



NIST Data Collection Instruments
NIST DCI 009

Data Collection Instrument: Risk Preference in Community Resilience Planning

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Abstract

This Data Collection Instrument (DCI) publication outlines the development and application of a survey to study the differences between risk preferences of an individual making choices at the individual and community levels. Individuals and communities have different ideas about what risks they might be willing to take. When it comes to risk-taking, every individual has a different level of comfort, based on their unique experiences and values. Similarly, communities also have their unique attitudes towards risks based on those they serve and the constraints the community faces, as well as planning preferences. Consider a community planning a new park. Some residents might welcome the change, seeing it as an opportunity for recreation and socializing. Others might worry about increased traffic or noise and ultimately be more risk-averse. Typically, community-level decisions may be made by an individual or a collaborative planning team on behalf of a larger community. Such decision makers may have personal risk preferences, but hold different concerns when making a community resilience decision on behalf of the community. This study helps us understand whether the decision-maker's risk preference differs when they are making an individual-focused decisions versus when an entire community considered. Understanding these differences helps us create better plans for keeping communities safe and strong.

Keywords

Risk preference; risk aversion, risk perception, community resilience

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1. Introduction

This Data Collection Instrument (DCI) publication documents a study of the differences between risk preferences at the individual and community levels. Individuals and communities have different ideas of what risks they may be willing to take; based on their unique experiences, values, and potential impacts [1]. This survey design helps us evaluate whether the decision-maker's risk preference differs when a decision is made at the level of the community, or if they would continue to make decisions based on their individual risk preferences. We adopt the definition of community resilience from NIST's *Community Resilience Planning Guide* as a community's ability to anticipate, absorb, adapt to, and recover from disasters[2].

The DCI attempts to quantify risk preferences; an important factor in designing efficient measures, particularly for community resilience planning and analyzing the impact of risk on societal well-being. Current literature in the risk preference space features extensive exploration on risk at the individual level, but minimal work has been done to investigate risk preferences at the community level. Our DCI and subsequent analysis seek to compare these community preferences to those of individual attitudes. Risk perceptions, viewed as an individual's subjective assessment of the level of riskiness associated with a particular situation, [3] also play an important role in painting a well-rounded picture of individual and community risk attitudes. Understanding both risk preferences and perceptions help contribute to an improved understanding of the complexities of individual and community risk decision-making. This in turn can help inform policy-making and strategic planning for improved community resilience in the face of uncertainties and disasters. The DCI employs a wide range of elicitation methods to measure risk preferences and perceptions across varying domains. Relevant literature utilizes lottery-choice task [4] and multi-item questionnaires [5]. This DCI uses a combination of Likert style and lottery choice questions. A 10-point Likert scale is used when asking participants about their risk-taking preferences on behalf of themselves and their communities. Lottery choice style questions are then employed to ask participants their preference for a set of given probabilities related to either individual or community decision-making, with one set of question framed as a gain and the other framed as a loss. The DCI considers risk related decision-making at both a gain and a loss level to determine if the way in which a risk related question is framed influences participants decisions indirectly, hence influencing final results. Finally, several matrix style questions are measured on a 7-point Likert scale to measure individual risk perceptions in a variety of domains.

1. Several key factors have been identified to affect individual risk preferences, all of which were considered in our development of the DCI described in this publication. These same factors were also considered when posing survey questions: Can community risk preferences be defined in the same way as individual risk preferences?

2. How are risk preferences related to risk perceptions, and do individuals share similarities across different categories of risk (recreation, financial, health and safety, etc.)
3. How do individual risk preferences vary based on different elicitation methods? Is using individual risk preference measurements a good enough proxy for measuring community risk preferences, or do community risk preferences need to be measured separately?
4. How do community decisions differ between the gain space and the loss space? How do these results compare to those for individual decisions?

This DCI explains a survey design to collect data, with a particular focus on how spatial framing of risk influences individuals' communicated preferences regarding the four questions above. Collecting primary data on individual risk preferences and perceptions supports future research and development in the community resilience space and the use of risk preferences that can impact benefit-cost analyses of community resilience planning alternatives. This survey design was used to collect data from June to September of 2024.

