



Types and forms of resilience in local planning in the U.S.: Who does what?

Jesse M. Keenan

Graduate School of Design, Harvard University, 407 Gund Hall, 48 Quincy Street, Cambridge, MA, 02138, United States



ARTICLE INFO

Keywords:

Resilience
Planning
Local governments
Hazard mitigation
Climate change

ABSTRACT

This paper presents and analyzes the results of a survey of actors ($n = 130$) engaged in planning activities in local governments in the United States (U.S.). This exploratory survey was designed to evaluate the nature of existing resilience, climate change and multi-hazard planning activities, if any, as well as additional considerations for understanding the general state of awareness and knowledge of resilience activities and strategies among various public sector actors. The survey data tests several hypotheses, including the hypothesized disproportionate activity of large cities; the positive correlation between resilience, hazard mitigation and emergency planning; and, the dominate usage of disaster and engineering conceptual variants of resilience. Data from the survey provides evidence in support of an affirmation of the hypotheses. The paper offers insight into the dominate actors and frames that are driving resilience planning, as well as the challenges faced by a lack of discipline for applying categorical variants of resilience.

This paper presents and analyzes the results of a survey of actors ($n = 130$) engaged in planning and management activities in local governments from across the United States (U.S.). This exploratory survey was designed to evaluate the nature of existing resilience, climate change and multi-hazard planning activities, if any, as well as additional considerations for understanding the general state of awareness and knowledge of resilience activities and strategies among various public sector actors. The survey data tests several hypotheses relating to the state of resilience planning in local governments. The first hypothesis is that jurisdictions with large populations ($n = 500,000+$, “Large Cities”) are more likely to be advancing resilience and climate change planning activities than cities of a lesser population (“Hypothesis A”). The second hypothesis is that resilience planning among all respondents is positively correlated with existing activities for emergency management planning and hazard mitigation planning (“Hypothesis B”). Finally, consistent with Hypothesis B, the third hypothesis is that a majority of respondents are framing resilience within a single-equilibrium understanding of resilience most closely aligned with the concepts of ‘disaster’ or ‘engineering’ resilience (Davidson et al., 2016; Meerow et al., 2016) (“Hypothesis C”). In addition to addressing these hypotheses, the survey was designed to offer insight into the sector specific focus of resilience planning, the general awareness and sourcing of resilience resources, and the extent to which there has been engagement with the resources and activities associated with the multi-agency federal initiative known as the U.S. Community Resilience Panel for Buildings and Infrastructure Systems.

While much scholarly attention has been focused on comparative or

meta-analysis of resilience and climate change adaptation planning among local governments in Europe, Asia and Latin America (Anguelovski et al., 2016; Araos et al., 2016; Crowe et al., 2016; Mehmood, 2016; Suárez et al., 2016; Rudolf et al., 2017), it has only been in recent years that resilience and adaptation plans have been equally evaluated in detail in the U.S. (Berke et al., 2014a, 2014b; Shi et al., 2015; Stults and Woodruff, 2016; Woodruff and Stults, 2016). However, these evaluations have almost exclusively focused on a textual analysis of existing plans and have not widely surveyed those actors who are engaged in the process of developing, executing or managing various plans. Globally, the varied application of various concepts of resilience (e.g., disaster, engineering, socioecological, et al.) by these actors have resulted in a patchwork for practices based on an equally diverse set of interpretations and motivations (Keenan et al., 2016; Béné et al., 2017). This article seeks to address this gap in the literature by assessing the human elements of the institutional capacities shaping a variety of planning processes among the sample local jurisdictions. With a better understanding of actor orientation, co-alignment of planning activities, and the relative capacity of various size jurisdictions, federal, state and civic sector leadership may be in a position to more accurately and effectively provide resources, promulgate policy directives and communicate management challenges and opportunities.

1. Resilience planning in local governments in the U.S

In recent years, studies have sought to provide insight into a broad

E-mail address: jkeenan@gsd.harvard.edu.

spectrum of federal and local adaptation plans and their associated barriers for development and execution in the U.S. (Bierbaum et al., 2013). In general, the barriers have been consistent with what Moser and Ekstrom outlined nearly a decade ago, including a lack of skilled leadership and a lack of an agreed upon problem, approach and/or method (Moser and Ekstrom, 2010; Hamin et al., 2014; Hamina and Gurran, 2015). At best, many U.S. municipalities have been observed to be in either early scoping or planning exercises with few engaging in implementation (Shi et al., 2015).

A review of early stage literature has put forth four fundamental questions regarding local government adaptation planning. First, what is the influence of various federal policies in hazard mitigation and climate change on local planning decisions (Berke et al., 2014a, 2014b)? Second, does the size of local governments necessarily correlate with resource allocation for adaptation planning (Shi et al., 2016)? To this end, is it just large cities that have the expertise and can afford to engage in adaptation planning? Third, what are the implications of various stakeholders merging or conflating disaster risk reduction and its nearest cousins in disaster or engineering resilience with climate change adaptation frames (Keenan et al., 2016)? The literature has long acknowledged the necessity of adaptation to build upon the institutional capacities and knowledge of disaster risk reduction, but very little literature has evaluated the discontinuities or gaps that may result from such an alignment (Solecki et al., 2011).

