Backing the Banana in an Interdisciplinary Smoothie:
Social Science Methods for the Present and Future of Hazards Research

A Compilation of Discussion Notes Prepared by Liz Skilton and Heather Stone

On July 17, 2025, a group of over 40 researchers and practitioners from around the U.S. gathered at the Natural Hazards Workshop Researcher's Meeting in Colorado to discuss current and future research methods utilized by social scientists in hazards research at a conference session. As fitting with the overall Natural Hazards Workshop's theme for this year, focused on the next 50 years of hazards research, the session's focus was to provide a space for researchers and practitioners to reflect on the last fifty years of social science hazards research methods and envision the future of the field. Attendees at the session were informed that their participation would result in the compilation of notes from the session, reviewing the major themes and recommendations that emerged from the discourse. These themes and recommendations would then be compiled by the session organizers to be written up and distributed to the session participants as evidence of the discussion and subsequently submitted to the conference organizers to document this important conversation. To begin the session's discussion, a brief introduction about the history of social science research methods to study hazards was provided. Following this, attendees were given a sheet of questions to reflect on individually, before being asked to pair up with a small group to share their thoughts. The questions included a review of current research methods, tools, and processes, as well as future research areas and tools needed to support this research. Then, the whole group came together to compare notes on their small group discussions. No names or written evidence were collected through this process; instead, holistic thematic notes were taken to document group discussion. Below is a detailed summary of the results.

Over the past 50 years, social science research methods to collect on and tell the story of hazards and disasters have expanded as rapidly to meet the needs of researchers and practitioners as the growth in the number of researchers and practitioners in this field. Concurrently, a large push for interdisciplinary research has increased the need and desire for social science inclusion in collaborative research processes. As one of our attendees humorously noted, interdisciplinary research is like a smoothie that blends all disciplines together, but *social science research is like a banana;* you can always find it in a smoothie because of its uniqueness and flavorful contribution.

In thinking about where social science researchers and practitioners have been and where they can go as we look to the next 50 years, what can be learned from past methods and

current practices to envision the future of this research? And, which tools or methods have been most effective in working with communities to understand their hazards experiences? Some of the research methods that have emerged and been utilized in social science include: ethnographic research, oral history or other interview methods, surveys and GIS mapping, focus groups, content analysis, case studies, mixed methods, and a slew of many other quantitative and qualitative collection methods. Along with this rapid growth, there have been issues raised and addressed about social science research regarding the ethics of research, validity and reliability, replicability, bias and reflexivity, research design, data analysis and presentation, cross-sectional versus longitudinal approaches, and comparative studies' value in general. However, the benefits of social science research outweigh many concerns, which is one of the reasons we continue to advocate for its use and inclusion in research.

In discussing current research methods and tools used, attendees at the session described the varied efforts they have pursued to gather social science research data on experiences with hazards. Most researchers and practitioners in the room had experience with most social science methods. Similarly, in terms of tools, they were familiar using a variety of digital and analog methods such as the use of written materials (e.g., pens, paper, notecards, flipboards, dot stickers), softwares (e.g., NVivo, SPSS, Qualtrics, ArcGIS, Atlas.ti), recording equipment (e.g., Zoom, types of recorders), among others. Where the conversation really heated up was in the current development processes and access to these tools for research purposes. For example, a significant portion of the discussion centered on the accessibility and deprioritization of qualitative tools and methods as opposed to the easy access to the quantitative tools and methods. The attendees noted that overall, it is not a priority to use or teach qualitative methods or tools. Many universities often provide quantitative tools at discounted or no cost to students or researchers, but do not offer the same for qualitative tools. This complicates the ability for students to access and learn how to use these tools at early and often critical stages of their career development. Similarly, it obfuscates researchers' ability to access these tools for their research. Cost and access issues also complicate research across institutions and international collaborations. In many cases, collaboration with external partners is a challenge due to platform requirements and restrictions. A researcher or practitioner working with international collaborators cannot easily share their data across these digital boundaries. At the same time, repositories of knowledge (including methodological processes) and resources for quantitative purposes, exist, but very few are available that support the qualitative side. In terms of developing tools, there are tools that allow for the collection of qualitative and quantitative data, such as Qualtrics, but they are not

developed with social scientists' input, and they have limited qualitative analysis capabilities.

As we discussed tools and methods, we also discussed advances in AI. Since AI tools are new and untested for social scientists, we need to develop processes related to the use of human subjects' data in AI to ensure they are incorporated ethically and do no harm through their use. Some in the room were adamant that these tools should not be used, while others supported their use but with clear boundaries. All agreed that using AI does not replace the knowledge of a trained social scientist. Like with Qualtrics, AI can benefit from the inclusion of social scientists in development, especially in areas like natural language processing or large language models for qualitative analysis, including imagery and audio.

The discussion then shifted to interdisciplinary work and some of its challenges. Attendees appreciated the ongoing efforts to include social scientists in grant-funded research programs led by major organizations like NSF, NIH, DOE, and others. However, this inclusion often happens at the last minute during grant development, and social science research is frequently underfunded compared to the quantitative and science-based parts of these projects. The false assumption that social science research can be done quickly, cheaply, and by anyone also hinders the true integration of this interdisciplinary effort. For example, the methodological process to develop meaningful questions, hold engaging focus groups, and then analyze results holistically requires time, skill, and money. A more integrated approach to interdisciplinary research helps serve not only the goals of a project but also the communities that are included or hope to benefit from this research.

Overall, attendees left the session invigorated by the discussion on the current and future challenges faced by researchers and practitioners in the social science hazards field. Based on this discussion and compilation of notes, the following are the major recommendations for the future of social science hazards research in the next 50 years:

- Expand the training opportunities and access at all levels and across disciplines to enhance understanding and integration of social science in hazards research for the benefit of communities, researchers, and practitioners.
- Seek to expand and create tools that are specific to social science researchers, broadening the scope of current collection options.
- Develop methodological repositories for social science researchers and practitioners to collaboratively connect on what worked and what did not.
- Create processes for meaningful and conscious use of AI in social science research and with social science researchers.

- Continue to push for the expansion and integration, not just inclusion, of social science in hazards research.

The future of social science hazards research is *ripe*, as is the opportunity to value and appreciate the contributions of the researchers who spend their lives doing this work.

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