2. Background

This section provides a brief overview of the literature most relevant to this DCI. The first subsection focuses on risk preference. The second subsection focuses on risk perception. The third subsection focuses on community risk. The final subsection focuses on different risk elicitation methods used in the current literature and relevant to our work. Dulam et al. (2025) provide a more complete review of the literature related to elicitation of risk preferences and risk perception [6] that falls outside the use of survey data collection [6]

2.1. Risk Preference

Individuals typically make decisions by evaluating options based on their preferences and available information [7]. The theory of choice, a concept that is closely related to the study of risk preferences, is grounded by the assumption that individuals seek to maximize their satisfaction and expected utility [8]. An individual's risk preference significantly influences how they evaluate and choose between different options within a decision-making framework, particularly when those options involve varying degrees of stated risk. Risk preference is a person's preference over certainty when given a choice between different options with uncertain outcomes. An individual's risk preference affects their tendency to favor certain versus risky outcomes when making decisions. It is essential to understand individual risk preferences in order to design effective measures, particularly in the context of community resilience planning or analyzing the impact of risk on societal well-being. Impact and inclusion of individual risk preferences has been extensively done but, to our knowledge, community risk preferences have not been explored as compared to individual risk attitudes.

In economics, risk can be associated with both negative outcomes (i.e., potential loss) and positive outcomes (i.e., gains from a lottery). Economists typically associate risk more with uncertainty than with whether the outcome is positive or negative [9]. When individuals are confronted with this uncertainty, their actions are shaped by their risk behavior which in turn reflects how they navigate and manage potential outcomes [10]. In classic economic models, risk preferences are often represented by utility functions, with the level of risk aversion of an individual defined by "the concavity of the utility function" [11]. Concave utility functions are associated with risk aversion, whereas convex utility functions are associated with risk seeking [11]. A risk-seeking individual would be willing to pay more than the expected value for an uncertain outcome. The psychology field tends to focus more on behavior and the use of narrative terms when communicating risk preferences, with literature describing risk-averse versus risk-seeking individuals as balancing between security and potential [12]. There is a range of perspectives on the interpretation and motivations behind individual risk preferences. This variety of perspectives within the literature highlight the need for nuanced approaches to studying and understanding risk-related behaviors [8]. We contribute to this literature in a meaningful way by exploring the similarities and differences between an individual's risk preference when making decisions for themselves compared to the same individual making a risk-taking decision on behalf of their community.

2.2. Risk Perception

Risk perception can be defined as an subjective judgment concerning a given risk, or their perceived susceptibility to a threat [13]. Ferrer and Klein analyze risk perception in the context of health behavior, stating that it is a key component of many health behaviors change theories. They find that health interventions that successfully capture and change individual's risk perceptions produce subsequent increases in health behaviors [13]. We can use the concept of risk perception and its significance in the healthcare field to explore how individuals apply their personal risk perception in other fields such as community resilience.

Schroeder et al. note that "risk perceptions represent a person's views about risk inherent in, or riskiness or, a particular situation" [3]. An individual's risk perception is factored by various characteristics, experiences, and information. Hence, risk perceptions are subject to change when new information and experiences have been encountered, whereas risk preference is seen to be more of a consistent individual trait [14]. Ferrer and Klein believe that risk perceptions can be classified into two main categories based on the origin of the risk [13]. The first group being deliberative risk perceptions which are systematic, logical, and rule-based, and the second group being affective or experiential risk perceptions which are based on emotions and experiences [13]. These two groups highlight the duality of how individuals view and respond to risks, a finding that is relevant when considering our survey and its subsequent results. The duality of risk perceptions indicates that individuals combine both rational and emotional elements when assessing the level of risk associated with a particular scenario.

2.3. Community Risk

Within the literature, there is minimal research on community risk preferences and decision making. Community decision-making refers to a single individual or a group of individuals making decisions on behalf of the entire community to which the decision-makers may or may not belong. Knowledge of this preference is necessary in exploring community decision-making and can sway the outcome of benefit-cost analyses (BCAs) [15]. There is a gap in the current literature concerning risk perception when decisions are made on *behalf* of a group (i.e., community).

Although there is not much research on community decision-making involving risk preferences, there is valuable work on small group risk preferences and the practice of group decision-making [16]. Group decision-making refers to several individuals coming together to make a cohesive decision. Additionally, the literature on group decision-making tends to focus on small groups rather than at the community scale. Research confirmed that groups do tend to make decisions that differ from those of individuals, with individuals preferring to match with others who have similar risk preferences in their networks [17]. The literature reveals, through the use of valuation experiments, that the average small group (i.e., three or four individuals) is more risk-averse than an individual [16]. Results from Van Knippenberg et al. also indicate that group risk preferences tend to be neither risk-seeking or risk-averse, rather their preferences depend on the problem that the group is facing [18].

