

9-6-2024

Using Focus Groups in Delphi Method to Conduct Participatory Research: Implications for Extension

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Recommended Citation

Lamoureaux, Y., Van Soelen Kim, J., & Koundinya, V. (2024). Using Focus Groups in Delphi Method to Conduct Participatory Research: Implications for Extension. *The Journal of Extension*, 62(3), Article 13. <https://open.clemson.edu/joe/vol62/iss3/13>

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Cover Page Footnote

Acknowledgements: Gail Feenstra, Director and Emeritus, UC Sustainable Agriculture Research & Education Program, Davis, California Susan Garcia, Community Engagement Supervisor, Northern California Center for Well-Being, Santa Rosa, California Suzi Grady, Program Director, Petaluma Bounty, Petaluma, California Masako Watanabe, Nutrition Incentive and Communications Coordinator

Using Focus Groups in Delphi Method to Conduct Participatory Research: Implications for Extension

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Abstract. In this article, we describe an innovative way of using the Delphi method with community stakeholders. We modified the traditional Delphi method by conducting three consecutive virtual focus groups in combination with anonymous surveys at the end of each round. Focus groups provided a safe environment to exchange perspectives, express divergence of opinions, and explore areas of agreement, while surveys allowed the opportunity to express opinions anonymously. Extension practitioners can employ this innovative approach to the Delphi method to facilitate knowledge exchange, discussion, and dialogical consensus-seeking in an interactive focus group setting to gain more nuanced qualitative results.

INTRODUCTION

The COVID-19 pandemic created restrictions for in-person interactions and expedited shifts toward virtual means of social science research and evaluation. As a result of social distancing, an unexpected opportunity emerged to explore newer ways of participatory work. We used the virtual focus groups and survey method mainly to adapt to the social-distancing restrictions implemented during the pandemic. However, the virtual format provided us with equally valid data and revealed the potential for this innovative method to be used in the future. Extension professionals can use the innovative Delphi method to facilitate a unique collaborative space for stakeholders from dispersed geographic locations or those unable to convene in person for various reasons.

A traditional Delphi method typically aims to use expert knowledge to find consensus on a complex issue (Dalkey & Helmer, 1963; Niederberger & Spranger, 2020; Warner, 2014) and aggregates group answers from questionnaires to iteratively create new questionnaires to reconsider judgments and revisit when appropriate. The Delphi process is conducted in multiple rounds until consensus has been achieved, as defined by a convergence of top rankings on questionnaires taken independently; however, typically three rounds are sufficient to reach consensus (Diaz et al., 2023; Hsu & Sandford, 2007).

The Delphi method is an effective tool for communicating opinions among stakeholders and for achieving agreement on a program's or project's priorities and objectives (Delp et al., 1977; Diaz et al., 2018; Turoff & Linstone, 2002; Warner, 2014). The most common applications of the Delphi method are to solicit expert opinions on a studied subject while avoiding direct confrontation among people with opposing views (Barrett & Heale, 2020). Examples of previous applications of the Delphi method in Extension include predicting research topics of interest among farmers (Polush et al., 2016); discussing future relationships and outcomes in business; adapting to governmental and organizational contexts (Ludwig, 1997); reaching stakeholder agreement among Extension workers, researchers, and professionals (Lorenzo et al., 2003); and collaboratively developing a strategic plan for Extension (Warner et al., 2017). The Delphi method's strength is its capacity to use points of disagreement to perform deeper analysis of patterns and trends in stakeholders' opinions (Turoff & Linstone, 2002).

OUR INNOVATIVE METHOD

We modified the traditional Delphi method by adding virtual focus groups to enhance opportunities for gathering qualitative community feedback, conducting multi-stakeholder conversations, and building mutual understanding among diverse stakeholders. Through the iterative discussion followed by a survey at the conclusion of each

focus group, we intended to design a safe space for nuanced dialogue and mutually beneficial learning, creating opportunities for in-depth discussion and even potential disagreement among stakeholders and an opportunity to anonymously express opinions in the survey following each focus group.

