

Handling Nonresponse Error: Examining the Utility of Techniques Suggested by Miller and Smith (1983) in a Sport Management Context

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Obtaining an adequate number of completed questionnaires from a chosen sample is a common challenge when conducting survey research in sport management. One of the strengths of this type of quantitative research is the ability to gather information from a smaller group and make inferences back to a larger population based on what is learned from the sample. For this process to be valid, data collected from the sample must be representative of the larger group (Bartlett, Bartlett, & Reio, 2008). One of the major concerns associated with sample data representativeness is the systematic bias that can be introduced through low response rates. Survey nonresponse error refers to the possible bias introduced into a study when nonrespondents differ significantly from respondents. When this happens the external validity of a study can be deemed questionable. Also, if persons who complete and return a questionnaire are significantly different from those who do not, there is the potential that participants are not truly representative of the larger population. This problem is magnified when the population is determined to be more heterogeneous with respect to the characteristics of interest for a particular study (Dolsen & Machlis, 1991).

Several researchers have explored methods to handle nonresponse error. In particular, Miller and Smith (1983) are often cited for their seminal piece on techniques for controlling non-response bias. In particular, these researchers suggest several methods (beyond simply increasing the response rate), including: a) ignore the non-respondents; b) compare respondents to the population; c) compare respondents to non-respondents; and d) compare early to late respondents. These authors suggest that nonresponse bias can be a threat to the external validity of study with a response rate as high as 90%. Dooley and Lindner (2003) suggest that when a response rate reaches 85% nonresponse bias may not be an issue. However, these authors make this recommendation with caution as there are a limited number of studies which report data on nonresponse. While there is no consensus on the upper response rate threshold needed to eliminate the threat of nonresponse error, what is evident is the threat of nonresponse bias increases as the response rate of a study decreases. While there has been some investigation (Bartlett, Bartlett, & Reio, 2008; Dooley & Lindner, 2003; Linder, Murphy, & Briers, 2001; Werner, Praxedes, & Kim, 2007) on the utility of using one or more the techniques to control for nonresponse bias proposed by Miller and Smith (1983) a comprehensive examination of their usefulness in sport management has not been conducted. Therefore, the purpose of this study was to examine the utility of three strategies suggested by Miller and Smith (1983) in the context of a study on intercollegiate athletic coaches. Specifically, in an attempt to control for nonresponse bias this study compared (a) respondents to the larger population; (b) respondents to a group of nonrespondents; and (c) early respondents to late respondents on select variables.

As part of a larger online study, a stratified random sample of NCAA Division I head coaches from six sports (two from each season; football, women's volleyball, men's and women's basketball, baseball, and softball) were selected to participate in the current research (N = 950). A total of 269 (28.3%) of the respondents completed the online questionnaire. Miller and Smith (1983) suggest gathering information on the population, such as age, sex, and socioeconomic status when attempting to compare respondents to the larger population. This could prove difficult with a sample of intercollegiate athletic coaches, especially because of the mobility in this profession. However, with coaching samples there is a common variable that can be used to compare a group to the population – season winning percentage. In sports where one team competes against another (e.g., football, basketball, volleyball, baseball, softball, etc.), there is a winner and a loser. Therefore, in a given season, the population's average winning percentage will be .500. In the current study, the average winning percentage of respondents was .500, exactly the same as the entire population's winning percentage. (One might assume that the same would be true for career winning percentage. However, it should be higher than .500 because coaches with low winning percentages will not be retained. In the current sample, the career winning percentage of coaches was .525). It is recommended that all surveys on coaches include items on prior season's won/lost record. A second method suggested by Miller and Smith (1983) is a comparison of respondents to nonrespondents on specific variables of interest.

In the present study, respondents and non-respondents were tracked in a spreadsheet (to keep responses confidential). Through various websites, characteristics of the sample were gathered (age, number of years coaching, career winning percentage, and prior season winning percentage). According to Miller and Smith, if nonrespondents are not statistically different from the respondents, the results of a study can be generalized to the sample and population. Independent samples t-tests were used to compare respondents and non-respondents. Results showed no significant differences on any of the variables mentioned above, so the respondents were similar to the sample and the population. Finally, Miller and Smith (1983) suggest late respondents are often similar to nonrespondents. Therefore, if late respondents are not significantly different from individuals that respond early,

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results obtained from all respondents can be inferred back to nonrespondents, thereby controlling for nonresponse bias. However, Miller and Smith's claim (i.e., late respondents are similar to nonrespondents) has not been confirmed with a coaching sample. For this study, late respondents were defined as those who completed the questionnaire after the initial deadline (and after a follow-up email was sent). A total of 132 respondents (49.1% of the returns) were classified as late. Independent samples t-tests were again used, this time to compare late respondents and nonrespondents. There were no significant differences on any of the four variables collected; consequently, and congruent with Miller and Smith, late respondents were similar to nonrespondents. Finally, another independent samples t-test was conducted comparing early and late respondents. There were no differences in these two groups, so the respondents were comparable to the random sample. The importance of securing a representative sample cannot be understated. Without it, the generalizability of the study is questionable and the findings are limited. The techniques used in the current study have shown that even with a low response rate (i.e., 28.3%), respondents can be representative and the findings can be generalized to the larger population. Areas of future research and other suggestions for handling non-response error will be discussed in more detail.