External Validity of the Causal Factors on Effective Personnel Support by Local Governments during Emergency Response and Relief after the Great East Japan Earthquake  
Yuichi HONJO 1, Shigeo TATSUKI 2  
1: Kobe Institute of Urban Research, 2: Department of Sociology, Doshisha University

Abstract

The Great East Japan Earthquake formed a hypothesis to improve the effectiveness of personnel support by local governments. The purpose of this study is to examine the validity of the model based on this hypothesis, with the following procedures: 1. Conduct a survey through questionnaires on cities and towns in Iwate and Miyagi Prefectures which have received personnel support; and 2. Examine a model that looks at the degree of effectiveness of personnel support by local governments which is mainly determined by the following two capacities by multiple regression analysis: i) Capacity to receive outside support; ii) Capacity to provide support.

Background & Objectives

1. Study background
(1) At the time of the Great East Japan Earthquake, contrary to the expanding disaster response activities following catastrophic damage, the administrative function dropped dramatically, resulting in an unprecedented shortage of manpower. External support was therefore vital to an extent greater than at the time of the Great Hanshin-Awaji Earthquake.
(2) Personnel support activities were implemented by way of the dispatching program of various government personnel between affected and non-affected municipalities from the initial stage. For instance, in fiscal year 2014, the City of Kōbe dispatched a Public Health Nurse to the Life Recovery support department of the City of Natori, Miyagi Prefecture. The nurse who usually takes on the responsibility of conducting case management was sent as a resource to expand relevant services for the city. This, on the other hand was considered as an emergent assignment from the point of view of the City of Natori.
(3) In previous studies of quantitative investigation concerning personnel support from the initial stage to the emergency response stage following the Great East Japan Earthquake, no questionnaire surveys appear to have been conducted for the purpose of grasping the actual situation regarding personnel support, which covered all municipal governments which received such support.

2. Study objectives
(1) To carry out cause analysis of factors concerning effective personnel support from the supported municipal governments’ perspective.
(2) To verify, in particular, the validity of the models in which the capacity to provide and receive support is supposed to influence the overall impression of rating, based on the questionnaire data conducted for the supported municipalities.

Materials & Methods

1. Survey framework preparation
Capacity to provide support
- Information processing
- Resource management
- Preparation of an operation manual and training
- Coordination with other support groups
- Organization of a personnel dispatch system
- Creation of a support framework on a national level
- Construction of trustworthy relationships in affected areas

Overall impression of rating regarding personnel support
- Establishment of information processing
- Development of emergency program
- Preparation of an environment for receiving support
- Construction of trustworthy relationships in affected areas

Capacity to receive support
- Establishment of information processing prior to a disaster
- Organization of a support receiving system
- Preparation of an environment for receiving support

2. Investigation method: Questionnaire survey
(1) 27 disaster-stricken municipalities designated by the dispatching personnel program of the Ministry of Internal Affairs and Communications, were selected for the survey.
(2) The survey was carried out by distributing and collecting questionnaires by mail.
(3) The survey period began on January 21, 2013 when the questionnaires began to be distributed and closed on May 15, 2013 when collection was completed.
(4) The collection rate was 70.4% (19 municipalities).

3. Procedures
(1) Create 5 point Likert scales for the overall impression of personnel support and the capacity to provide and receive support respectively using factor analysis.
(2) Using multi-regression analysis, verify the relationship between the overall impression of rating as the dependent variable, the capacity to provide and receive support, and all damage to areas and to the administrative functions of their governments as the independent variable.

Results

1. Scaling of factors to measure each item by factor analysis
(1) Dependent Variable: Overall impression of rating regarding personnel support
(2) Independent Variable 1: Capacity of providing support
(3) Independent Variable 2: Capacity of receiving support

2. Factors impacting on the overall impression of rating regarding personnel support by regression analysis

Conclusions

1. In this study, verification was carried out using the data obtained from the questionnaire survey conducted for disaster-stricken municipalities which received support. As a result, it revealed that the capacity to provide and receive support, and the ratio of dead and missing personnel to the total number of personnel had a significant impact on the personnel support overall impression of rating.
2. The study showed that this model had an explanatory power of 74.1% for the personnel support overall impression of rating.
3. As the validity of this model has been verified, the statistical regularity that it is necessary to improve both the capacity to provide and to receive support, in order to realize effective personnel support, has further increased.