An expert panel identified by the research team convened at three consecutive focus-group sessions to exchange experiences, overcome potential misconceptions by educating each other on the subject, and collaboratively identify priorities. The added focus-group component was integral in informing participants' perspectives captured in succeeding surveys (see Figure 1). By bringing together diverse stakeholders, the focus groups created a unique venue for participants to challenge their initial perspectives. The modified Delphi method helped create a collaborative space for diverse participants to share their thoughts and explain their perspectives with each other. In contrast to traditional Delphi, the innovative Delphi method fit well with our community-engaged research goals, providing deeper qualitative data to complement and add nuance to traditional Delphi survey results.

The uniqueness of our method is seen in Table 1.

PROJECT BACKGROUND

The innovative Delphi method concluded the research stage of a 3-year community-based farmers market study to identify the nexus of barriers and possible interventions to increase access to farmers markets in the [name of

Table 1. Comparison of Modified Delphi Method With Traditional Delphi and Focus-Group Methods

	Traditional Delphi method	Focus-group method	Modified Delphi method
What it is	An iterative, usually three-round, procedure that begins with an open-ended elicitation round followed by two close-ended survey rounds that ask the expert panel to rate or rank items generated from Round 1 (Niederberger & Spranger, 2020)	A planned, relaxed, naturalistic dialogue among a small group of people on a specific topic (Israel & Galindo-Gonzalez, 2008)	A planned and systematic combination of focus groups and surveys after each round of Delphi
When to use it	To develop and achieve expert consensus on a complex issue or when available knowledge is incomplete or subject to uncertainty	To identify problems and encourage divergent thinking in a group setting	To understand the needs, barriers, and issues in depth rather than getting a ranking of the Delphi items
Main feature	Building consensus	Identifying views and needs	Getting richer contextual information in addition to achieving consensus
Who is at the table	People with organizational affiliations or expertise in the area	People with similar characteristics and lived experiences	Experts and community stakeholders with lived experiences
Research design	Predominantly quantitative	Qualitative	Mixed
Group size	15–50	10–12	12 (in our case)
Main benefit	Achieves consensus, which can be challenging when working on complex issues	Gets rich and in-depth information on the common needs, issues, and barriers affecting a group	Gaining richer contextual information and expert consensus
Limitation	Not recommended for outcomes evaluation	Not recommended for decision-making	More time-consuming to run and analyze data
Examples	Used in health sciences in the areas of health and well-being, health care, palliative care, health promotion and reporting, clinical sector, medical education, and other areas	Used to conduct a community needs assessment survey in schools, among community members, and in other public settings	Unique instances of combining traditional Delphi and focus groups to “integrate perspectives of practitioners and local stakeholders” (Canessa et al., 2022)

Innovative Delphi Method to Conduct Participatory Research

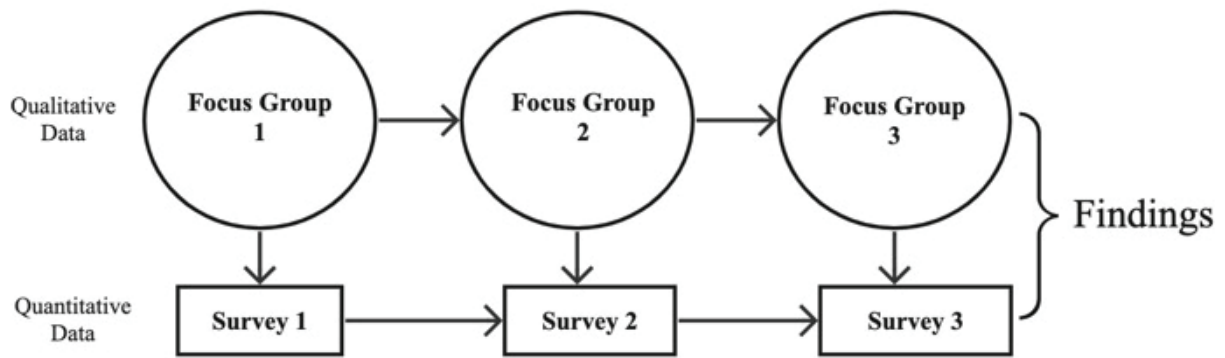


Figure 1. Innovative Delphi method.

geographic location] for low-income community residents and people of color. The goal of the larger study was to increase the accessibility of low-income shoppers and communities of color to healthy, fresh food sold at the farmers markets.

