

Practical Assessment, Research, and Evaluation

Volume 12 *Volume 12, 2007*

Article 17

2007

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Recommended Citation

Hsu, Chia-Chien and Sandford, Brian A. (2007) "Minimizing Non-Response in The Delphi Process: How to Respond to Non-Response," *Practical Assessment, Research, and Evaluation*: Vol. 12 , Article 17.

DOI: <https://doi.org/10.7275/by88-4025>

Available at: <https://scholarworks.umass.edu/pare/vol12/iss1/17>

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Practical Assessment, Research & Evaluation

A peer-reviewed electronic journal.

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Volume 12, Number 17, December 2007

ISSN 1531-7714

Minimizing Non-Response in The Delphi Process: How to Respond to Non-Response

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When using the Delphi process, investigators need not only to achieve a desirable response rate in the initial round but they must also concern themselves with maintaining high response rates in the following iterations. Due to the potential scarcity of qualified participants and the relatively small number of subjects used in a Delphi study, the ability to achieve and maintain an ideal response rate can either ensure or jeopardize the validity of a Delphi study. The purpose of this paper is to discuss possible options to achieve and maintain a desirable response rate when engaged in a Delphi research project. These possible options focus on the importance of seeking help from well recognized experts or endorsed individuals, the value in establishing the first contact with each participant, the option of utilizing different forms and formats of questions, the use of incentives to encourage response and finally, strategies for dealing with non-respondents.

The issue of non-response, and how to control or account for it, can either be found in the recesses or at the forefront of the mind of the social sciences researcher who routinely requests people's opinions, perceptions, or expertise to generate usable data. How much attention it is given, or deserves, depends in what stage of the process a researcher finds themselves. Addressing non-response error is particularly critical when designing and conducting a Delphi study. This is because qualified subjects can be difficult to find and, oftentimes, the number of panelists can be small – mostly between 15 and 20 subjects (Ludwig, 1997). Moreover, although an additional follow-up mailing can increase returns by approximately 12 to 15 percent (Heberlein & Baumgartner, 1978) and multiple follow-ups is one of the most effective response-rate-improvement strategies (Dillman, 1991), it is not always possible for Delphi investigators to use such approaches to improve response rates. Inherent with the Delphi process, the instrument development, data collection, and questionnaire administration are interconnected between rounds. As such, when using a mailed questionnaire, the demands of time provide Delphi investigators few opportunities to satisfactorily employ subsequent mailings

to non-respondents during each round. As Hill and Fowles (1975) indicated:

“While low initial response rates are often typical of mail questionnaire studies, this difficulty creates special problems within the iterative format of Delphi...In a usual survey situation, the experimenter can depend on such additional mailings to boost the total response rate to acceptable levels. Delphi researchers apparently feel unable to pursue this strategy” (p. 183).

Delphi investigators need not only to achieve a desirable response rate in the initial round, but also to maintain a high response rate in the following iterations. Due to the characteristics of multiple iterations, the possible scarcity of qualified subjects, and the relatively small number of subjects used, being unable to achieve and maintain an ideal response rate can jeopardize the validity of a Delphi study. If a small portion of invited Delphi panelists stopped offering their responses during various stages of the data collection process, the quality of information being generated could be downgraded.

Therefore, ensuring a desirable response rate is a special concern to the quality of a Delphi study.

The purpose of this paper is to discuss possible options that enable investigators to achieve and maintain a desirable response rate when using the Delphi technique. Some discussions of the characteristics inherent in the use of the Delphi technique are also provided in order to place the use of this research and evaluation tool in proper context. Recommendations regarding the procedures for controlling non-response in the collection of data in a Delphi study are based upon the review of literature and practical experiences in employing these techniques in actual field research.

TIPS FOR ACHIEVING AND MAINTAINING A HIGH RESPONSE RATE

In the following discussion, several tips of how to strategically collect data using the Delphi study are presented which directly and indirectly address the phenomenon of non-response and lack of adequate or inconsistent participation in the Delphi process.

