

DRAFT Research Standards for the Academic Discipline of Emergency Management
Updated as of October 2015

I. Preface

The academic discipline of emergency management studies how humans and their institutions interact and cope with hazards and vulnerabilities, and resulting events and consequences. Among emergency management's disciplinary responsibilities is the generation of new knowledge through original basic and applied research and the dissemination of related results. Emergency management research is the systematic process of developing a research design, collecting and analyzing data, interpreting the results, and reporting the findings in a way that meets the established standards for the discovery, verification, and dissemination of knowledge in the discipline.

This document presents standards for conducting and publishing research in the discipline of emergency management. The primary purpose of these standards is to facilitate the conduct and dissemination of high quality emergency management research. When the standards articulated in parts II and III of this document have been met, the discipline of emergency management will recognize the research as contributing new knowledge to the discipline.

The standards apply to the research efforts of students, faculty, and scholars who associate themselves and/or whose academic unit associates itself with the academic discipline of emergency management. These standards also provide all members of the emergency management higher education community a basis for evaluating the quality and potential contributions of emergency management research.

The standards outlined in the following pages are similar to those of other established social science disciplines. Their delineation herein is not intended to differentiate emergency management from other disciplines in the scientific academy; rather, the document is intended to reflect our likeness and the value that we assign to research in our discipline.

II. Standards for Conducting Emergency Management Research

The Standards for Conducting Emergency Management Research should be met by emergency management (EM) researchers prior to collecting data for any given study.

A. Situational Context

1. EM researchers shall consider the significance of their research. To do so, each will critically explore the context of their research topic in the initial design stages. Exploration of this context includes examining the historical, political, economic, social, and/or physical circumstances that provide an explanation for, or understanding of, the research topic. This context needs to provide a basis from which the researcher can articulate the study's potential significance to practice, policy, and the discipline (i.e., education and/or research).

2. As appropriate given the topic, this context exploration of context will include a review of relevant historical and governmental documents as well as other literature.
3. EM researchers will consider how the context surrounding a topic of research may influence potential research designs (e.g., research question and goal, methods); and, make their design choices based on this assessment.

B. Research Question and Goal

1. EM researchers will clearly articulate one or more research questions that specify who or what will be studied (and toward what end) prior to determining other aspects of the research design. Given the dynamic nature of emergency management phenomena, researchers must also remain flexible. Thus, this standard should not be interpreted to suggest that questions will not evolve as the research progresses.
2. The articulated research question(s) must have been shaped by the researchers exploration of context discussed above.
3. The articulated research question(s) must be answerable through empirical work.
4. The research question(s) articulated by EM researchers must to be feasible given available resources (e.g., cost, time, accessibility issues).
5. EM researchers will also articulate a research goal (i.e., what the researcher hopes to accomplish as a result of the study) prior to determining other aspects of a study's research design. This standard should also not be interpreted to suggest that research goals will not evolve as the research progresses.

C. Development of a Literature Review

1. EM researchers will conduct a thorough review of the literature as part of their study.
2. The initial literature review must be directed by the research question(s). During the research process, research findings may lead a researcher to review additional literature (particularly related to exploratory studies).
3. The literature reviewed must include hazard and/or disaster literature as well as scholarship related to the topic from other disciplines.
 - a. The foundational literature for a study must be based on the findings of original, empirical research that has been published in scholarly, peer-reviewed journal articles, peer-reviewed books, and/or book chapters in peer-reviewed books.
 - b. A secondary type of literature that may be used includes completed and institutionally approved theses and dissertations, conference papers and proceedings, preliminary working papers from research centers, final grant project reports from think tanks

