

Long-term Recovery from the 1995 Kobe Earthquake:

The 1999, 2001, 2003 and 2005 Cross-sectional and Longitudinal
Life Recovery Social Survey Findings

The 9th IIASA-DPRI Forum on
Integrated Disaster Risk Management

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Table of Contents

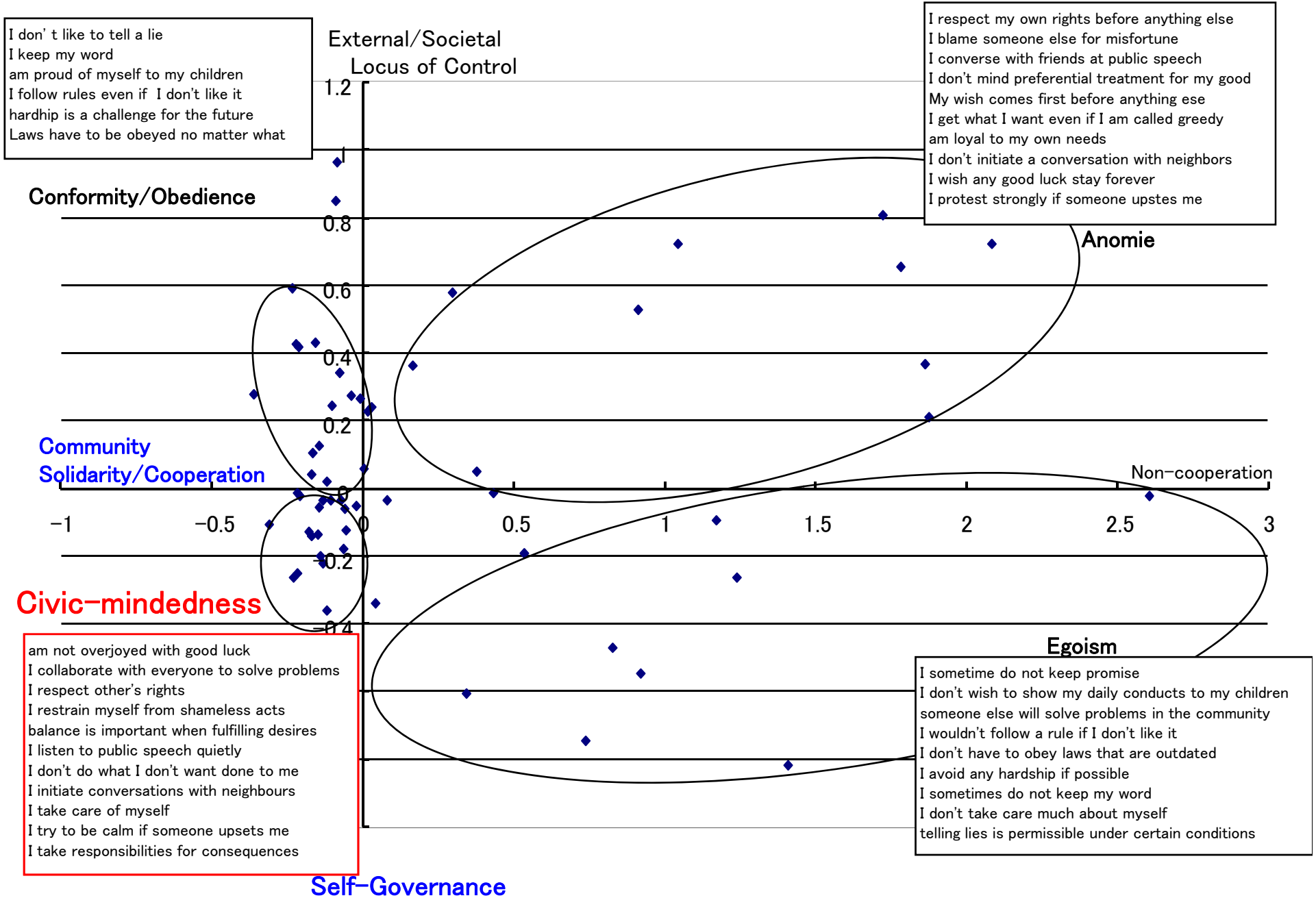
- The 1999 Hyogo Life Recovery Survey
- The 1999 Grass-root Assessment Workshop on Life Recovery (5 years after EQ)
- The 2001 Hyogo Life Recovery Survey
- The 2003 & 2005 Hyogo Life Recovery Surveys
- The 2001, 2003, & 2005 Hyogo Life Recovery Panel Survey
- The 2003/2004 Grass-root Assessment Workshop on Life Recovery(10 years after EQ)

The 1999 Hyogo Life Recovery Survey

The first attempt to construct
standardized measures of **life
recovery**, physical and mental stress,
civic-mindedness and family relations

