

The Impact of Differing Survey Methodologies on Response Rate

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Introduction

In social science research, surveys are a cost-effective way to assess participant's beliefs and attitudes (Dillman et al., 2014). Surveys can be in the form of traditional print, electronic, and also telephone. Traditional mail surveys were utilized most often prior to web-based surveys (Manfreda et al., 2008). In the 21st century, web-based surveys are used as a way to reduce cost, instant availability of data, and for their ease of use (Cook et al., 2016; Smyth et al., 2010). Although internet surveys have become popular, research has indicated that traditional mail surveys still have a higher response rate than that of an internet-based survey (Dillman et al., 2014). Additionally, response rates are lower when both a web mail survey and a traditional mail survey are offered to respondents (Smyth et al., 2010). Millar and Dillman (2011) indicated that when implementing surveys there is a value to using more than one follow up method other than just email. Following up with respondents through other modes like mail, and telephone can increase response rate of a web-based survey as it leads to respondents remembering to take the survey (Millar & Dillman, 2011).

Response in survey research is important to reduce non-response error as well as survey error (Dillman et al., 2014; Smith et al., 2019). In addition, non-response error can lead to a decrease in the sample size which then can have an effect on conclusions that can be drawn about the research (Groves & Peytcha, 2008; Smith et al., 2019). It is important to be diligent to maximize responses for quality data.

Theoretical Framework

The theoretical framework for this research is social exchange theory. Social exchange theory demonstrates the communication between two parties to identify the reward, cost, benefit, and to build trust within the two parties in order to complete a task (Dillman, 1978; Greenberg & Dillman, 2021). Social exchange theory creates trust in research through the communications that are sent by emphasizing how important the research is to the organization. In addition, the researchers provide the benefits to the respondent stressing the importance of their participation (Greenberg & Dillman, 2021). Using the social exchange theory method, this research focused on communicating to participants through different methods.

The purpose of this research study was to determine the differences in response rate of survey methods among high school agricultural education teachers. The following objectives were used:

1. Determine if agriculture teachers respond differently to selected survey methodologies.
2. Determine if age and years of experience have an impact on response timing based on selected survey methodologies.

Methodology

Kansas agriculture teachers (N=247) were randomly placed in four experimental groups. Each group was randomly assigned a treatment of survey methodology. Each group was contacted four times either via the US Postal Service[®], university email system, or the Qualtrics[®] contacts system. Group one (mail) was contacted via mail with a packet, post-card reminder, packet and post-card reminder. Group two (internet) was contacted exclusively using the Qualtrics[®] contact system. Group three (mixed) was contacted with a mixed system, a mailed packet, an email reminder to complete the paper survey, a second mailed packet and an email to complete the paper survey. The final group (mmqq) was also mixed with a mailed packet, a post-card reminder, and the final two contacts using the Qualtrics[®] contact system. The timing of contacts one and two followed recommendations from the Tailored Designed Method (Dillman et al.,

2014), the third contact was delayed from the recommended timing about two weeks due to winter break, and the fourth contact was delayed from the recommended timing about two additional weeks. Data were being collected for a needs assessment but the grouping was conducted to understand the impact of methodology. The needs assessment data will not be discussed as well as non-response error, validity and reliability. The response rate for all groups combine was 72.1% (N=178). Dates were recorded as each response was received. It should be noted that we would expect response time for mail surveys to be slower than electronic.

Findings

A difference can be seen in response rate across the four methodologies: mail 66.1% (41 of 62), online 72.6% (45 of 62), meme 65.6% (40 of 61) and mmqq 83.9% (52 of 62). When the average number of days for response was compared across each method a statistically significant difference was found between online and meme and online and mmqq. Additionally, no statistical differences were found across years of experience and age by days to respond or number of contacts. When comparing the cost of postage for each methodology; online had an expense of \$0.00 per response, mmqq was \$1.75 per response, meme was \$2.76 per response and mail was \$3.35 per response. As far as other expenses for each methodology, most universities have a subscription for an online survey system eliminating the cost for individual researchers. Three of the four methods had printing and paper expenses; mail was \$0.66 per response, meme was \$0.62 per response and mmqq was \$0.34 per response.

Conclusions

The overall best response rate was received by using a mixed method that used two rounds each with the same method, one and two traditional postal methodology three and four with online survey system. The second-best response rate was an online survey system only. Traditional mail was not only the lowest response rate, but as one would expect, the most expensive method. Assuming a researcher is provided with a subscription to an online survey system, the all online methodology was the cheapest per response followed by the mail and online mix. By viewing the Social Exchange theory, mail could create importance and trust while electronic could create a feeling of consideration about time and money potentially creating trust. The mix of mail and technology may be the right combination of importance, benefit, and trust.

Implications/Recommendations

Researchers must constantly weigh cost and quality in data collection. If budget was not of concern, the mmqq approach returned the largest usable sample. A larger responding sample reduces the chances of non-response error. The requirement to pay for online service for each project would have an impact on the cost per respondent and therefore may impact the method chosen for a given project. In many research and evaluation projects timelines become short. Results of this study indicated that the time to respond was statistically quicker for the all online method. This is not a surprise when the steps in the postal system are considered.

It is recommended that survey researchers consider using methodologies that combine modes of data collection such as internet and mail. When considering mixed modes, it is also recommended that there be some consistency within steps, for instance mail, mail, internet, internet because the mail, email, mail, email method performed lower than each except all mail. In further research, similar studies should be conducted periodically to determine if respondent preferences have changed. Also, it would be prudent to make one of the methods online, online, mail, mail. This method would reduce postal and other costs to just those who did not respond after the first two rounds.

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