Assistance from Endorsed Individuals

Seeking an influential or famous person or an individual with a renowned reputation in the project area to endorse a Delphi study can be extremely helpful for Delphi investigators. Because Delphi panelists need to be experts in the area of concern and results of Delphi studies can not be generalized, the use of a referred list of panelists will not likely bias the results and is considered a good first step to selecting both committed and knowledgeable panel members. Therefore, if possible, investigators should strive to locate and ask a recognized expert(s) to provide a list of potential panelists. Doing so can help facilitate the following potential benefits.

First, an endorsed or recommended individual can help identify other experts or colleagues in the project area. More specifically, an endorsed individual should know who else is qualified to be a panelist in a Delphi study which addresses their area of knowledge, passion, or experience. People who possess expertise within a project area often know one another very well. Therefore, a list of Delphi panelists provided by such individuals can be deemed credible and be respected. Of course, Delphi investigators must also be diligent to verify the validity of possible panelists for themselves. Generally, the approach to establishing panelists' qualifications is likely to be through review of publications in the literature (Meyer, 1992; Miller, 2001), the identification of positional leaders (Kaplan, 1971; Ludwig, 1994), and/or verifying those who have firsthand relationships with a target issue (Jones, 1975; Anderson & Schneider, 1993). The latter generally includes

persons who are primary stakeholders with distinct interests pertaining to the area of concern. After gathering a complete list of possible Delphi panelists, a nomination process can be used in order to select or determine the final list of subjects appropriate for the specific Delphi study.

Second, an endorsed individual can help Delphi investigators in various ways during the data collection process. Such an individual can not only provide a credible list of Delphi panelists, but he/she can also assist investigators in contacting the target panelists through a preliminary introduction of both the researcher and the topic of research. That is, the endorsed individual can serve as a referent for the research project. Before Delphi investigators communicate with potential panelists, this endorsed individual may be able to directly contact qualified persons via telephone or email. Accordingly, when investigators contact those who have been previously notified by the endorsed individual, the chance of receiving no response or declining participation by the prospective candidate can be greatly reduced. In an area where experts are sometimes scarce and in a society where personal relationships are extremely important, such influence and assistance are particularly useful.

Initial Contact

Once a list of possible panelists is developed, and before mailing the first round data collection package, it is advisable for Delphi investigators to initiate a first contact in order to personally request participation. In the conventional sense of conducting basic survey research, if and when investigators employ a mailed survey procedure, a postcard or an advanced notice letter is generally used as a tool of first contact (Salant & Dillman, 1994). However, a preliminary phone call or personal contact to all potential subjects instead of the use of a postcard or a notice letter may be a better choice in the Delphi process.

The advantages of using the telephone or another method of personal communication as a strategy of first contact are twofold. First, the use of an initial telephone or personal contact not only functions as a preliminary notice, but also establishes an open line of communication between a potential panelist and the investigator. The first contact can be used to explain the purpose of the study, answer questions, and confirm potential panelists' willingness to participate in the study. If the potential panelist has not been previously approached, a first telephone or personal contact enables an investigator the opportunity to persuade the potential subject to participate in his/her study as well as provide assurances of the importance and validity of the research effort. However, a Delphi investigator may more easily and readily receive an oral commitment from a subject during the initial contact if an endorsed individual has previously contacted the potential panelist. Strategies of how to effectively

communicate with a potential subject may consist of being polite, sincere, and confident in both the need to conduct the research and the reasons for selecting the specific panelist. In other words, the researcher should be ready to discuss why the panelists was chosen as an expert in the area of study and provide sound research-based justification as to why the study is necessary and appropriate. Certainly, a potential panelist may ask a variety of questions and being prepared beforehand is one key to promoting initial and continued participation which avoids the dangers of non-response and panel member attrition.