Life Recovery Scale

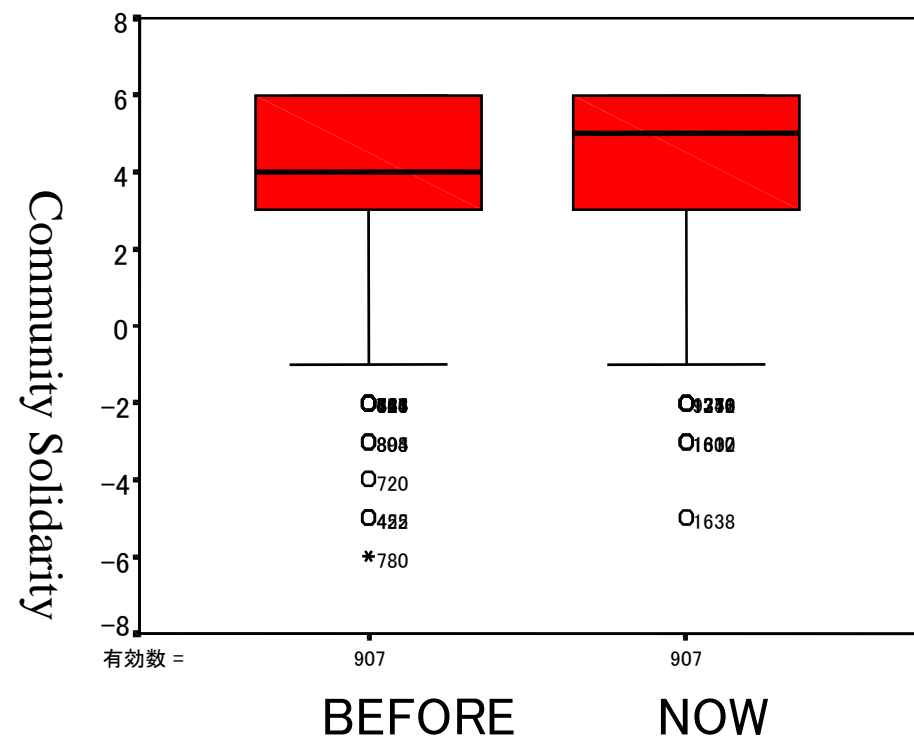
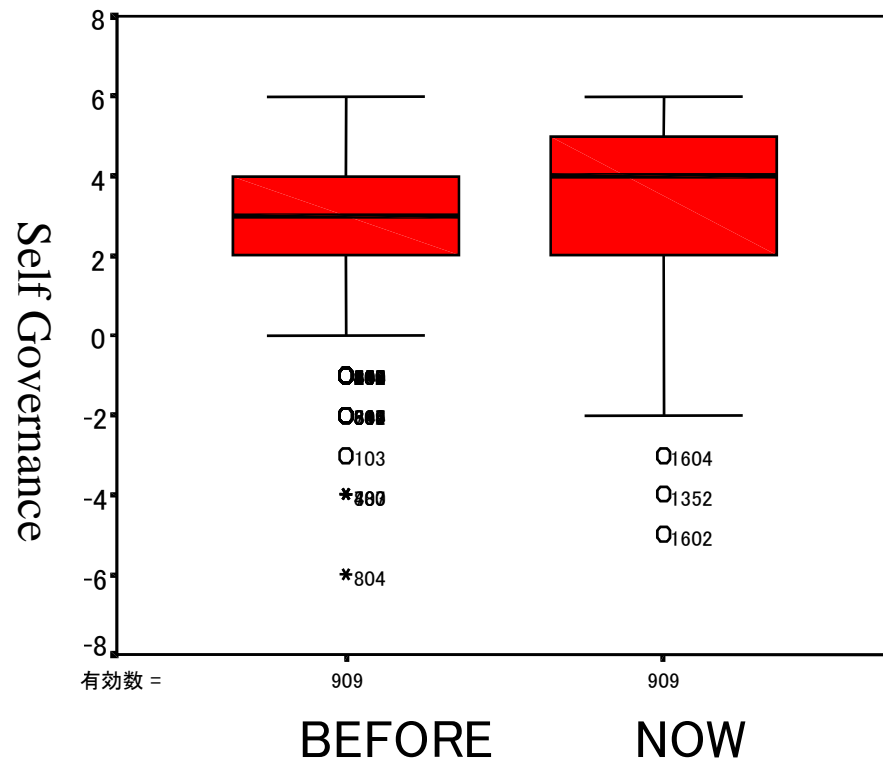
- Life recovery scale is a 14 item 5-point Likert scale.
- 7 items ask subjective evaluations of life fulfillment/readjustment compared with pre-earthquake days in such areas as
 - daily living, work, the meaning of life, social life, enjoyment, hope, and liveliness of everyday life.
- 6 life satisfaction items inquire about satisfaction in
 - everyday life, health, human relationships, household finance, family life, and work.
- 1 item was used to ask about the prospects in the respondent's life one year from now.