The research team included a county-based Extension academic, community partners, an Extension evaluation specialist, graduate student researchers, bilingual and Spanish interpreters, and a breakout-group notetaker. The team also consulted with a national Extension expert on the Delphi method.

Three consecutive Delphi focus groups followed by surveys with an expert panel of farmers market vendors, low-income shoppers, community advocates, and farmers market managers were conducted online over Zoom and Qualtrics in the winter of 2022. Participants were selected by using purposive sampling based on their connection to the topic of study, local knowledge, and lived experiences of low-income and Latinx community members in [county name] County, with two to four individuals per stakeholder group. Participants were English and/or Spanish-speaking, with English and Spanish focus-group facilitators, simultaneous interpretation, and translation of the slide deck and surveys provided.

The first focus-group round served as an introduction of the preliminary research findings and ranking of barriers and interventions. Each focus-group session concluded with an online Delphi survey (see Figure 1) administered in Qualtrics, which provided participants an opportunity to express their opinions anonymously. Surveys asked participants to rank barriers and necessary changes, or interventions, to increase access of low-income consumers and people of color to the studied farmers markets. Barriers and interventions were ranked on a 5-point Likert-type scale, with 1 = *Disagree*, 2 = *Somewhat disagree*, 3 = *Neither disagree nor agree*, 4 = *Somewhat agree*, 5 = *Agree* for barriers, and 1 = *Unimportant*, 2 = *Somewhat unimportant*, 3 = *Neither unimportant nor important*, 4 = *Somewhat important*, 5 = *Important* for interventions. Participants' consensus on barriers and needed interventions was defined as more than two-thirds of respondents agreeing on 4 (*Somewhat important* or *Somewhat agree*) or 5 (*Important* or *Agree*). The second and third focus-group rounds provided space to exchange and reconsider opinions, express disagreements, and revise responses based on new information. As a result, a final set of key barriers and interventions was identified in the third round based on two-thirds consensus among study participants (see Tables 2 and 3).

Table 2. Top Priorities Selected by Two-Thirds Consensus in Round 3 of DelphiAwareness barriers to shopping at farmers markets (n = 12)

Barriers	% Agree/Strongly agree
Lack of awareness about which forms of payment besides cash are accepted at markets	90
Lack of awareness about market season	90
Lack of awareness about CalFresh/Market Match at market	89
Lack of awareness about pandemic EBT (Electronic Benefit Transfer) at markets	89
Lack of awareness about market locations	80
Lack of awareness about market dates	80
Lack of awareness about market staff available to assist with questions	80
Lack of awareness about market times	70

Table 3. Top Priorities Selected by Two-Thirds Consensus in Round 3 of Delphi Marketing interventions (n = 12)