- and/or research centers, and government reports such as those from the Congressional Research Service or Governmental Accountability Office. This contextual material can be valuable in generating possible hypotheses, providing a rationale for topic ideas, or use as illustrations/examples but in and of themselves do not constitute what the discipline would normally recognize as a sufficient foundation for research. These sources are best used as contextual material (see Section I, A, 1-3 above) for a study rather than as a foundation for the researcher's approach to the study.
- c. A tertiary type of literature that may be used includes material from the popular press, media reports, professional magazines, white papers, anecdotal/opinion pieces, government documents (e.g., legislation, policy documents), and personal communications with subject matter experts. Material from these sources can be sensitizing and add dimension to a literature review but in and of themselves do not constitute what the discipline would normally recognize as a sufficient foundation for research. Online encyclopedias are not an acceptable source.
4. EM researchers will present the literature review in writing at one or more points in the process of conducting research.
 5. The written literature review will meet the following standards:
 - a. Present a synthesis of research findings from the empirical hazard and disaster literature as well as literature related to the topic from other disciplines;
 - b. If literature as discussed in Section II, A, 3a does not exist or is not comprehensive enough to serve as the foundation for the study, then an explanation of this shortcoming must be provided. Following this explanation, a synthesis of literature reviewed from secondary and tertiary sources must still be provided and the author(s) conceptual logic for the study should be articulated;
 - c. Include an introduction that makes an explicit link between the research question(s) and goal and the literature reviewed;
 - d. Be organized in a logical and well-structured manner such as historically or thematically;
 - e. Explain how the literature review informs the methods for the study; and,
 - f. Identify consensus and conflict and strengths and weaknesses in the literature reviewed (i.e., with respect to research questions, theory used to ground the research, variables explored, populations sampled, methodological approaches, methodological strengths and weaknesses, existing research gaps) . While the review of each of these issues does not need to be of equal length, all of the aforementioned issue areas must be addressed in the written literature review.

D. Development of a Research Design

1. Population and Sampling

- a. EM researchers will use sampling techniques that are generally accepted in the social sciences. Accepted techniques include the following:
 - i. Purposive, snowball, and quota techniques for *nonprobability* sampling and
 - ii. Simple random, systematic random, stratified random, and multistage cluster techniques for *probability* sampling.
- b. Before the commencement of data collection, EM researchers will consider the implications of the sampling technique(s) employed for the value of their sample relative to issues of generalizability of the research findings.
- c. EM researchers will employ their chosen sampling technique in keeping with reputable social science methodology literature.
- d. EM researchers will articulate a study's sampling technique and sample in writing at one or more points in the process of conducting research.
- e. The written statement related to sampling will meet the following standards:
 - i. Identify the social science methodology literature upon which they relied in implementing the study sampling technique(s);
 - ii. Articulate the process of developing the sample including a rationale for the sampling technique(s) used; and,
 - iii. Describe any sample that resulted from implementation of a sampling technique(s) with sufficient detail to allow the reader to evaluate the study's generalizability. In the case of quantitative research, discussion of the study population and sampling frame is expected.

E. Data Collection Approaches

1. It is appropriate to choose qualitative and/or quantitative data collection approaches that are generally accepted in the social sciences; *however*, the choice of approach(es) must be justifiable in light of both the research question and purpose and the existing literature.
2. Data collection approaches that are generally accepted in the social sciences include:
 - a. Compiling of existing statistics and other forms of secondary data for analysis using quantitative techniques and collection of original data through structured interviews or surveys (i.e., self or group administered face-to-face, mail, web, phone), experiments, and quasi-experiments for quantitative research; and,

- b. Compiling of primary/secondary data for the purposes of comparative/historical research or content analysis and collection of data through questionnaires (i.e., self or group administered face-to-face, mail, web, phone), intensive unstructured or semi-structured interviews, focus groups, and/or observation (i.e., complete observation, mixed participation/observation, complete participation) for qualitative techniques.
- c. Before the commencement of data collection, EM researchers will consider the implications of the data collection approach(es) they intend to employ for issues of study quality (e.g., reliability, validity, credibility, transferability) as well as the issues that may be addressed through data analysis, the type of discussion that would flow from the results and analysis, and the types of conclusions that may be drawn based on the research.
- d. EM researchers will employ their chosen data collection approach(es) in keeping with reputable social science research methodology literature.
- e. EM researchers will articulate the data collection approach(es) in writing at one or more points in the process of conducting research.
- f. The written articulation of data collection approach(es) will meet the following standards:
 - i. Identify the methodology literature upon which they relied in implementing the data collection approach(es);
 - ii. Clearly describe the decisions and reasoning that will guide/ guided the data collection process; and,
 - iii. Be sufficiently explicit to guide full or partial replication of the study.

