Abstract

In every survey truthfulness is required so as to come up with valid data for decision making. Most surveys use direct questioning to collect data. This method does not yield reliable information when the topic under investigation is sensitive in nature. In such surveys, direct questions are not useful as the respondents will either refuse to answer the survey questions or, even if they do, may give false answers for fear of being known to have the sensitive characteristics. The less privacy a design offers, the more likely respondents cheat by disobeying the instructions thus giving very unreliable information which can lead to wrong decision making. In this study we have formulated a technique which we have called symmetric variant truth detection model. We have also formulated symmetric stratified truth detection model for analyzing stratified data. In this technique, we have used two randomization devices which do not require the respondents to disclose their identity thus increasing their privacy leading to more honest responses. After developing the models, they were validated by the use of data simulation as well as real life application. It was established that the symmetric truth detection models were more efficient compared to the asymmetric truth detection models. This study therefore recommended that researchers on sensitive information to use symmetric truth detection models as opposed to asymmetric truth detection models.