Second, if potential panelists are unable or unwilling to participate in the Delphi study, they can inform the Delphi investigators of their decisions during this initial one-on-one contact. Once all potential panelists are contacted, Delphi investigators are then able to sort out the availability of the participants and seek other qualified individuals to replace those who are unavailable or who decline to participate. It is also essential to keep in mind that, even though panelists are initially capable of participating in a study, they can still become unreachable during various stages of a Delphi study (e.g., travel abroad, vacations, etc.). This becomes a more prevalent and critical consideration if mailed questionnaires are used. Therefore, using a telephone or personal contact as the preliminary initial contact strategy may provide some clues for investigators to make decisions of either inviting or eliminating a specific subject or to make necessary adjustments. For example, one helpful adjustment which may result from the first contact would be the ability to send an e-mail version of the survey instruments instead of using mailed questionnaires as a workable alternative to retain panelists who may need to travel elsewhere during the data collection period. In fact, some panelists may be willing communicate via e-mail for the entire data collection process. Therefore, obtaining the correct e-mail address, permission to send materials via e-mail, as well as alerting the recipient of the nature of the research so that future emails would not be deleted by the recipient can all be arranged during this first person-to-person contact.

Open-ended vs. Close-ended Statements

Traditionally, Round I of the Delphi process begins with an open-ended questionnaire. The open-ended questionnaire serves as the cornerstone of soliciting specific information about the area of concern from the Delphi panelists (Custer, Scarcella, Stewart, 1999). While analyzing information provided by Delphi panelists, investigators need to subsequently convert the qualitative data into a structured instrument which serves as the second round questionnaire. In contrast to the traditional Delphi that utilizes open-ended questions to collect information in the initial round, a modified Delphi technique can be used by

administering a structured instrument to begin the Delphi process and as the platform for future questionnaire development used in subsequent iterations.

The difference of using the traditional Delphi (open-ended) and a modified Delphi (close-ended) in the initial iteration of the survey instrument does initiate a question which needs to be addressed – which one is superior? Although there is no definitive answer to this question, Kerlinger (1973) notes that the use of a modified Delphi is an appropriate option if information concerning the project area is available. Furthermore, Marchant (1988) indicates that Round I questionnaire statements of a traditional Delphi study can be ambiguous in nature and broad in scope. Submitting such questionnaires to panelists is inappropriate and can possibly lead to bias at the outset as well as biased results thereafter. In reality, the use of a close-ended, pre-established questionnaire in the first round enables investigators to at least verify the face and content validity of the instrument prior to sending the first round package to participants. That is, the ability of establishing face and content validity in Round I can be considered an important and desirable methodological improvement for a Delphi study. In addition to the procedure of validity verification, McCampbell and Stewart (1992) specifically address the advantages of using a pre-established set of statements in the first round:

1. It would save time that would otherwise be needed to collate and edit the usual first round responses and prepare the output that becomes the second round questionnaire;
2. It would have the effect of cutting down on the dropout rate of panelists completing the open-ended, needs-assessment type survey and not participating in the rest of the study;
3. It would assure that important statements were included by the researcher that otherwise might have been omitted, and;
4. Panel members genuinely would appreciate a completed instrument on which to respond (p. 58).

From the viewpoint of a participant, if a questionnaire is easy to respond to and less time-consuming, he/she is more likely to complete and return the questionnaire. Of course, the use of traditional Delphi is a necessity if basic information regarding the target issue is unavailable.

Dealing with Non-respondents

Usually, in a typical mailed survey, there are several follow-up and reminder strategies that can be used to encourage participation and further collect data from members of a study. A postcard reminder is a common method which can be sent to non-respondents. Instead of

a postcard reminder, the use of a telephone contact or e-mail as a reminder is recommended in Delphi. Ludwig (1994) indicates that, “a drawback to Delphi was that the questionnaire method may slow the process greatly as several days or weeks may pass between rounds” (p. 54). Indeed, the very nature of the Delphi technique is iterative and sequential and the problem of how to accelerate the process of data collection poses a challenge for Delphi investigators. Therefore, using a telephone or e-mail contact can nudge non-respondents into promptly returning their questionnaires, eliminate the demands of time required by postcard reminder deliveries, and create another open communication opportunity between investigators and non-respondents. All these factors show that telephone or e-mail contact can be a desirable alternative to using the typical postcard or reminder mailing method in the effort of striving to retain non-respondents in a Delphi study.