Interventions	% Somewhat important/Important
What are the most needed marketing changes to increase access of low-income communities and persons of color to the Sonoma County farmers markets? Make sure that new CalFresh users know about CalFresh at farmers markets and Market Match.	100
How important is it to use the following advertising channels to increase awareness about the farmers markets? Radio	100
How important is it to use the following advertising channels to increase awareness about the farmers markets? Signage, road signs, street banners	100
How important is it to advertise markets in the following ways? Inform community residents about CalFresh eligibility.	100
How important is it to advertise markets in the following ways? Coupons/ vouchers	100
Other marketing interventions: Make info booth easier to find.	100
What are the most needed marketing changes to increase access of low-income communities and persons of color to the Sonoma County farmers markets? Advertise locations and schedules of farmers markets.	90
What are the most needed marketing changes to increase access of low-income communities and persons of color to the Sonoma County farmers markets? Have market managers explain to customers how to use CalFresh and Market Match.	90
How important is it to use the following advertising channels to increase awareness about the farmers markets? CalFresh/WIC offices	90
How important is it to advertise farmers markets to CalFresh users (in English and in Spanish)? CalFresh users	90
How important is it to advertise markets in the following ways? Partner with organizations that serve CalFresh users.	90
How important is it to advertise markets in the following ways? Presentations to community groups	90
How important is it to advertise markets in the following ways? Geographically targeted marketing where low-income people live, work, and play	90
How important is it to advertise markets in the following ways? Peer-to-peer marketing (when customers promote markets to other potential customers)	90
How important is it to advertise markets in the following ways? Flyering at service providers for low-income residents	80
How important is it to advertise markets in the following ways? Increase visibility of market locations.	80
Other marketing interventions: Always have vendors in the same the spot.	80
Other marketing interventions: Make produce front and center at the market (rather than peripheral).	80
How important is it to advertise markets in the following ways? Social media	78
How important is it to use the following advertising channels to increase awareness about the farmers markets? Snail mail (postcards, flyers, letters)	70
How important is it to use the following advertising channels to increase awareness about the farmers markets? Electronic email lists, newsletters, online calendars	70
How important is it to advertise markets in the following ways? Farm to school (put farmers market produce in school lunches with the sticker advertising markets)	70

REFLECTIONS ON OUR PROJECT'S USE OF THE METHOD

The use of a virtual platform helped create an inclusive space for a diverse panel of experts. Although the project team was concerned about the risk of excluding potential participants due to limited access to technology, none of the invited study participants experienced noticeable challenges with access to and use of technology. The participants shared satisfaction with the virtual format and appreciation for the opportunity to participate in an inclusive study in part because of the virtual means.

Furthermore, the virtual delivery of the innovative method enabled researchers to bring together stakeholders from diverse geographies, language backgrounds, and roles for unique dialogue. For instance, a vendor-participant in one of the focus groups expressed appreciation for the opportunity to hear from the low-income consumer-participant about their experience shopping at the farmers market. The referenced vendor stated that they had never had an opportunity to hear about shopper experiences at the farmers market. In this way, the virtual focus group followed by a Delphi survey created a unique opportunity for diverse farmers-market stakeholders to convene and exchange their perspectives on the subject.

Some limitations were identified. Although we performed a brief evaluation with participants and the planning team, our study could have benefitted from a more comprehensive evaluation and further iterations of the innovative method. Future researchers may want to compare results from the innovative method, the focus-group method alone, and the traditional Delphi method alone for their contexts and use the one that best fits their needs.

EVALUATION AND OUTCOMES OF THE INNOVATIVE DELPHI METHOD

The innovative Delphi method was evaluated in several ways: Participants provided their feedback on the focus-group process by completing a brief evaluation poll with four questions (see Table 4) and answering questions during an open-ended discussion (see Table 5), and the study team provided written and verbal feedback (see Table 6) following the final round of focus groups. Upon collecting the evaluation data, our research team convened to collaboratively interpret evaluation results and to develop a plan for adapting the modified method for different contexts in our future research and evaluation work. Overall, the majority of focus-group participants expressed satisfaction with the opportunity to communicate their opinions, even when they differed from those of the rest of the group; to hear new perspectives; and to prioritize barriers and interventions. Meanwhile, the project organizers reflected upon logistics, facilitation, interpretation, intended outcomes, and other aspects of the focus groups and surveys. They also expressed overall satisfaction with the process, emphasizing the benefits of the multilingual focus groups, the professionalism of focus-group facilitators and their ability to establish clear and explicit ground rules of focus-group engagement, and the ability to create a unique space for stakeholders to engage with each other in dialogue.

Overall, by bringing together stakeholders from different roles, geographic areas, and relationships with the topic into the same virtual space and by creating space for collaboration between English- and Spanish-speaking participants through simultaneous translation, project organizers created a unique platform for participants to share individual points of view and challenge their perspectives.