Another branch of community risk that has previously been explored in the literature is surrogate decision making. Surrogate decision making is typically characterized as one individual making a decision on behalf of another individual, opposed to on behalf of a group [19]. Recent research has focused on one's accuracy of surrogate decision-making specifically in the healthcare domain, where health decisions are critical especially for an aging population [20–22], or in the financial sector, where financial experts take investment decisions on behalf of their clients or govern one's financial affairs [23, 24]. However, surrogate decision making has not been explored for communities where decisions impact a large population. We attempt to fill this gap in the literature with the help of our survey and subsequent results as our survey asks respondents to consider their risk preferences for themselves and when several people are involved.

2.4. Risk Elicitation Methods

The literature exhibits a wide range of elicitation methods that have been developed to measure risk preferences across domains. Risk preference elicitation methods are prominently featured in the work of Holt and Laury and Dohmen et al. [4, 5]. Holt and Laury test risk aversion by presenting subjects with simple lottery choice tasks to estimate respondents' degree of risk aversion. The design of their experiment allowed for authors to compare behavior under real and hypothetical incentives, for both low and high money payoff lotteries. Lottery choices are often preferred by economists as they are easier to translate into measures and hence, are preferable when utility functions are in question [4]. Results from the paper indicate that respondents show an increased tendency to select the safe option as stakes are raised [4]. This is a clear indication of increasing relative risk aversion, which could be consistent with a wide range of utility functions, including those with constant absolute risk aversion [4]. Regarding the work of Dohmen et al., they consider whether survey questions are really an effective method for measuring risk attitudes. Since survey questions are not incentive compatible, economists are frequently skeptical about whether self-reported personal attitudes and traits are behaviorally meaningful [5]. Dohmen et al. implement a multi-item questionnaire along with incentivized games. They ask individuals about their personal judgement of their willingness to take risks and compare the results to Domain-Specific Risk-Taking (DOSPERT) Scale risk perception questions. The DOSPERT questions involve self-reported information on several varying risk behaviors such as holding stocks, being self-employed, participating in sports, and smoking. Results from the paper suggest that "risk attitudes are strongly, but not perfectly correlated across contexts" [5].

3. Survey Instrument

The survey instrument presented in this section can be generalized to be utilized for other risk preferences and perceptions surveys. As presented, the DCI was adapted from several existing risk preference surveys and draws heavily on insights from segments of the economic and psychological literature, as referenced by Dulam, Gore, and Helgeson [6]. Additional questions were specifically designed to further explore risk taking behavior at both the individual and communal level in order to explore respondents decision-making processes, particularly in relation to community resilience planning. The data collection occurred from June to September of 2024 and the final sample collected includes 159 responses.

3.1. Survey Consent

The first section within the survey was presented to obtain respondents' informed consent. The full language from the question is included below, as well as the response options. If a potential respondent did not consent, they were thanked for their time and interest and the survey was terminated at that point.

Welcome!

We thank you very much for participating in this survey. The purpose of this study is to understand what people look for in their vehicle purchases. This survey should take about 10-15 minutes to complete.

This survey will focus on the passenger vehicles that your household owns, which does not include motorcycles. Your household includes all the persons who occupy the housing unit as their usual place of residence.

In order to participate in this research please review the Consent to participate in research document and indicate whether you consent to participating. This information can be found at this link: Household vehicle survey information sheet

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- *I consent*
- *I do not consent*

3.2. Survey Sections

The survey instrument includes seven main sections: (1) risk preference for gains, (2) risk preference for losses, (3) risk perception, (4) attention check, (5) professional demographics, (6) personal demographics, and (7) additional questions.

3.2.1. Screening Demographics

The first section of the survey includes one demographic screening question. The question measures the age of participants separating them in groups ranging from under 18 to over 85. Participation was restricted to individuals who were 18 years or older.

How old are you?