Furthermore, setting a deadline for participants to respond is a necessity in all kinds of research inquiry. This is especially true due to the iterative characteristics of the Delphi technique. Although Delbecq, Van de Ven, and Gustafson (1975) recommend giving two weeks for Delphi panelists to reply and Dillman (2000) suggests that when conducting a mailed survey one week is appropriate to initiate a follow-up contact after a deadline for response has passed, it is suggested that only two or three days after the deadline for any given round of a Delphi study an investigator needs to call or e-mail non-respondents to encourage them to return their questionnaires. By following this protocol, Delphi investigators can prevent non-respondents from slowing the data collection process to a great degree.

In summary, Delphi panelists can be unavailable to respond to a questionnaire for various reasons and even though a given deadline set by investigators has passed, it is still advisable to contact the non-respondents. If the investigators fail to contact them in a timely manner, these persons are likely to think that their responses are no longer important and/or necessary. Having them continue to participate in further iterations may become improbable and, as a result, response rates will suffer. Therefore, the use of telephone or e-mail contacts in conjunction with a short interval of time between deadlines for response and follow-up reminders enables Delphi investigators to directly and promptly communicate with non-respondents for the purpose of expediting the process of data collection and ultimately maintaining a high response rate.

Incentives

Providing incentives to help increase response rates is well documented in the literature (James & Bolstein, 1992; Church, 1993). Dillman (2000) summarizes that, “Second to multiple contacts, no response-inducing technique is as

likely to improve mail response rates as much as the appropriate use of financial incentives...A less compelling case can be made for the use of material incentives whose impact will be much less” (p. 167-170). Whether investigators choose to use financial or material incentives depends upon the investigators’ budget and creativity. If investigators plan to use financial incentives, they should take note that, “a modest prepaid incentive [one or two dollars] has proved to be strikingly powerful” (Dillman, 2000, p. 168). If material incentives are going to be used, investigators have to be creative. Novelty effect can draw panelists’ attention as well as lead to respondents thinking that the investigators’ efforts are worthwhile and, in return, panelists are more likely to respond to investigators’ questionnaires (Sandford, 2002).

Because of the iterative feature of the Delphi technique, Delphi investigators need to prepare incentives for different rounds. In addition to using the incentives previously described, it is also beneficial for investigators to enclose thank-you notes for the purpose of expressing appreciation for panelist responses and their ongoing participation. Also, since panelists more likely than not are experts in the target issue area, they subsequently can be very interested in the results and conclusions of the study. Informing panelists that investigators will mail them the results after the completion of the study may be another helpful tool in initially getting and subsequently keeping them involved in the study.

CONCLUSION

The Delphi technique is a major tool used in program planning, needs assessments, curriculum development, policy determination, and resource utilization (Ludwig, 1994). Developing strategies that encourage acceptable response rates in the Delphi process are particularly desirable because of the relatively small number of subjects used and because a low response rate can effect the validity of the study. This paper specifically addresses the possible options to achieve or maintain an ideal response rate in the Delphi technique. The possible options suggested are relevant to the importance of seeking assistance from endorsed individuals, the strategy used in the first contact, the priority of utilizing different forms of question formats, the strategy of dealing with non-respondents, and the use of incentives.

Implementing suggested options in terms of achieving and maintaining desirable response rates is merely a part of the whole Delphi process. As Hasson, Keeney, and Mckenna (2000) indicate, “the success of the Delphi technique relies upon the administrative skills of the researcher, which should never be underestimated” (p. 1012). Indeed, when investigators determine to use Delphi, prudent thought must be given in planning,

reviewing literature, organizing necessary resources, communicating with people of interest, editing instruments, analyzing data, and managing time effectively. Controlling for non-response by encouraging active participation which promotes participants to respond is essential to conducting an effective and meaningful Delphi investigation. After all, the feedback of only one or two individuals can become more opinion and preference rather than fact and expertise.

