

博士学位論文審査要旨

2011年5月21日

論文題目：The Sociology of People With Special Needs in Times of Disaster(PSND):
Assessing the Special Needs of PSND Using Person-in-Environment Model of
Vulnerability
(災害時要援護者に関する社会学的研究：脆弱性の「人-環境相互作用モデル」
に基づく要援護度評価の実証研究)

学位申請者： Nicolle Comafay

審査委員：

主査： 社会学研究科 教授 立木 茂雄

副査： 社会学研究科 教授 森川 眞規雄

副査： 前京都大学防災研究所 客員教授 Richard Eisner

要旨：

本研究は、「人-環境相互作用」モデルに立脚して、災害時要援護者の災害脆弱性をモデル化し、一行政区においてモデルを実装化するに至るまでを論じた実践的研究である。

本論は5章構成となっている。第1章では、災害時要援護者のおかれた状況に関する解説を踏まえて、関係性概念として災害脆弱性を捉え、これを減じるアクション・リサーチという本論の目的と意義が示されている。

第2章では、災害や災害脆弱性といった基本概念が災害社会学的研究の中でどのように概念化されてきたのかを整理・展望し、「人-環境相互作用」モデルを定式化している。

第3章では、2007年能登半島地震災害時の災害時要援護者への対応を検討している。発災から10時間、100時間、100時間以降のそれぞれの時点において、要援護者の災害脆弱性を減じるための資源提供元が、住民組織、介護保険事業者、行政と移行していった様を明らかにした。

第4章では、兵庫県神戸市兵庫区で登録されている精神・身体障害者(全4,411名)を対象とし、想定ハザード(津波・土砂災害・洪水危険域)内に居住する914名について実査を行い(有効回答612名)、個々の要援護者の置かれた状況を「人-環境相互作用」モデルにより地理情報システム(GIS)上で実装化した。またこれをもとに地域全体の要援護者ニーズの総量を濃淡地図として視覚的に表現することにも成功している。

第5章は本研究の成果が簡潔にまとめられている。災害脆弱性を人口10万人規模の行政区において理論モデルに基づきGIS上に実装するという本研究の意義が提示されている。

今後の課題としては、発災直後の避難移動期だけに限定して災害脆弱性が検討され、続く避難所生活やその後の復旧・復興期は取りあげられていないことがあげられるが、一行政区全体でモデルを実装化したことで、現段階で十分に理論的・実践的価値を有するものと判断した。よって、本論文は、博士(社会学)(同志社大学)の学位を授与するにふさわしいものであると認める。

総合試験結果の要旨

2011年5月21日

論文題目：The Sociology of People With Special Needs in Times of Disaster(PSND):
Assessing the Special Needs of PSND Using Person-in-Environment Model of
Vulnerability
(災害時要援護者に関する社会学的研究：脆弱性の「人 - 環境相互作用モデル」
に基づく要援護度評価の実証研究)

学位申請者：Nicolle Comafay

審査委員：

主査：社会学研究科 教授 立木 茂雄

副査：社会学研究科 教授 森川 眞規雄

副査：前京都大学防災研究所 客員教授 Richard Eisner

要 旨：

2011年5月21日(土) 臨光館会議室において午前10時30分より2時間の申請論文に関する公聴会を開催し、本論の趣旨、目的、内容および特徴について公開講演を行い、また午後1時30分から90分間の口頭試問を行った。申請者は公聴会参加者からの質問に対しても、また上記3名の審査委員の質疑に対しても的確に応答し、関連の知識についても豊かな見識を有していることが証明された。さらに論文に関する外国語能力(日本語)についても十分な力量があることが明らかになった。よって、総合試験の結果は合格であると認める。

-

博士學位論文要旨

論文題目： The Sociology of People With Special Needs in Times of Disaster (PSND):
Assessing the Special Needs of PSND Using Person-in-Environment Model of
Vulnerability
(災害時要援護者に関する社会学的研究：脆弱性の「人 - 環境相互作用モデル」
に基づく要援護度評価の実証研究)

氏名： Nicolle Comafay

要旨：

This study stems from the notion of disaster as a social construct establishing that vulnerability is a principal component of risk. Furthermore it advocates the idea that assessing vulnerability does not only entail categorizing people into groups, but can be better assessed using a holistic approach. This means incorporating person and environment factors that contribute to the individual's vulnerability.