- *Under 18*
- *18 - 19*
- *20 - 24*
- *25 - 29*
- *30 - 34*
- *35 - 39*
- *40 - 44*
- *45 - 49*
- *50 - 54*
- *55 - 59*
- *60 - 64*
- *65 - 69*
- *70 - 74*
- *75 - 79*
- *80 - 84*
- *Over 85*

3.2.2. Risk Preference for Gain Questions

The second section of the survey poses questions surrounding individuals' risk preferences on both a personal and a community level. The first pair of questions asks individuals to rate their level of risk-taking on a 10-point Likert scale, both in relation to themselves and to their community. The second pair of questions asks respondents to consider an imaginary coin flip, where there is a 50% chance of winning the value assigned to heads, and a 50% chance of winning the value assigned to tails. This pair of questions once again prompts respondents to assess risk at both the personal and community levels. By asking similar questions at both the personal and community levels, we can compare how individuals evaluate and incorporate risk into their decision-making processes for themselves versus their communities.

How do you see yourself: Are you generally a person who is fully prepared to take risks or do you try to avoid taking risks? Please answer in general – these can be risks in any realm of your life.

- 1 (Avoid Risk)
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10 (Risk Taking)

When making a recommendation for your community: are your recommendations generally risk taking or do you try to avoid risks in your recommendation?

- 1 (Avoid Risk)
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10 (Risk Taking)

Choose the option you most prefer for yourself where the results are based on a fair coin flip: There is a 50% chance of gaining the value assigned to heads (H) and a 50% chance of gaining the value assigned to tails (T).

- $H = \$1,960$ and $T = \$1,960$
- $H = \$1,680$ and $T = \$2,520$
- $H = \$1,400$ and $T = \$3,080$
- $H = \$1,120$ and $T = \$3,640$
- $H = \$840$ and $T = \$4,200$
- $H = \$140$ and $T = \$4,900$

Suppose you are assisting in the decision-making process for your community of 100,000 residents. Choose the option you most prefer for your community to take where the results are based on a fair coin flip: There is a 50% chance of gaining the value assigned to heads (H) and a 50% chance of gaining the value assigned to tails (T).

- $H = \$2$ million and $T = \$70$ million
- $H = \$12$ million and $T = \$60$ million
- $H = \$16$ million and $T = \$52$ million
- $H = \$20$ million and $T = \$44$ million
- $H = \$24$ million and $T = \$36$ million
- $H = \$28$ million and $T = \$28$ million

3.2.3. Risk Preference for Loss Questions

The next section of the survey proposes a hypothetical coin toss to examine respondents' preferences regarding loss in risk-taking decision-making scenarios. The questions indicate that there is a 50% chance of losing the value assigned to heads, and a 50% chance of losing the value assigned to tails. The pair of questions prompts respondents to consider their loss preferences at both the personal and community levels, enabling a comparison between individual and collective loss values.

Choose the option you most prefer for yourself where the results are based on a fair coin flip: Red Indicates a loss. There is a 50% chance of losing the value assigned to heads (H) and a 50% chance of losing the value assigned to tails (T).

- *H = \$1,680 and T = \$1,680*
- *H = \$1,440 and T = \$2,160*
- *H = \$1,200 and T = \$2,640*
- *H = \$960 and T = \$3,120*
- *H = \$720 and T = \$3,600*
- *H = \$120 and T = \$4,200*

Suppose you are assisting in the decision-making process for your community of 100,000 residents. Choose the option you most prefer for your community to take where the results are based on a fair coin flip: Red Indicates a loss. There is a 50% chance of losing the value assigned to heads (H) and a 50% chance of losing the value assigned to tails (T).

- *H = \$22.4 million and T = \$22.4 million*
- *H = \$19.2 million and T = \$28.8 million*
- *H = \$16 million and T = \$35.2 million*
- *H = \$12.8 million and T = \$41.6 million*
- *H = \$9.6 million and T = \$48 million*
- *H = \$1.6 million and T = \$56 million*

3.2.4. Risk Perception Questions

The next section of the survey involves six likert style questions based on the DOSPERT Risk Questions. These are a series of survey questions that are designed to assess individuals' perceptions of risk in various domains. These questions present scenarios involving different types of risk — recreational, financial, social, ethical, or health and safety — and in turn ask respondents how they would rate the riskiness of each scenario based on how likely they are to engage in the stated activity or behavior. For the sake of our survey, we selected six DOSPERT-style risk questions to avoid mental fatigue but to still provide some indication of risk preferences across domains. We selected three in the domain of financial risk, two in recreational risk, and one in health and safety risk. These questions were rated on a 7-point Likert scale, allowing us to quantify perceptions of risk on a wide scope across different contexts. The responses to these questions provide insights into individuals' risk tolerance and decision-making processes within specific domains.