F. Instruments and Measures

1. EM researchers must be able to defend any qualitative and/or quantitative data collection activities (e.g., open-ended question formats, observational approaches), instruments, and/or measures that they use from the standpoint of the existing literature.
2. EM researchers will consider how they will assess the quality (e.g., reliability, validity, credibility, transferability) of the data collection activities (e.g., open-ended question formats, observational approaches), instruments, and/or measures they plan to use prior to initiating data collection.
3. EM researchers will fully describe the data collection activities (e.g., open-ended question formats, observational approaches), instruments, and/or measures used in a study in writing at one or more points in the process of conducting research.

4. The written description of data collection activities, instruments, and/or measures will meet the following standards:
 - a. Present the data collection instruments and/or measures in a manner sufficient to allow full or partial replication of the study including a clear statement of any independent and dependent variables, concepts, or themes that will be/were explored/tested/discovered in the study.

G. Data Analysis

1. Qualitative and/or quantitative data analysis techniques that are accepted in the social sciences may be used; *however*, use of the technique(s) must be grounded in a rationale and justifiable based on the study design.
 - a. Data analysis techniques that are generally accepted in the social sciences include social network analysis, thematic mapping and spatial analysis using geographic information systems, statistical analysis, and mathematical modeling for quantitative research. EM researchers will employ their chosen quantitative technique(s) in keeping with reputable research methodology literature.
 - b. Acceptable qualitative analysis technique(s) are recognized as those that have been introduced, critiqued, refined, and repeatedly used within qualitative research in the social sciences. The use of a given qualitative technique must be done in keeping with reputable qualitative research methodology literature.
2. Before starting data collection, EM researchers will consider the implications of their planned data analysis technique(s) for assessing reliability (for quantitative studies) or rigor (for qualitative studies).
3. EM researchers will articulate the data analysis technique(s) used in a study in writing at one or more points in the process of conducting research.
4. The written description of data analysis technique(s) will meet the following standards:
 - a. Describe the technique(s) to be used/ used and provide a rationale for the use of the technique(s);
 - b. Describe how reliability/rigor will be/were assessed;
 - c. Clearly describe the decisions and reasoning that will guide/guided the data analysis process;
 - d. Identify the source(s) upon which they will rely/relied in implementing the data analysis technique(s); and,

- e. Be sufficiently explicit to guide full or partial replication of the study. Note: There is no expectation that this description would need to include the study data.

H. Ethics

1. The design and implementation of studies that involve human subjects must be guided by the basic ethical principles of respect for persons, beneficence, and justice and their applications as outlined in the Belmont Report (National Commission, 1978).
2. Prior to initiating data collection, EM researchers associated with higher education institutions (i.e., students and faculty) will go through their institution's Institutional Review Board (IRB) process and receive institutional approval for their study. EM researchers not associated with higher education institutions (e.g., practitioners and consultants) are strongly encouraged to submit their proposed study for review by an independent IRB organization and receive approval for their study before initiating data collection.
3. A variety of potential ethical issues may arise in the process of conducting research that involves human subjects. All EM researchers, regardless of institution, will consider the ethical implications of their study plans with respect to the following aspects of their study:
 - a. Proposed research topic, study site(s), data collection method(s), and/or procedure(s);
 - b. Proposed methods of participant recruitment, selection, and compensation/incentives;
 - c. Plans to address issues of informed consent and confidentiality; and,
 - d. Potential conflicts of interest involving the researcher or study participants.
4. EM researchers will be aware of the unique ethical issues associated with conducting some types of disaster research and carefully consider additional issues as appropriate to the situation. Some issues that may be necessary to consider when conducting post-disaster fieldwork include issues related to site access; the potential for the research and researcher to interfere with ongoing response and/or recovery tasks and activities; the potential pressure to assist with disaster-related tasks and activities leading to role confusion; dilemma related to direct or indirect association with ideological stances; political and economic conflicts of interest; issues relating to the use of sensitive information as data; unique issues associated with humanitarian research; and others.
5. EM researchers will consider additional issues specific to disaster survivors such as their heightened vulnerability, added issues related to confidentiality and privacy, the potential for increased socio-psychological consequences to survivors as a result of their participation, the potential for survivors to be overwhelmed by requests to participate in multiple studies, the setting of the research, and others.

III. Standards for Publishing Emergency Management Research

The Standards for Publishing Emergency Management Research should be met by emergency management (EM) researchers before submitting any document presenting the findings of research for publication.

