

论文

随机化策略的公平比较

内蒙古工业大学理学院\呼和浩特 010062;内蒙古工业大学管理学院010062;西安交通大学理学院\西安 710049)

摘要:

采用随机化技术对敏感问题实施抽样调查,至今已有很多可供选择的随机化策略;其中大多数策略是通过选择恰当的设计参数来达到改进效率的.然而两种方案即使具有相同的设计参数值,但对个体的保护度也可能不同.所以早期一些文献效率比较没有基于相同的对个体保护度,因此那些比较是不公平的.该文补充了这方面的理论.在相同的保护度下,精确比较了这些已有的策略;得到的结果表明:必须重新评价这些早期的随机化策略.

关键词: 比率的估计 随机化技术 敏感问题 放回的简单随机抽样 设计参数

分类号:

60F05

Abstract:

There have been many alternative randomized response strategies for implementing survey on sensitive question so far. And most of these strategies have improved survey efficiency by choosing appropriate design parameters. However, two different procedures with common design parameter values are of different protection degree to the respondents. Some earlier comparisons of those strategies are unfair because those comparisons do not provide the same degree of protection to the respondents in the two models. In this paper, the authors compare exactly the efficiency of some earlier strategies under same protection degree to respondents. The obtained results show that these earlier randomized response strategies must be reevaluated.

Keywords: Estimation of proportion Randomized response technique Sensitive questions Simple random sampling with replacement Design parameter

收稿日期 修回日期 网络版发布日期

DOI:

基金项目:

内蒙古自治区自然科学基金(200308020101)、内蒙古工业大学校基金、内蒙古自治区教育厅基金项目

通讯作者:

作者简介:

参考文献:

[1] Mangat N S, Ravindra Singh. An alternative randomized response procedure. Biometrika, 1990, 77(2): 439-442

[2] Anthony KUK Y C. Asking sensitive questions indirectly. Biometrika, 1990, 77(2): 436-443

[3] Fligner M A, Policello G E, Singh J. A comparison of two randomized response strategies. Biometrika, 1982, 69(1): 101-109

[4] Fligner M A, Pollock D G, Singh J. A comparison of two randomized response strategies. Biometrika, 1982, 69(1): 101-109

扩展功能

本文信息

Supporting info

PDF (352KB)

[HTML全文]

参考文献

服务与反馈

把本文推荐给朋友

加入我的书架

加入引用管理器

引用本文

Email Alert

文章反馈

浏览反馈信息

本文关键词相关文章

比率的估计

随机化技术

敏感问题

放回的简单随机抽样

设计参数

本文作者相关文章

闫在在

聂赞坎

PubMed

Article by Yan, Z. Z.

Article by Nie, Z. K.

ed response survey methods consideration for the level of respondent protection.

Commun. Statist Theory Meth, 1977, 6(8):1511-1526

[4] Nayak. On randomized response surveys for estimating a proportion. Comm

un Statist Theory Meth, 1994, 23(11): 3303-3321

[5] Warner S L. Randomized response:a survey technique for eliminating eva

sive answer bias. J Am Statist Assoc, 1965, 60(309): 63-69

[6] Horvitz D G, Shah B V, Simmons W R. The unrelated question randomized

response model. Assoc: Proceeding of the Social Stat Sec Amer Stat,

1967. 65-72

[7] Mangat N S. An improved randomized response strategy. J R Statist Soc, 19

94, 56B(1):93-95

[8] Lanke. On the degree of pretection in randomized interview. Internationa

I Statistical Review, 1976, 44(2): 197-203

[9] Lars Ljungqvist. A unified approach to measure of privacy in randomized

response model: a utilitarian perspective. Journal of the American Statistical

Association, 1993, 88(421): 97-103

[10] 闫在在, 聂赞坎. 严格 nps 抽样方案在不放回不等概率抽样方案中的

可容许性. 数学物理学报, 2002, 22A (4) : 489-493

本刊中的类似文章

文章评论 (请注意:本站实行文责自负, 请不要发表与学术无关的内容!评论内容不代表本站观点.)

反馈人	<input type="text"/>	邮箱地址	<input type="text"/>
反馈标题	<input type="text"/>	验证码	<input type="text" value="0424"/>