Please answer these questions for yourself. For each of the following statements, please indicate how risky you perceive each situation.

	<i>Not at all Risky</i>	<i>Slightly Risky</i>	<i>Somewhat Risky</i>	<i>Moderately Risky</i>	<i>Risky</i>	<i>Very Risky</i>	<i>Extremely Risky</i>
<i>Going camping in the wilderness</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<i>Investing 5% of your annual income in a very speculative stock</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<i>Driving a car without wearing a seatbelt</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<i>Betting a day's income on the outcome of a sporting event</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<i>Taking a skydiving class</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<i>Investing 10% of your annual income in a new business venture</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3.2.5. Attention Check

The survey also included one attention check question at the end of the Risk Perception set. The attention check was embedded in a matrix with the six DOSPRT Risk questions and asked

respondents to select *Not at all Risky* as the answer to that question. In surveys that take longer than 10 minutes to complete, it is good practice to include at least one attention check question to ensure data quality.

Please answer these questions for yourself. For each of the following statements, please indicate how risky you perceive each situation.

	<i>Not at all Risky</i>	<i>Slightly Risky</i>	<i>Somewhat Risky</i>	<i>Moderately Risky</i>	<i>Risky</i>	<i>Very Risky</i>	<i>Extremely Risky</i>
<i>Please select "Not at all Risky" for this</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3.2.6. Professional Demographic Questions

The next section considers questions related to professional demographics. The survey included questions about respondents' current position, their area of expertise, the number of years they have worked on issues related to resilience and/or sustainability, how much of their work is interdisciplinary, and the spatial scale that their work addresses.

Which of the following categories most accurately describes your current position(s)? Select all that apply

- *Student (Undergraduate)*
- *Student (Graduate)*
- *Teaching/Research Assistant*
- *Postdoctoral Researcher*
- *Adjunct Professor*
- *Professor*
- *Private Industry*
- *Consulting*
- *Government (Federal)*
- *Government (State)*
- *Government (Local)*
- *Other. Please specify:*

Which of the following categories most accurately describes your area(s) of formal expertise? Select all that apply

- *Anthropology*
 - *Business Administration*
 - *Economics*
 - *Education*
 - *Engineering*
 - *Environmental Science*
 - *Political Science and International Relations*
 - *Psychology*
 - *Public Relations and Administration*
 - *Social Science*
 - *Statistics*
 - *Urban Planning*
 - *Other. Please specify:*
-

How many years have you been working on issues related to resilience and/or sustainability professionally?

- *Less than 1 year*
- *1*
- *2*
- *3*
- *4*
- *5*
- *6*
- *7*
- *8*
- *9*
- *10*
- *11*
- *12*
- *13*
- *14*
- *15*
- *16*
- *17*
- *18*
- *19*
- *20*
- *21*
- *22*
- *23*
- *24*
- *25*
- *More than 25 years*

How much of your work do you consider to be interdisciplinary in nature? (Interdisciplinary indicates that you work with at least one person from another discipline or the work produced blurs lines between disciplines.

- *None at all*
- *A little*
- *A moderate amount*
- *A lot*
- *A great deal*

What spatial scale does the majority of your work address? Please select one.

- *Single Building*
 - *Infrastructure system(s)*
 - *Multiple buildings*
 - *Local/municipal level*
 - *State or territory*
 - *National*
 - *International*
 - *Other or not applicable. Please provide additional details:*
-

3.2.7. Personal Demographic Questions

The final section of the survey considers personal demographic questions. The survey includes questions about household size, ZIP code, gender, race and/or ethnicity, level of education, and household income. The survey also includes a question about the respondents' personal worries on the impacts of climate change.

Including yourself, how many people live in your household?

- *1*
- *2*
- *3*
- *4*
- *5*
- *6 or more*

What is your ZIP code?

Gender: Select all that apply (optional)

- *Male*
- *Female*
- *Transgender, non-binary, or another gender*
- *Prefer not to answer*

What is your race and/or ethnicity? Select all that apply.

