

AN ADROIT UNRELATED QUESTION RANDOMIZED RESPONSE MODEL WITH SUNDRY STRATEGIES[†]

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ABSTRACT. When sensitive topics such as gambling habits, drug addiction, alcoholism, tax evasion tendencies, induced abortions, drunk driving, past criminal involvement, and homosexuality are the focus of open or direct surveys, it becomes challenging to obtain accurate information due to non-response bias and response bias. People often hesitate to provide truthful answers. Warner introduced an ingenious method to address this issue. In this study, a new and unrelated randomized response model is proposed to eliminate misleading responses and nonresponses caused by the stigma associated with the attribute being investigated. The proposed randomized response model allows for the estimation of the population percentage with the sensitive characteristic in an unbiased manner. The characteristics and recommendations of the proposed randomized response model are examined, and numerical examples are provided to support the findings of this study.

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Key words and phrases : Proportion, sensitive attribute, unrelated attribute.

1. Introduction

Socioeconomic studies frequently touch on certain personal traits that individuals desire to keep private in extensive inquiries; thorough questionnaires contain a large number of items. Information about the majority of them is typically simple to find by just inquiring. A few others, though, could deal with delicate subjects for which individuals are hesitant to provide candid comments. For instance, most people prefer to lie about their savings, the amount of their wealth, their history of intentional tax evasion, and other illegal or unethical practises that result in earnings from clandestine sources, crimes, the trade in

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