A. *Publications and Outlets for Dissemination*

1. Publication can be understood to be any form of public dissemination of research findings in the form of a working paper, final report, article, book chapter, book, thesis, and dissertation on any medium such as website magazine, journal, newspaper, or book.
2. Scholarly, peer-reviewed journals are the preferred methods of disseminating the findings of original emergency management research. This preference is based primarily on two observations related to journals of this type: 1) They are relatively easy for faculty, students, and practitioners to find and access; and, 2) Articles that report the findings of original research go through a known review process to be published.

As of 2015, the preferred scholarly, peer-reviewed journals for the publication and dissemination of emergency management research findings include the following:

Disasters

Disaster Management Response

Disaster Prevention and Management

Environment and Behavior

Environmental Hazards

Environmental Management

International Journal of Disaster Resilience in the Built Environment

International Journal of Disaster Risk Reduction

International Journal of Disaster Risk Science

International Journal of Emergency Management

International Journal of Mass Emergencies and Disasters

Jamba: Journal of Disaster Risk Studies

Journal of Contingencies and Crisis Management

Journal of Disaster Research

Journal of Emergency Management

Journal of Hazardous Materials

Journal of Homeland Security and Emergency Management

Journal of Natural Disaster Science

Journal of Risk Research

Natural Hazards

Natural Hazards Review

Risk Analysis

Risk, Hazards, & Crisis in Public Policy

3. Manuscripts may not be submitted to more than one publication outlet at a time. Submission to more than one outlet or previous publication of a manuscript will often disqualify a manuscript for publication and may lead to copyright issues.
4. Books and monographs that provide extended, detailed discussion of a study and related findings would be a good second choice for the publication and dissemination of emergency management research provided that the book/monograph has been peer-reviewed and published with a research-oriented publisher.
5. Researchers often seek an intermediate point between data collection and analysis and publication to share initial findings and receive feedback. Toward this end, presentations at a variety of conferences might be appropriate.
6. Whenever possible, emergency management researchers ought to disseminate research findings in forms, forums, and formats that are both accessible to and frequently accessed by emergency management professionals. Relevant examples of practitioner-oriented conferences include those sponsored by states/state emergency management offices, state emergency management associations, voluntary organizations active in disaster at the national, state, and/or local level, professional organizations (e.g., International Association of Emergency Managers, International Emergency Management Society, Association of Contingency Planners); and conferences sponsored by professional magazines (e.g., Disaster Recovery Journal Conference), and others (e.g., East/West Contingency Planning and Management Conference). Relevant examples of practitioner-oriented publications that meet these criteria include Disaster Recovery Journal, Emergency Management Magazine, IAEM Bulletin, and Natural Hazards Observer.
7. Emergency management researchers should also take advantage of all opportunities to share the findings of their research that have policy implications with representatives of local, state, and federal agencies/departments and legislative bodies.

B. General Standards

1. Publications will meet the Standards for Conducting Emergency Management Research outlined in Section II. Thus, they will include a statement of context, research question, research goal, and literature review that meets the standards as well as the use of accepted data collection methods and data analysis techniques.
2. Emergency management researchers are responsible both as scientists and contributors to write to the audience and author guidelines of the outlet to which they submit their work. In seeking to submit a piece that demonstrates a goodness-of-fit with the intended outlet, emergency management researchers may be required to abbreviate the presentation of how they conducted their study (i.e., statement of context, research question and purpose, literature review, and methods) and the study's findings (i.e., results, discussion/conclusion). Nevertheless, each researcher is responsible for ensuring that abbreviation does not result in failure to demonstrate the standards articulated in this document.

3. An important dimension of ethics includes the appropriate use of the work and/or research of others. Misuse is typically referred to as plagiarism. Simply stated, plagiarism is taking the work of another and presenting it as your own. Emergency management researchers are responsible for educating themselves about the types and degrees of plagiarism and how it can be avoided and ensuring that their published work is free of any type or degree of plagiarism.
4. Any published emergency management research must provide a complete list of references. References need to be prepared in the format required by the outlet to which they submit their work or the institution with which they are associated (e.g., university/college, research center, think tank). Where a format is not required, both the reference list and in-text citations will be in the current citation format of the *American Psychological Association* (APA).
5. Additionally, emergency management publications will meet the Standards for Publishing Emergency Management Research in the following areas: general standards, standards for minimal disclosure of methods (i.e., population and sampling, data collection, and data analysis), standards for the presentation of results and discussion/conclusions.

