

# The Delphi Method

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Qualitative research provides many methodological tools for understanding deeper meanings associated with complex phenomena and processes (Denzin & Lincoln, 2005). Qualitative research is thus regularly used, alongside quantitative and mixed methods, in the context of community-based research (Miles & Huberman, 1994). Qualitative methods provide community researchers and practitioners with tools that encourage community member participation and voice in addressing and understanding community strengths, histories, and challenges (Johnson, 2006; Minkler, 2005). One of the qualitative methods useful for promoting community participation in research is the Delphi method. The qualitative version of the Delphi is a flexible research method grounded in pragmatism and structured participation (Dalkey & Helmer, 1963). The Delphi method was developed to provide a structured mechanism to attain insights and perspectives from people with a specific expertise on a topic or issue in order to inform decision making about policy and practice (Dalkey & Helmer, 1963). The Delphi method utilizes structured anonymous communication between experts in order to gather consensus perspectives about an issue or topic that can then be translated or used to inform decision making about a specific issue or within a specific context (Birdsall, 2004; Dalkey & Helmer, 1963). Because the aim of community-based research is to generate knowledge that can directly improve community systems and the lives of residents through involving community members and stakeholders to some degree in the research process, the qualitative Delphi method is an essential tool for community researchers.

## GUIDING THEORY AND PHILOSOPHY OF THE DELPHI METHOD

The qualitative Delphi method has roots in the philosophy of Locke, Kant, and Hegel (Turoff, 1970). Each philosopher emphasizes the importance of opinions and perceptions of groups of people, alongside other sources of empirical data, in considering what reality is or how to approach decision making. Additionally, because the Delphi method was designed for practical research that could be used to inform practice, the Delphi method was established in accordance with the philosophical assumptions consistent with Dewey's pragmatism (Dalkey & Helmer, 1963). Dewey's pragmatism has long been considered a practical bridge between theories and methods stemming from the interpretive paradigm concerned with subjective human experiences and contextual truths and the emphasis on generalizability and objectivity common in the postpositivist paradigm (Fay, 1996). Pragmatism is evident in the qualitative Delphi method in the following ways: (a) The Delphi method is flexible enough to be utilized with both quantitative- and qualitative-derived data; (b) the Delphi method is affordable, as it uses inexpensive questionnaires that vary from more open-ended to more structured and that can be easily disseminated to participants utilizing either traditional or electronic delivery; (c) the Delphi method is not concerned with having a generalizable sample but instead seeks input from a purposive sample of individuals with specific expertise on a topic; and (d) Delphi studies lack the complexity of many other research designs that demand highly specialized education, technology, and knowledge, which makes it a good tool for community-based research and decision

making by community researchers and practitioners alike (Skulmoski, Hartman, & Kran, 2007). Finally, research questions and aims in Delphi studies must have direct bearing on informing practice, policy, or decision making (Alder & Ziglio, 1996; Dietz, 1987).

### UTILIZING THE DELPHI METHOD IN COMMUNITY AND ORGANIZATIONAL SETTINGS

The Delphi method has been used in an array of different contexts, where expert knowledge is needed to inform decision making. Often, researchers and decision makers will want to solicit feedback from very different groups of people, each with a unique lens or expertise on an issue (Dietz, 1987). The Delphi method has been regularly employed in the context of public policy as a means of increasing understanding about how a specific policy should be developed or amended or as a tool for determining a policy's effectiveness and/or efficiency (Alder & Ziglio, 1996; Linstone & Turoff, 1975). Additionally, the Delphi method has been used in the area of management and organizational development as a catalyst for improving working relationships and making group decisions. The Delphi method has also been regularly utilized to inform the development of practice theories and models in a variety of fields and disciplines (Brady, 2012; Skulmoski et al., 2007). Finally, the Delphi method has been useful in conflict resolution and strategic planning within organizations and agencies (Hartman & Baldwin, 1998; Roberson, Collins, & Oreg, 2005). In one case, the Delphi method was included in participatory action research (PAR) in order to better inform health care policy and leadership in Canada (Fletcher & Childon, 2014). In that study, through this approach, community members from different geographic areas and of differing levels of power and vulnerability were able to provide stakeholders with direction about how to better deliver health care services, help with prioritizing health care issues, and insight into what was working and not working within the current system. Given the proven and practical utility of the qualitative Delphi method in informing decision making and practice, it provides a useful tool to those involved in conducting community-based research.

