THE CAUSAL FACTORS ON EFFECTIVE PERSONNEL SUPPORT BY LOCAL GOVERNMENTS DURING EMERGENCY RESPONSE AND RELIEF after the Great East Japan Earthquake

September, 2014

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Outline

1. Introduction
   - Study background
   - Preceding studies
   - Study objectives
   - Research framework

2. Method

3. Results

4. Discussion

5. Conclusion
1. Introduction

- Study background
- Preceding studies
- Study objectives
- Research framework
Study background

- The Great East Japan Earthquake placed high demands on disaster response activities, whose administrative functions, however, dropped dramatically, resulting in shortage of manpower.
- External support was therefore vital.
- Personnel support activities aided by non-affected local government personnel.
Preceding studies

- Preceding studies have focused mainly on the activities of aid giving municipalities.
- No study has been conducted to investigate the effectiveness of inter-governmental aid from the viewpoint of both aid-giving and aid-receiving municipalities.
Study objectives

- To carry out causal model analysis of factors concerning effective personnel support from the viewpoints of the aid-receiving and aid-giving municipalities.
- To test the validity of the causal model in which the capacity to give and to receive support was postulated to influence the aid effectiveness rating.
Research framework

- Organizational responses of aid-receiving municipalities were classified as either “the expanding” or “emergent” according to DRC typology (Quarantelli, Dynes & Haas, 1966).

![Figure 1: Aid-receiving municipality](attachment:figure1.png)
Organizational responses of aid-giving municipalities were classified as either “the established” or “the extending” according to DRC typology (Quarantelli, Dynes & Haas, 1966).

Figure 2. Aid-giving municipality
2. Method
The 2013 questionnaire survey to aid-receiving municipalities

- 19 responses received from 27 questionnaire surveys sent to Miyagi and Iwate municipalities.

Content of the questionnaire survey

- Aid-giving capacity of non-affected local government personnel
- Aid-receiving capacity of their own municipalities
- The affected municipality employee casualties
The 2011 questionnaire survey to dispatched Kobe City employees

- 1254 responses received from 1796 questionnaire surveys sent to Kobe city employees.

- Content of the questionnaire survey
  - Aid-giving capacity of their own work
  - Aid-receiving capacity of the affected municipalities
  - Types of work that they were engaged in
Procedures

- Scaling of factors to measure each item
- An initial exploratory canonical correlation analysis of two sets of variables, one from aid-giving and the other from affected-aid-receiving municipalities
- The final structural equation modeling of this two factor model on the effectiveness of the support as viewed from both aid-giving and aid receiving municipalities
3. Results
Scaled variables from the 2011 questionnaire to dispatched Kobe City employees

- An overall rating impression (6 items)
- 8 aid-giving capacity factors (information/intelligence, resource management, manual preparedness, collaboration among supporting organizations, team work, logistics, aid framework, trust-based relationships)
- 3 aid-receiving capacity factors (information/intelligence, coordination, lodging/food/amenities)
Scaled variables from the 2013 questionnaire to aid-receiving municipalities

- An overall rating impression (6 items)
- An aid-giving capacity factor (8 items)
- An aid-receiving capacity factor (13 items)
The canonical correlation analysis

Table 2. the canonical correlation

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<table>
<thead>
<tr>
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<tr>
<td>1</td>
<td>.699</td>
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<td>2</td>
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Table 3. Wilk’s λ

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<th>Wilk’s λ</th>
<th>Chi-SQ</th>
<th>DF</th>
<th>Sig.</th>
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<td>2</td>
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The canonical correlation analysis

Table 4. Standardized Canonical Coefficients for Set-1

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<tr>
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<tbody>
<tr>
<td>Kobe city self-assessment of their own info</td>
<td>-0.03</td>
<td>0.586</td>
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<td>Kobe city self-assessment of resource</td>
<td>0.091</td>
<td>0.374</td>
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<td>Kobe city self-assessment of manual</td>
<td>-0.039</td>
<td>0.152</td>
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<td>Kobe city self-assessment of collaboration</td>
<td>0.07</td>
<td>-0.123</td>
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<tr>
<td>Kobe city self-assessment of teamwork</td>
<td>0.033</td>
<td>0.213</td>
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<tr>
<td>Kobe city self-assessment of logistics</td>
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<td>-0.047</td>
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<td>Kobe city self-assessment of clarity of</td>
<td>-0.068</td>
<td>-0.281</td>
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<tr>
<td>Kobe city self-assessment of trust</td>
<td>0.096</td>
<td>0.572</td>
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<tr>
<td>Kobe city assessment of aid-receiving</td>
<td>0.004</td>
<td>-0.046</td>
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<td>Kobe city assessment of coordination</td>
<td>0.016</td>
<td>0.094</td>
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<td>Kobe city assessment of lodging/food/amenity</td>
<td>-0.007</td>
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<td>extending type of aid activities</td>
<td>0.921</td>
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Table 5. Standardizes Canonical Coefficient for Set-2

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<td>affected municipality assessment of</td>
<td>0.831</td>
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<td>personnel aid-giving</td>
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<td>affected municipality assessment of aid</td>
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<td>receiving capacities</td>
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<td>the staff member casualty</td>
<td>-0.393</td>
<td>0.886</td>
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Figure 5. Basic Model

- Kobe city's information / intelligence
- Kobe city's manual preparedness
- Kobe city's logistics
- Clarity of aid framework
- Lodging / food / amenity support from the aid-receiving side
- Kobe city's resource management
- Collaboration among support organizations
- Kobe city's teamwork
- Kobe city's trust
- Aid-receiving municipality's information / intelligence
- Aid-receiving municipality's coordination

Established type of aid activities factor

Extending type of aid activities

Overall impression of rating

The staff member casualty

Overall impression of rating (the aid-giving side)

Overall impression of rating (the aid-receiving side)

Affected municipality assessment of personnel aid-giving

Affected municipality assessment of their own aid-receiving capacities
Figure 6. Model of the effectiveness of the aid

CFI = 0.904, RMSEA = 0.095
4. Discussion
Evaluation criteria for personnel support differed depending on established or extending type aid activities

- The established type ⇒ The aid-giver to independently carry out their work.

- The extending type ⇒ Likely to depend more on the receiving conditions of the aid-receiving party.
Practice Implication

- The difference in the evaluation criteria for personnel support between established type and extending type aid activities.
5. Conclusion

- The causal model in which the capacity to give and to receive support is postulated to influence the aid effectiveness rating was verified.
- Evaluation criteria for personnel support differ depending on established type and extending type aid activities.
- We should study carefully how best to provide effective personnel support, not in a blindly uniform way without paying attention to the difference in the types of disaster response activity.
Two remaining tasks ahead

- Study and development of the aid effectiveness rating concerning emergent type activities.
- One error variance of latent variable concerning overall rating became negative. To solve by increasing the number of subject municipalities.