Fourth, the literature has not identified who among various actors is at the helm of these efforts. Is it engineers who seek to apply single equilibrium engineering resilience of closed infrastructure systems, emergency managers who have followed emergent federal policies on matters of disaster resilience, urban planners who have tracked the emerging discourse in community or urban resilience, environmental policy experts who are building upon a legacy of multi-equilibrium ecological resilience, or, some combination of actors or frames (Meerow et al., 2016)? While it is likely that it is combination of actors and frames, there is no empirical understanding of what, if any, are the dominate frames, backgrounds and knowledge shaping emerging activities. As will be discussed, some emerging qualitative evidence suggests that emergency managers and engineers are having a disproportionate impact through the utilization of disaster and engineering resilience frames. While it is beyond the scope of this paper, it is assumed that the synergies and conflicts between the various concepts of resilience and adaptation are potentially problematic by virtue of a lack of a certain determinacy regarding legislative, design and communicative intent (Keenan, 2017). Collectively, these questions contextualized and informed the development of the hypotheses described in the following section.

2. Research design and methodology

The research design of this paper is centered on a survey containing sixteen (16) questions (Bickman and Rog, 2008; Groves et al., 2011). A copy of the survey instrument is contained in the Appendix. The survey design was developed in conjunction with the activities of the federal multi-agency panel operating as the U.S. Community Resilience Panel for Buildings and Infrastructure Systems (“CRP”). The survey design was evaluated subject to a peer review of participants from the CRP, U.S. Environmental Protection Agency (EPA), the National Institute of Standards and Technology (NIST) and the Public Technology Institute (collectively, the “Review Panel”). Pursuant to federal regulations, the survey instrument was issued by CRP and not any of its affiliated federal co-sponsors. As such, no federal agency has exercised oversight or editorial discretion over the collection or interpretation of the data in this paper.

However, the Review Panel participated in focus groups that edited and tested the survey questions. In addition, the Review Panel collected and organized the email data for approximately 300 persons within their network who together make up the total population of this survey.

The survey was emailed with a link to the sample population and remained open online for a period of 120 days in the spring of 2017. The response rate was 43% (n = 130). There are several limitations to this sampling strategy. First, the sample population may be slightly biased toward those individuals and jurisdictions who are engaged in some measure of resilience planning by virtue of the network of the Review Panel. An additional potential selection bias may relate to those who answered the survey of behalf of their jurisdiction. It is possible that these respondents were internally selected to answer based on their recognized superior knowledge of resilience planning activities. Therefore, the representativeness of this sample cannot be warranted as a random sample. Second, the relatively low response rate can be partially attributable to skepticism and/or apathy of respondents to engaging what was perceived as a federal survey following the recent presidential transition.

The pathway of the survey was based on conditional responses, whereas, following an ascertainment of local planning exercises (e.g., land use, resilience, hazard mitigation, et al.) and corresponding hazards, those without knowledge of specific knowledge of resilience planning activities were directed to Question #15 regarding an open solicitation for a definition of resilience. Therefore, one portion of the survey data is from only those respondents (n = 83, 75%) who professed at least some familiarity with resilience planning in their respective jurisdictions, as per Question #6. All respondents were solicited on their knowledge of the CRP and whether they would like to be engaged with or in contact with the CRP. The quantitative results of the survey were analyzed using Excel and STATA software and were subject to linear regression (Bollen et al., 2016), propensity scoring (Schonlau et al., 2009) and factor analysis (Costello and Osborne, 2005). The latter two methods were utilized to explore various relationships not presented in this paper. Answers to Question #15 were subject to textual content analysis (Stemler, 2001) and were then classified into one or more of the several categories of community, disaster, ecological, engineering, socioecological and urban resilience (Davidson et al., 2016; Meerow et al., 2016). Finally, for multiple questions, some manually entered datum in the “other” categories were recategorized within the main categories presented in the questions.

The development of the hypotheses was based on qualitative case study spanning 27 months, derived from the activities of CRP that were varied in terms of geography within the U.S., federal and private sector participation, and hazard and sector specific exercises (Noor, 2008). The primary modes of data collection, including dozens of unstructured interviews (Rubin and Rubin, 2011) were from four national conferences, monthly conference calls and the archive of CRP containing meeting notes and presentation slides published on the CRP’s website (Community Resilience Panel for Buildings and Infrastructure Systems (CRP, 2017). Consistent with the hypotheses, the local activities were found to be predominately driven by emergency management and/or various types of engineers operating in cities with relatively large populations. In addition, these activities were observed to be primarily integrated within existing hazard and emergency planning processes. There was no observed consistent use of a specific frame of resilience and/or adaptation. The aforementioned qualitative methods were likely insufficient to fully capture the data necessary to evaluate consistency and usage of the various concepts of resilience evaluated herein. However, given the alignment of resilience activities with disaster and engineering activities and/or actors, it was hypothesized that disaster and engineering categorical variants of resilience would be disproportionately represented among actors engaged in resilience activities.

3. Survey results

3.1. Geography and demographics

The survey was initiated by 130 respondents and was completed in its entirety by 63% (n = 82) of the respondents. The most frequently

Download English Version:

<https://daneshyari.com/en/article/7465771>

Download Persian Version:

<https://daneshyari.com/article/7465771>

[Daneshyari.com](https://daneshyari.com)