C. *Standards for Minimal Disclosure of Methods*

1. All emergency management publications will disclose who conducted the study (i.e., the names of the individuals, consulting group, research group, and/or think tank) and who, or what entity, sponsored and/or funded the study.
2. While noting that many journals often have restrictive word limits, emergency management publications that report the findings of a qualitative study should, to the extent possible, disclose the following:
 - a. the study's design, including a general description of study participants/content;
 - b. how participants/content were selected (i.e., sampling technique, sampling process, and underlying rationale);
 - c. time frame in which data were collected and any instruments used to collect data (e.g., interview questions/guide, coding schema);
 - d. how standards for conducting ethical research were met;
 - e. data analysis techniques used (including a rationale for the techniques and reference to the author and/or texts that guided the use of the techniques); and,
 - f. limitations that characterize the research design they selected and implications for the results.

3. While noting that many journals often have restrictive word limits, emergency management publications that report the findings of a quantitative study should, to the extent possible, disclose the following:
 - a. “the exact wording and presentation of questions and responses whose results are reported”^(AAPOR, 2010);
 - b. “a definition of the population under study, its geographic location, and a description of the sampling frame used to identify this population. If the sampling frame was provided by a third party, the supplier shall be named. If no frame or list was utilized, this shall be indicated”^(AAPOR, 2010) (Note: Where necessary to honor confidentiality/anonymity of research participants, it is permissible to substitute a pseudonym for geographic location.);
 - c. “a description of the sample design, giving a clear indication of the method by which the respondents were selected (or self-selected) and recruited, along with any quotas or additional sample selection criteria applied within the survey instrument or post-fielding. The description of the sampling frame and sample design should include sufficient detail to determine whether the respondents were selected using probability or non-probability methods”^(AAPOR, 2010);
 - d. “sample sizes and a discussion of the precision of the findings, including estimates of sampling error for probability samples and a description of the variables used in any weighting or estimating procedures. The discussion of the precision of the findings should state whether or not the reported margins of sampling error or statistical analyses have been adjusted for the design effect due to clustering and weighting, if any”^(AAPOR, 2010);
 - e. “which results are based on parts of the sample, rather than on the total sample, and the size of such parts”^(AAPOR, 2010);
 - f. “method and dates of data collection”^(AAPOR, 2010);
 - g. method(s) of data analysis; and,
 - h. limitations that characterize the research design they selected and implications for the results.

D. Presentation of Results

1. All results reported must be consistent with the study’s research design (i.e., sampling techniques, data collection techniques, and data analysis techniques).
2. Presentation of the study’s results must be accurate and truthful.

3. The data collected for the study must be comprehensively reported in keeping with standards in the field for the research design used.
4. Evidence in the form of data must be provided as support for any results presented.
5. The presentation of the results must be presented as a descriptive review of the results—free of any interpretation of their implications.

E. Presentation of Discussion and Conclusions

1. EM researchers will ensure that the following are discussed:
 - a. the implications of study results with respect to the study's research question and goal;
 - b. the fit of the study's results with the literature reviewed in the publication (e.g., how the research findings support, add to, or contradict the pre-existing literature); and,
 - c. broader theoretical and/or applied implications of the study.
2. The researcher will situate any discussion of study results within the context described in the publication's introductory material.
3. Any discussion must be consistent with the presented research design and results.
4. Publications must provide suggestions for future research related to the study's topic.
5. Any conclusions drawn must be consistent with the research design, methods, and results presented in the publication.

References

American Association for Public Opinion Research (AAPOR). (2010). Code of professional ethics and practice. Retrieved September 28, 2012 from http://www.aaport.org/Disclosure_Standards1.htm

National Commission for the Protection of Human Subjects of Behavioral Research. (1978). The Belmont Report: Ethical principles and guidelines for the protection of human subjects of research. Washington DC: Department of Health, Education, and Welfare. Retrieved September 28, 2012 from http://videocast.nih.gov/pdf/ohrp_appendix_belmont_report_vol_2.pdf