Chapter 9

Delphi Method in a Digital Age: Practical Considerations for Online Delphi Studies

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ABSTRACT

With the rapid advancement of online survey tools, research collaboration tools, communication platforms, and statistical analysis tools, the Delphi method is an increasingly popular research approach to gain insight from experts into complex problems or when future-oriented planning is required. This chapter focuses on practical considerations and implications for practice when conducting studies online using the Delphi method. Practical logistics for the management of online Delphi studies explored in this chapter include preparing for a successful study, designing communication strategies, addressing technological considerations, and handling of qualitative and quantitative data.

INTRODUCTION

Before the invention of the personal computer, the Internet, email, or electronic survey tools, the Delphi Method was used as a structured communication and collaboration mechanism to gain consensus, synthesize opinion, and process feedback from experts (Linstone & Turoff, 2002, 2011). Originally invented by Dalkey and Helmer (1963) for the RAND Corporation in the 1950’s, this research process was constructed within the limited possibilities of the available technology. With innovations in electronic communication, online survey tools, and data analysis software, the previous limitations for participation, time for response and processing, and geographical location no longer restrict Delphi research (Garson, 2014; Linstone & Turoff, 2002, 2011). Moreover, in today’s digital age, researchers have access to technological tools for conducting Delphi studies that extend beyond these limitations thus providing both opportunity and challenge to conduct global studies, automate elements of the research process, and handle greater amounts of data in shorter time frames (Donohoe, Stellefson, & Tennant, 2012).

DOI: 10.4018/978-1-5225-5164-5.ch009
Conducting Delphi research requires high levels of administrative expertise to track participant data, manage communication, and administer surveys (Hasson, Keeney, & McKenna, 2000). Consistent with the pragmatic nature of the Delphi Method, designed to inform practice (Dalkey & Helmer, 1963), this article focuses on practical considerations for managing Delphi studies in a digital age using online communication, collaboration, and survey tools to inform Delphi research practice. Specifically, considerations include preparation, managing online Delphi Rounds, communication, technological considerations, concerns for data analysis of both qualitative and quantitative data, and managing mistakes.

**DELPHI METHOD IN A DIGITAL AGE**

While Delphi was invented in a paper-based world, technologies of today pose new opportunities and challenges for the Delphi researcher. The requirements to carry out studies using the Delphi method have moved from needing physical space and filing systems for handling mailing labels, postage-paid envelopes, and questionnaire duplication (Hasson, Keeney, & McKenna, 2001) to those of a digitized world where online surveys, electronic communication, and computer-based software, comprise the researchers’ toolkit. At a conceptual level considerations for Delphi studies largely remain the same as when the method was invented. Researchers need to prepare studies, design surveys, communicate with participants, and analyze data. However, practical logistics carrying out these functions have changed greatly over the years and now require considerations to manage, customize, automate, and expedite Delphi studies.

**Study Preparation**

Preparing for an online Delphi study includes planning for each step in the research process, gaining clarity on institutional requirements, refining the survey instrument, clearly defining the role of the researcher in the process, and anticipating how variations will be handled including non-response and error. Online surveys introduce unique, and sometimes changing, considerations for gaining informed consent, assembling an expert panel through electronic communication, advanced options for survey design, and protection against researcher bias. Additionally, conducting a pilot study introduces opportunities to refine the survey instrument, administrative procedures, and communication processes.

**Informed Consent**

Informed consent is both an ethical and legal requirement required by all researchers before commencing research to protect human subjects in the research process (Creswell, 2015), with particular and changing considerations for privacy and data collection in online studies. Requirements for informed consent vary by the Institutional Review Board (IRB) approving body with implications for the study timeline and turnaround times between rounds as well as required evidence of informed consent. Furthermore, these considerations impact potential expert participation and need to be incorporated into the study timeline. While some institutions require only initial approval for the study, others may require approval for each survey round, which means time must be allowed for each approval. Additionally, researchers need to be aware of both initial and ongoing approval requirements as well as anticipated time frames for the approving IRB to accurately project timelines for the study and communicate realistic expectations for participants.
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