

Investigating Response-Driven Sampling: An Underutilized Tool for Difficult Populations

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Current statistical methodology is a topic important for the field of sport management and studies to discuss because the conversation created helps the field move forward and develop more sophisticated and accurate findings. Standard or conventional sampling and estimation techniques frequently involve researchers who select sample members to produce a known probability of selection. To generate the known probability of selection, many researchers develop a sampling frame from which they list all members of a population. Unfortunately, many populations due to size, hidden nature, or a combination thereof do not enjoy such a list. For unique populations, creating such a frame or list appears impractical or impossible due to the challenge of locating the target population and possible financial and/or time costs. Screening for membership especially appears extremely costly (e.g. money and time) and potentially inaccurate under traditional sampling methods for hidden populations. Resultantly, many cannot generalize their findings to the population of interest. Frequently, their primary reporting option focuses only on presenting a summary on the statistics generated about the sample, which they then leave open to interpretation to the reviewer (Salganik & Heckathorn, 2004). The struggle to collect information about hidden populations remains as a significant barrier for many important existing studies and some potentially valuable but unrealized topics.

Many traditional methods of sampling fail to make use of an important feature of many hidden populations; they are composed of people connected to others like them through some social network. The network prospective provides us with an innovative approach and great potential to study hidden populations because they are less costly and perhaps more accurate in some situations. An example of such a method is called chain-referral or respondent-driven sampling. Respondent-driven sampling is a form of chain-referral sampling methods first popularized by Goodman. Goodman (1961) introduced this sampling method from a mathematical perspective, which posited every person in a population group possesses equal probability of selection from another through nomination. The basic idea behind respondent-driven sampling centers on the opportunity for respondents to emerge from a network (e.g. friendship or professional) of existing members. Faguier and Sargeant (1997) also suggested this sampling technique emerged as a research tool that relies on participants' common interest, access within the population, and likelihood to contribute to and communicate the subject matter. The sampling process starts with the researchers selecting and recruiting a small number of "seeds" to participate in the study. Next, the seeds recruit others to join the study. Existing sample members are asked to proactively recruit other potential sample members until a desired sample size is achieved. Overall, a respondent-driven sample is determined by the real network of a selected population.

Conventional probability sampling designs require each unit to possess a known and constant probability of selection (Thompson & Frank 2000). Thus, the conventional wisdom embraced by many researchers suggests the lack of sampling frame and unknown probability of selection provides opportunity for respondent-driven samples to be identified as a non-probability or convenience sample from which only subjective evaluation seems appropriate. Overall, this provides the opportunity to question the estimations or conclusions drawn (Eland-Goosensen et al., 1997; Friedman 1995). Still, some promote the effectiveness and promise respondent-driven sampling holds for studying difficult and hidden populations (Salganik & Heckathorn, 2004). Browne (2005) reported few accounts describe to us how to implement and use chain-referral-like sampling methods. Furthermore, Browne (2005) stated although these sampling technique are, "mentioned within methods or methodological sections of papers, books, and book chapters, there has yet to be a sustained discussion regarding their technique," (p. 48). This presentation supports little respondent-driven sampling work occurs in sport management. Furthermore, the researcher feels previous scholars generated overly negative ideas about the use and results produced by chain-referral-like samples (Salganik & Heckathorn, 2004). This presentation will attempt to argue it is possible for respondent-driven sampling to generate unbiased estimates from a hidden population. To explain the respondent-driven sampling process, this presentation will describe how researchers can utilize existing information about a social network to create a working description about the characteristics of a target population. Next, the presentation will unveil the proper process for how to collect unbiased data in this method. This analysis is supported by the sample study presented. Real data collected from college students on the Division I (Bowl Subdivision) bowl selection process, Bowl Championship Series (BCS) arrangement, and the potential for a football playoff serve as the empirical example to aid understanding about the process, advantages, and drawbacks of respondent-driven sampling. The passionate debates emerging throughout the country concerning the Division I (Bowl Subdivision) football postseason arrangement are the highly controversial topic this study focused upon.

The thoughts and opinions of university presidents, athletic directors and football coaches are numerous and well documented by the popular media on this topic. Significant investigations by U.S. Congressional Committees, the Knight Commission, and academic journals also provide fascinating perspectives and data. However, the majority of these discussions and studies fail to

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secure the opinion of university students, a very important and sizeable group of people involved with college football. It appears difficult to identify all college football fans and effectively select a sample to survey from the large university student population. Thus, the challenge for researchers surrounds developing a sampling method, which could secure significant responses on such a highly controversial issue.