To this end, the objective of this dissertation was to examine the best approach to assessing the vulnerability of people with special needs in time of disaster (PSND) to identify their special needs. This can help in identifying the necessary assistance and services to provide for PSND throughout the disaster process. The motivation guiding this study was the importance of examining the best way to provide continuous assistance for PSND to meet their needs. This is crucial to help them cope with the difficulties of disaster, thereby minimizing their vulnerability.

This dissertation, composed of 5 chapters, attempted to contribute to the general understanding of the assessment of social vulnerability to disaster. In chapter 1, the background, motivation and objective of the dissertation are introduced. The structure of the dissertation is also explained.

Chapter 2 provided a literature review of the different approaches and implementation models to assess social vulnerability to disaster. This was the foundation for developing an implementation model adopted in this dissertation to effectively assess individual vulnerability to disaster.

Based on the approaches to assessing vulnerability and the implementation models discussed in this chapter, a modified Person-in-Environment (PIE) model of assessing vulnerability was developed. According to this model, vulnerability V is a function of hazard H and the Interaction of Person P and Environment E at the time phase of the disaster process t or $V_t = f_t(H \times f_t(P \times E))$. The time phases adopted were: (1) $t=0$ or pre-disaster condition; (2) $t=1$ or first 10 hours after hazard impact; (3) $t=2$ or from 10 to 100 hours; and, (4) $t=3$ or from 100 to 1000 hours. Incorporating the time phase component of a disaster process modified the PIE model and provided a more thorough situational approach to assessing vulnerability.

To understand how vulnerability changes during a disaster event, Chapter 3 examined the service delivery of three organizations to PSND at each time phase, 10, 100, and 1000 hours after the 2007 Noto Hanto earthquake earthquake. Using the Disaster Research Center (DRC) typology, the same chapter also analyzed how the different organizations responding to the needs of the PSND adapt to the increased demands brought about by the disaster.

Findings revealed that the community organizations were the first to respond to the most urgent needs of PSND during the first 10 hours, such as assisting in emergency evacuation. However, sustained service delivery from the formal organizations, namely, the public health department and the care manager organization, increased as those coming from the community organizations decreased after 100 hours.

Chapter 4 was an implementation study that attempted to measure the vulnerability of PSND in Hyogo Ward in Kobe City using the PIE model. Based on the local government registry of 4,411 persons with disabilities, 972 persons were identified as potentially exposed to multiple hazards. Among those exposed to hazard, 67% or 612 persons agreed to participate in a structured interview survey. The PIE profiles gathered were the basis for calculating their vulnerability and identifying the persons with the highest degree of vulnerability among the population.

Using the dual scaling method, 5 variables were derived from the profiles gathered including demographic, physical disability, functional needs, social isolation, and housing condition. The results were quantified and scores from the 5 variables were combined to calculate the overall degree of special needs of the respondents. From this a multi-hazard mapping of social vulnerability was conducted to visualize the location and distribution of PSND with the highest degree of vulnerability using geographic information system (GIS). This can be used by disaster managers and different organization providing assistance to people with disability in creating individualized evacuation and sheltering plan for PSND in Hyogo ward. Weighted kernel density mapping of the distribution of PSND within the community was also conducted. This map can be used to sensitize individuals in the community who can potentially provide assistance, towards reducing the vulnerability of others.

Finally, in Chapter 5, the key findings in the previous chapters are summarized and the conclusion is drawn. This study clarified that individual vulnerability is better assessed with the context of disaster time phase. It also defined and emphasized the role of communities as first responders when a disaster strikes. Furthermore, by using a contextual or proactive approach, the PIE model can easily be implemented by local communities to plan their disaster response for PSND. Local community disaster planners can also include variables applicable to their socio-political context. Factors that measure “disaster schema” and how it affects vulnerability is one recommendation for further study which was not implemented in the current study due to limitation of the data.