### INTRODUCTION TO A STANDARD DELPHI METHOD

Although variations in qualitative Delphi studies exist, as is the case with most approaches to research (see Creswell, 1998; Denzin & Lincoln, 2005), certain consistent criteria apply to all qualitative Delphi studies, including purposive sampling, emergent design, anonymous and structured communication between participants, and thematic analysis (Linstone & Turoff, 1975). The expertise of participants on the topic of inquiry is the most important requisite in Delphi studies (Alder & Ziglio, 1996). Participant expertise must be defined with predetermined criteria (e.g., years of experience working in an area, years spent living in a community) in order for a sample to be properly identified and recruited. In a standard qualitative Delphi study, a sample of between 10 and 20 participants is recruited to participate. The range in sample size depends upon what is already known about an issue or topic and how broad or narrow the scope of expertise desired is on a topic. Frequently, in community settings gatekeepers may be called upon to help recruit and/or identify persons with a specific type of expertise. Individuals must not only have the type of expertise needed but also must have the time and desire to participate in the study. As with any other type of study, whether formal or informal, informed consent to participate is needed.

Questionnaires are the traditional data collection tool used in the Delphi method, as they provide an easy tool for soliciting and receiving honest expert opinions on a topic without fear of responses being impacted by unequal power dynamics, in-person groupthink, difference in social identities and values, or past history with one another (Bolger & Wright, 1994). Delphi studies collect data through questionnaires that may range from more open ended to closed ended, depending upon how much is already known about the topic (Dalkey & Helmer, 1963; Skulmoski et al., 2007). Questionnaires are usually sent out electronically to participants through e-mail, survey software, or a similar format; however, pen-and-paper questionnaires may also be sent out by mail.

In a typical Delphi study, three waves or rounds of data collection are undertaken. The first wave includes an initial questionnaire, usually between

7 and 10 questions, followed by a second wave that provides all participants the opportunity to provide feedback to the responses of others, and concluded by a final, third wave questionnaire that is developed from the consensus opinions analyzed in Wave 1 and 2 in order to arrive at a final consensus on a question, topic, or issue.

Qualitative Delphi studies utilize thematic analysis in order to identify the consensus opinions or themes present in participant responses to questions. Generally, more than one person on the research team will analyze responses in order to ensure consistency and accuracy in the analysis process. Prior to beginning data collection, members of the research team define what, numerically, will constitute consensus. Consensus in a Delphi study refers to the level of agreement between participants necessary to include an opinion, judgment, or insight into the final results or model. It is best thought of as the percentage of participants in agreement about a certain point or who respond similarly about something. The final results of a Delphi study may be sent back out to participants for a final vote on whether or not participant consensus was analyzed correctly by the research team.

### **Strengths of the Qualitative Delphi Method**

The Delphi method has many positive attributes that make it an excellent option for community-based research studies. One positive is that it is relatively easy to learn and employ without any highly formalized education or a research-focused degree. Its pragmatic nature lends itself to use by community organizers and practitioners, who often already have relationships with stakeholders and understand the complex context of decision making in the community. Additionally, the Delphi method is low cost, as it generally relies on basic questionnaires that can be sent out electronically to participants. Also, it is very flexible and can be used with small to medium sample sizes of between 10 and 20 participants, whereas many other research methods are dependent upon medium to large sample sizes. Finally, in the context of community-based research, the Delphi method allows for community member voices and participation, especially from nonprofessionals and members of historically vulnerable groups, to be heard and included in community decision making.

### **Challenges to the Qualitative Delphi Method**

Although the qualitative Delphi method has several beneficial qualities for use in community-based research, the method also has challenges that deserve mention. Because the Delphi method is rooted in pragmatic decision making, the method is limited to studies that seek expertise to inform decision-making purposes. Many community organizations employ satisfaction surveys, for instance, for which the Delphi method would not be appropriate, nor would it be useful in community decision-making processes that do not plan on utilizing feedback from those included in the study. Second, although the method is fairly easy to learn and utilize in most ways (e.g., sampling, data collection), analysis can be tricky, especially given the relatively little guidance provided in the literature. The Delphi literature speaks only to the fact that qualitative Delphi studies use thematic analysis, but it does not describe the process in much depth, which can be challenging to community practitioners not trained in research methods or analysis. In order to address this shortcoming, the author recommends that those using the qualitative Delphi consult other methodological resources, such as Bazeley (2009), Creswell (1998), or Strauss and Corbin (1998), for further help with analysis. Additionally, with respect to analysis, individuals using the qualitative Delphi should remember that consensus is always the most important criterion, so the more participants who mention or indicate a response, the more important it is in the final analysis and results. Lastly, the success of Delphi studies is tied directly to the anonymity of the communication; however, in small communities or neighborhoods, participants may know one another and may be tempted to talk about the study with one another. It is highly recommended that anyone seeking to use the Delphi method in community research formally discuss how to promote anonymity among participants and members of the research team.

