon of distinguish between correlation and causation, using the scientific method, logic thinking, objective accurately and realistically analyze the results of the survey data in later period to ensure the objectivity of the investigation conclusion. A complete data description must be provided when the survey results are published; it is necessary to make a brief explanation and explain the calculation method for some indicators that are not familiar to the clients and can easily cause misunderstanding. To introduce the sampling methods, survey target, questionnaire recovery rate, if necessary, provide questionnaires, survey programs and other background information, so that the principal of the source of data, calculation caliber have a clear understanding. When providing survey results, it is necessary not only to have a total amount of indicators but also to have structural indicators, so that the commissioning party can form a comprehensive understanding of the problem. The results of the investigation and analysis are reported with a combination of textual narratives and charts.

VIII. CONCLUSION

Although in the teaching practice of statistics, students have a high degree of participation in the opinion polls and obtain some perceptual knowledge of the organization forms, investigation methods and means, they has been widely recognized by society, but there is still a certain gap from the scientific and efficient requirements, improve and perfect the statistical practice teaching still has a lot of practical problem to explore, change knowledge-centric to problem-centric is a good way.

REFERENCES

- [1] Lin Zhu. Discussion on the Objective Really of Public Opinion Survey[J]. China Statistics, 2011(9).

- [2] Hu Shunqi. Discussion on the Principles of Ethical Standardized of Statistical Investigation[J]. Statistics And Decision, 2013(14).
- [3] Dong Haijun, Zhou Qiang. Characteristics And Trends of Public Survey Theory And Statistics in China[J]. Research Word, 2011(70).
- [4] Qian Shiya, Chen Zhi. CATI Survey Quality Control [J]. China statistics,2010(10).
- [5] Yuan Wei. Government Statistics And Statistics Education[J]. Statistical Research, 2012(8).
- [6] Hu Shunqi. The Skills And Cultivation of Investigators in Statistical Investigation[J]. China Statistics,2013(1).