Table 4. Poll Evaluation for Participants (n = 10)

	% Strongly disagree	% Disagree	% Neutral	% Agree	% Strongly agree
1. Were you able to provide the feedback you wanted on the barriers and interventions shared by the project facilitator?	0	10	10	50	30
2. At this point in time, do you feel that the barriers were successfully prioritized?	0	10	0	60	30
3. At this point in time, do you feel that the interventions were successfully prioritized?	0	1	0	60	30
4. Do you feel that differences of opinion in the small group were discussed and compromises were reached?	10	0	10	50	30

Table 5. Focus-Group Evaluation Questions for Participants

Open-ended discussion questions following focus groups
Do you have any other feedback?
What did you think about hearing other perspectives during the breakout groups? Was it helpful?
What did you think about simultaneous interpretation?
Would you have preferred the focus group to be held only in your primary language?
Were there any voices or perspectives left out of the conversation that you wish were represented?

Table 6. Project Evaluation Questions for Study Team: Open-Ended Reflection

Thinking about the logistics, technology, facilitation, interpretation, and surveying, please add your thoughts below.
What worked well?
What did not work well or could be improved upon?
What are key lessons learned or takeaways?
What findings stood out to you?

DISCUSSION

Modification of the traditional Delphi method to include iterative focus groups combined with iterative surveys has the potential to yield more nuanced and robust qualitative results than the traditional Delphi method alone. The proposed method merits further exploration among researchers and practitioners due to its ability to provide dialogical qualitative results while retaining the anonymity and objectivity of quantitative surveys, leading to more comprehensive results and a framework for participatory decision-making among diverse stakeholders.

Future implementers of the modified Delphi method should consider potential challenges in designing and implementing the proposed method, including the complexity of planning logistics, power dynamics, and use of technology.

A possible challenge of the proposed method is effectively designing and delivering focus groups and surveys concurrently, which can be onerous for researchers and evaluators with limited time, resources, or personnel capacity. Appropriate mixed-methods skill sets, ample time, and meticulous organization are required to deliver the proposed method most effectively.

Finally, researchers and evaluators should consider whether virtual or in-person delivery of the method is most appropriate for their study. Limited access to technology can inhibit virtual delivery of this method, and it is important to consider whether a virtual method is appropriate for the study population, including level of access to and comfort with technology and reliable Internet connections (Hall et al., 2021; Lai & Widmar, 2021). Although the researchers on this project chose the virtual method as the only available option due to the COVID-19 pandemic, this format was well received by the participants of the modified Delphi method.

RECOMMENDATIONS, IMPLICATIONS, AND APPLICATION

Several recommendations can help Extension practitioners replicate and adapt the method:

- Ensure that the research team has sufficient capacity to plan, deliver, and analyze mixed methods administered concurrently.
- Allocate ample time for discussion in either breakout sessions or as a large group for deeper conversations among focus-group participants.
- Reflect on and mitigate potential power imbalances when using heterogeneous expert panels.
- Explore use of collaborative technology tools, such as real-time surveys, Jamboards, Mentimeter, and other tools for collecting evaluation data.
- Consider modifying the method for in-person Delphi focus groups and surveys to facilitate opportunity for greater rapport and deeper discussion between participants.

Innovative Delphi Method to Conduct Participatory Research

Benefits of the modified Delphi method are apparent: It promotes inclusivity and a sense of community among multi-stakeholder participants in participatory decision-making (in our example, collaboratively identifying main barriers to shopping at farmers markets and interventions to overcome those barriers). The personalized engagement can lead to increased inclusivity and improved sense of community. It also allows diverse stakeholders to explore and inform each other's opinions and perspectives. Furthermore, this method can be implemented virtually or in person, based on the needs. In-person facilitation of the method could benefit Extension professionals using participatory decision-making framework and working with communities within the same geographic proximity and/or with limited access to the Internet and technology. The method could be used by Extension professionals working in agriculture, food systems, natural resources, community economic development, and other areas to foster dialogue and create inclusive spaces for communities in the United States and globally.

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