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## **CASE STUDY**

### **Overview of the Community**

During the past 30 years many rustbelt cities have experienced their share of economic, political, and social challenges, due, in part, to the recession, a decline in manufacturing jobs, instability in local

governments, and a continued decline in population (Rugh, 2014). Despite these challenges, outside investors have begun to partner with local, state, and private leaders in redeveloping several areas and neighborhoods within communities. Although some of these processes have been touted as highly successful, many community organizers at the local neighborhood level have challenged whether or not the expertise and opinions of local residents have been taken into account during community development efforts (Dobbie & Richards-Schuster, 2008). This case study takes place in a community within a large rustbelt city.

In this study the private, government, and non-profit sectors were working together to develop several at-risk neighborhoods and areas in the city with help from major foundations, federal grants, and for-profit investment. One of the major tasks that developers engaged in was establishing and prioritizing community needs. Despite some professionals being connected to the community through their professional or leadership roles, few were residents of the community. During some of the initial development processes, experts struggled to find creative ways to involve local residents in decision making and strategizing. Therefore, many of the early community development efforts lacked resident participation and input. Although many community organizers and researchers were aware of the lack of resident inclusion in community decision making, few knew exactly how to effectively involve community residents alongside professionals, academics, and other decision makers. As a result of the challenges associated with soliciting meaningful participation from local residents, new community-based research tools were needed. The qualitative Delphi method was one of the tools identified and successfully utilized in one community effort to attain feedback from long-time residents about development and planning.

### Defining Community and Context

For the purpose of this case study, community was defined as an area of approximately 2 square miles inside the boundaries of a larger city that included approximately three different neighborhoods. The neighborhoods that comprised community in this case were similar with regard to race, with the majority of residents (85%) being African American, along with smaller percentages of Whites (8%) and Latinos (3%) (Staes, 2010). Residents had a mean

age of 44 years old, with some diversity in families and older retirees living in the community. Because neighborhood residents had seldom been included in previous community development processes and were therefore distrustful of outside professionals and academics, it was imperative for the research team tasked with coming up with a community development plan to find a way to involve them in the research process.

### Identifying and Recruiting Resident Experts

The Delphi method was chosen because it provided a way for local community members to be experts alongside other stakeholder groups. Because of the Delphi method's anonymous nature, a local resident would not know that he or she might be responding to the perspective of a city council member or business executive and vice versa. During the initial planning of the study, questions were raised about sample size, recruitment, and access to computers/technology needed to participate. The local community development corporation (CDC), along with a few local leaders, provided the perspective that we wanted to include a similar number of local residents as other stakeholder groups, which was determined to be best kept between 10 and 12 residents out of 220 estimated residents living in the community.

The CDC had an existing group of local residents already engaged in neighborhood discussions and work, which would be a good source of potential participants. However, although the CDC was an important ally in recruitment, the research team thought that it was important to have another community organization involved in recruiting resident experts. Therefore, after carefully assessing the community, members of the research team identified a local church in close proximity to the community, which also had a resident-led group. Consequently, each of the two sources was asked to serve as a gatekeeper in order to recruit five members each for inclusion in the study. The use of gatekeepers in Delphi studies is important because, as noted earlier, participants must have the expertise, time, and willingness to participate. Both the CDC and the church received a basic overview of the study and scripts to use for recruitment purposes. Ten resident participants were recruited in this manner and were placed into a larger group with 10 decision makers from the business, government,

education, and nonprofit sectors, for a total of 20 people included in the study. Out of the 10 residents who participated, 8 were African American, one was White, and one identified as Latino. Seven were female, and three were male; their ages varied from 22 to 67. These demographic characteristics were fairly representative of the community. Each resident had lived in the community for at least 10 years (a mean of 36.4 years), thus ensuring that resident participants had enough insider knowledge of the community to be considered experts for this study.