REFERENCES

- Anderson, D. H., & Schneider, I. E. (1993). Using the Delphi process to identify significant recreation research-based innovations. *Journal of Park and Recreation Administration, 11* (1), 25-36.
- Church, A. H. (1993). Estimating the effect of incentives on mail survey response rates: A meta-analysis. *Public Opinion Quarterly, 57*(1), 62-79.
- Custer, R. L., Scarcella, J. A., & Stewart, B. R. (1999). The modified Delphi technique: A rotational modification. *Journal of Vocational and Technical Education, 15* (2), 1-10.
- Delbecq, A. L., Van de Ven, A. H., & Gustafson, D. H. (1975). *Group techniques for program planning*. Glenview, IL: Scott, Foresman, and Co.
- Dillman, D. A. (1991). The design and administration of mail survey. *Annual Review of Sociology, 17*, 225-249.
- Dillman, D. A. (2000). *Mail and internet surveys: The tailored design method*. New York: John Wiley & Sons, Inc.
- Hasson, F., Keeney, S., & McKenna, H. (2000). Research guidelines for the Delphi survey technique. *Journal of Advanced Nursing, 32* (4), 1008-1015.
- Heberlein, T. A., & Baumgartner, R. (1978). Factors affecting response rates to mailed questionnaires: A quantitative analysis of the published literature. *American Sociological Review, 43*, 447-462.
- Hill, K. Q., & Fowles, J. (1975). The methodological worth of the Delphi forecasting technique. *Technological Forecasting and Social Change, 7*, 179-192.
- James, J. M., & Bolstein, R. (1992). Large monetary incentives and their effect on mail survey response rates. *Public Opinion Quarterly, 56*(4), 442-453.
- Jones, C. G. (1975). A Delphi evaluation of agreement between organizations. In H. A. Linstone, & M. Turoff (Eds.). *The Delphi method: Techniques and applications* (pp. 160-167). Reading, MA: Addison-Wesley Publishing Company.
- Kaplan, L. M. (1971). *The use of the Delphi method in organizational communication: A case study*. Unpublished masters thesis, The Ohio State University, Columbus.
- Kerlinger, F. N. (1973). *Foundations of behavioral research*. Now York: Holt, Rinehart, and Winston, Inc.
- Ludwig, B. G. (1994). *Internationalizing Extension: An exploration of the characteristics evident in a state university Extension system that achieves internationalization*. Unpublished doctoral dissertation, The Ohio State University, Columbus.
- Ludwig, B. (1997). Predicting the future: Have you considered using the Delphi methodology? *Journal of Extension, 35* (5), 1-4. Retrieved November 6, 2005 from <http://www.joe.org/joe/1997october/tt2.html>
- Marchant, E. W. (1988). Methodological problems associated with the use of the Delphi technique: Some comments. *Fire Technology, 24* (1), 59-62.
- Meyer, J. H. (1992). *Rethinking the outlook of colleges whose roots have been in agriculture*. Davis, CA: University of California.
- Miller, G. (2001). The development of indicators for sustainable tourism: Results of a Delphi survey of tourism researchers. *Tourism Management, 22*, 351-362.
- McCampbell, W. H., & Stewart, B. R. (1992). Career ladder programs for vocational education: Desirable characteristics. *Journal of Vocational Education Research, 17* (1), 53-68.
- Salant, P., & Dillman, D. A. (1994). *How to conduct your own survey*. New York: John Wiley & Sons, Inc.
- Sandford, B. (2002). *A national assessment of the activities, perceived instructional needs and appropriate methods of delivering professional development for part-time technical and occupational education faculty in the community college of the United States*. Unpublished doctoral dissertation, The Ohio State University, Columbus.
- Witkin, B. R., & Altschuld, J. W. (1995). *Planning and conducting needs assessment: A practical guide*. Thousand Oaks, CA: Sage Publications, Inc.

Citation

Hsu, Chia-Chien & Sandford, Brian A. (2007). Minimizing Non-Response in The Delphi Process: How to Respond to Non-Response. *Practical Assessment Research & Evaluation*, 12(17). Available online: <http://pareonline.net/getvn.asp?v=12&n=17>.

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