- *American Indian or Alaska Native*
- *Asian*
- *Black or African American*
- *Hispanic or Latino*
- *Middle Eastern or North African*
- *Native Hawaiian or Pacific Islander*
- *White*

Please indicate your highest level of education (include the degree you are currently working on if applicable)

- *Some high school*
 - *High school*
 - *GED*
 - *Some college*
 - *Associate's degree (2-year degree)*
 - *4-year college degree*
 - *Masters degree*
 - *Doctoral degree/advanced degree*
 - *Other*
-

*What is your annual **household** income?*

- *Less than \$30,000*
- *\$30,000 to \$59,999*
- *\$60,000 to \$89,999*
- *\$90,000 to \$119,999*
- *\$120,000 to \$149,999*
- *\$150,000 to \$179,999*
- *\$180,000 to \$209,999*
- *\$210,000 to \$249,999*
- *\$250,000 or more*
- *Prefer not to answer*

How much do you, personally, worry about the impacts of climate change?

- *None at all*
- *A little*
- *A moderate amount*
- *A lot*
- *A great deal*

3.2.8. Additional Questions

Additionally, we included one open-ended question at the end of the survey to allow respondents to share any additional opinions that may be relevant to risk and decision-making that were not specifically addressed within the survey. We also added a question asking respondents to clarify whether they are employed by the U.S. Federal Government. Finally, the

survey included three questions asking respondents if they would like to receive remuneration or research updates from the survey and in turn asked them to provide an email address.

Please feel free to share any additional thoughts you have on risk and decision-making with the research team. (You can also leave this section blank)

Are you an employee of the United States Federal Government?

- Yes
- No

Please select all that apply.

- *I would like to receive remuneration for my time spent on this survey*
- *I would like to receive research updates from this work*

Would you like to receive email updates about this research?

- Yes
- No

Please provide your email address:

4. Survey Approvals and Data Collection

Prior to distribution, the survey went through a pilot testing stage and the approvals. During the pilot testing stage, colleagues, including social scientists, planners, and engineers, gave feedback on the clarity of questions, flow of the survey, as well as time needed to mindfully complete the survey. There were a few changes made to the instrument to add information for greater context following the pilot testing stage. Pretesting is an important stage of the survey design process to collect feedback and incorporate changes before the design is finalized. It is also helpful to test the length of the survey, because different questions may take more or less time for participants to answer than expected. Thus, having real responses to gauge the true survey administration time is invaluable.

The survey approval process at NIST includes two approvals; the timing of these approvals is not required to be sequential and can be run in parallel. The first is the Institutional Review Board (IRB), which safeguards all human subject welfare in human subjects' research including surveys and questionnaires. The IRB reference number for this data collection at NIST is EL-2024-0351. The second approval process is the Paperwork Reduction Act (PRA), which requires the approval of any government agency to collect data through a survey to ensure that there is no undue burden placed on individuals. The Office of Management and Budget (OMB) oversees the approval process, and the PRA approval number for this data collection is 0693-0089.

The data for this survey was collected by using a snowball sampling method. The initial recruitment emails were sent to individuals involved in community resilience planning and they were asked to forward the request to others in the field. Additionally, flyers with a link to the survey were handed out in July of 2024 at the Natural Hazards Workshop. The data collection occurred from June to September of 2024. The final sample included 159 completed responses.

5. Summary and Future Efforts

At the time of writing, literature is still lacking in the areas of community risk analysis and decision making. Although notable strides have been taken to explore group decision-making and the aggregation of individual decision-making, this is an area where applied research continues to be critical to advance models and BCAs for community resilience planning. Surrogate decision-making is a good starting point for community risk assessment; however, the literature in this area has been fairly restricted to the healthcare field [21, 22] and the financial sector [24–26]. Steps need to be implemented to apply the concepts of surrogate decision-making into community resilience planning, a gap that we attempt to fill through the implementation and subsequent results of our survey.

As the researchers undertake the next steps in improving community resilience planning and understanding how risk preferences and perceptions differ at the individual and community level, this DCI provides critical areas of continued research to best understand respondents' decision-making behavior in risk-taking scenarios.

Future iterations may incorporate choice experiments designed to understand the differences between collective group decision-making and community decision-making—specifically examining the quantitative similarities and differences between decisions reached through forced group unanimity versus those made by an individual on behalf of a group to which they belong. Future researchers may also choose to run this survey on a population of lay people, as this specific survey focuses on a population of individuals who are community resilience experts.

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