### Engaging Community Members Using the Delphi Method

The overarching research question used to begin the study was “What does your ideal community look like?” The first questionnaire was based around major areas targeted for development. Ten open-ended questions were developed and included items about strengthening public transportation, improving and developing housing, types of businesses desired, parks and recreation, and city services (e.g., police, fire, trash). The aim of the first questionnaire was to gain insight and direction about how community needs should best be prioritized. The questionnaire was sent electronically to all 20 participations, with directions for completing them. The research team sent out the e-mails with all addresses and names hidden, so anonymity would be promoted. After all data were collected from this first round, the research team went through the responses to ensure that no names or other identifying information, such as titles, location, or places of employment, was used in responses. All responses for each of the 10 questions were then combined into one document, which was sent out again to participants for comments, feedback, and insights. This round of data collection was considered the study’s second wave or round. Once participants had ample time to respond to the responses from the first questionnaire, each of the three members of the research team took the second-round document and began compiling responses and analyzing feedback to identify consensus about community priorities, as well as additional information needed to help clarify items not entirely clear in participant responses. The third-wave questionnaire consisted of five questions that were sent out to participants. After all questionnaires were returned from the

third wave, the research team conducted final data analysis.

### Finding Community Consensus Through Data Analysis

In Delphi studies, thematic analysis is used for qualitative data (Linstone & Turoff, 1975). Thematic analysis is a type of qualitative analysis that examines data for concepts, categories, and themes. In Delphi studies, consensus is the guiding factor in thematic analysis; however, although consensus concepts are often easy to identify in participant responses, as they will often be illustrated by concrete things such as housing, transportation, and recreation, developing categories and themes will often take more thinking on the part of the research team, as categories and themes provide links, categorization, and overall greater explanatory ability than concepts do on their own. However, because categories and themes are impacted more by how the research team interprets participants’ responses, it is recommended that the final results be sent out to participants in order to ensure accuracy at capturing their consensus perspectives.

Each of the three researchers analyzed the data and placed the participants’ responses into two major categories: tangible development wants/needs and nontangible development considerations. An example of a tangible development want might be the demolition of abandoned houses or the development of a major grocery store. An example of a nontangible consideration might include addressing crime better or neighbors getting to know one another better. After each researcher had analyzed all Wave 1 responses on his or her own, they then processed and discussed similarities and differences among themselves in order to reach a consensus about the major concepts and categories, which was defined as 50% or more participants listing or indicating the need or concern for an individual response to a question.

The third and final wave of questions was created from the analysis of the first two rounds. This third-round questionnaire asked residents to comment on the consensus priorities that had been expressed in the previous rounds, as well as how nontangible concerns could be addressed within each priority. For example, a consensus of participants had previously responded that in order to entice new residents to move into the community, city services must be increased and improved.



In the Wave 3 questionnaire, one question asked participants, "How could city services, such as police, tree removal, and lighting, be subsidized in long-term development plans to bring new residents to the community without putting added burden on existing community members that could force them to move out of the community?" This structure for third-wave questions allowed participants to consider how to concretely incorporate previous concerns that were more abstract or nontangible into the more tangible development priorities that they had come up with as a group. After all Wave 3 questionnaires were completed and returned, the research team again individually analyzed responses using rigorous thematic analysis. Final concepts, categories, and themes were compared among members of the research team. Points of difference were discussed until consensus could be reached among team members. The final themes that were identified were related to underlying values expressed by participants about what should guide community development in this neighborhood. These themes were diverse, affordable, safe, welcoming, and thriving. The final community priorities, suggestions/concerns, and values were sent out to all participants for a final check for trustworthiness. Out of 20 participants, 18 responded to the member check, and 100% of participants who responded agreed that the final priorities, suggestions, and values were a reflection of the group consensus. The final results were used to help developers guide the process of neighborhood development in this community. To date, the development efforts have been somewhat stalled due to funding challenges, but residents and developers continue to work together as additional funding is secured to complete the proposed development project. Although both residents and developers have expressed some frustration over the time it is taking to complete development, both groups believe the extra time and funding are worth these minor setbacks in order to ensure that the community is developed in a way in which local and professional expertise is taken into account.

## CONCLUSION

In this case study, the Delphi method was an effective community-based research tool that allowed for the meaningful inclusion of community residents alongside decision makers and professionals.

It provides a pragmatic method that is easy to use, minimally evasive, anonymous, and with the structure and rigor necessary to be useful in the context of community-based research. Researchers considering using the qualitative Delphi method in community development should consider how best to access community members with the given expertise to participate. Given the often conflict-prone nature of relationships among professionals, academics, and community members, gatekeepers and community-based organizations will frequently be important partners in helping to recruit community members to qualitative Delphi studies. Additionally, the use of the qualitative Delphi method to include local community members in decision-making processes should be considered only if developers, academics, and professionals are committed to using local expertise in the given project or to address community issues. However, if these caveats are met, community practitioners and researchers seeking a flexible approach for engaging community members in meaningful participation in development and other decision-making tasks should give serious consideration to using the qualitative Delphi method.

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