Dual Scaling analysis of the 1999 study civic-mindedness scale items

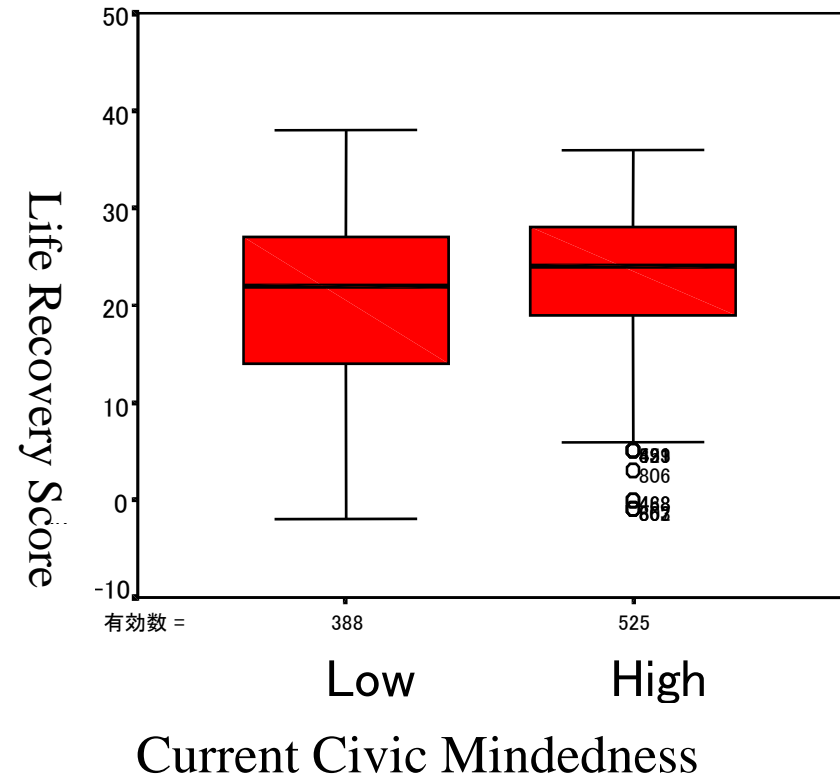
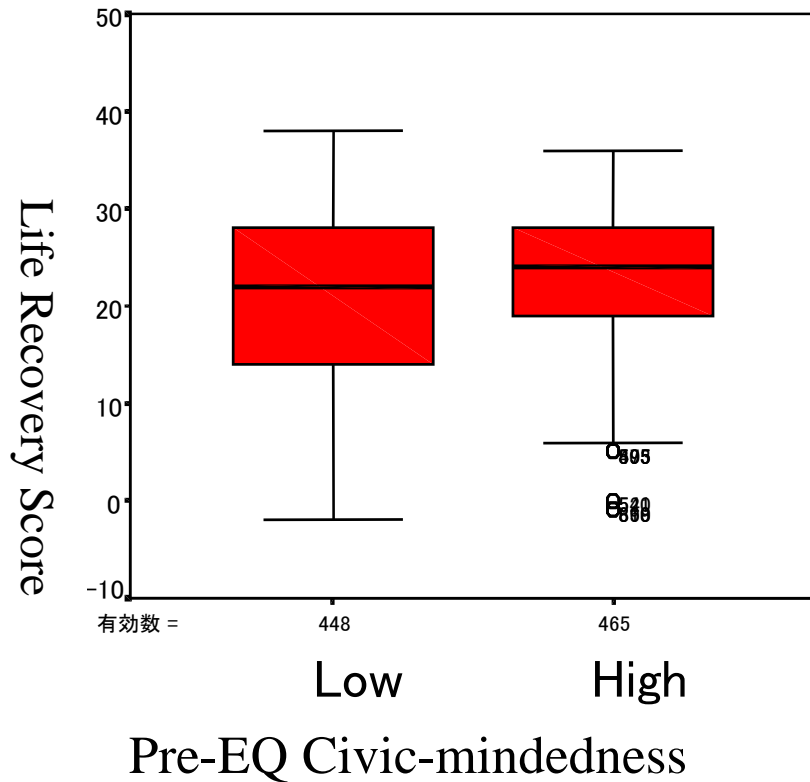
Changes in Civic-mindedness Pre- & Post-Earthquake

Hyogo Life Recovery Survey
(N=993, March, 1999)



Level of Civic-mindedness by Degree of Recovery

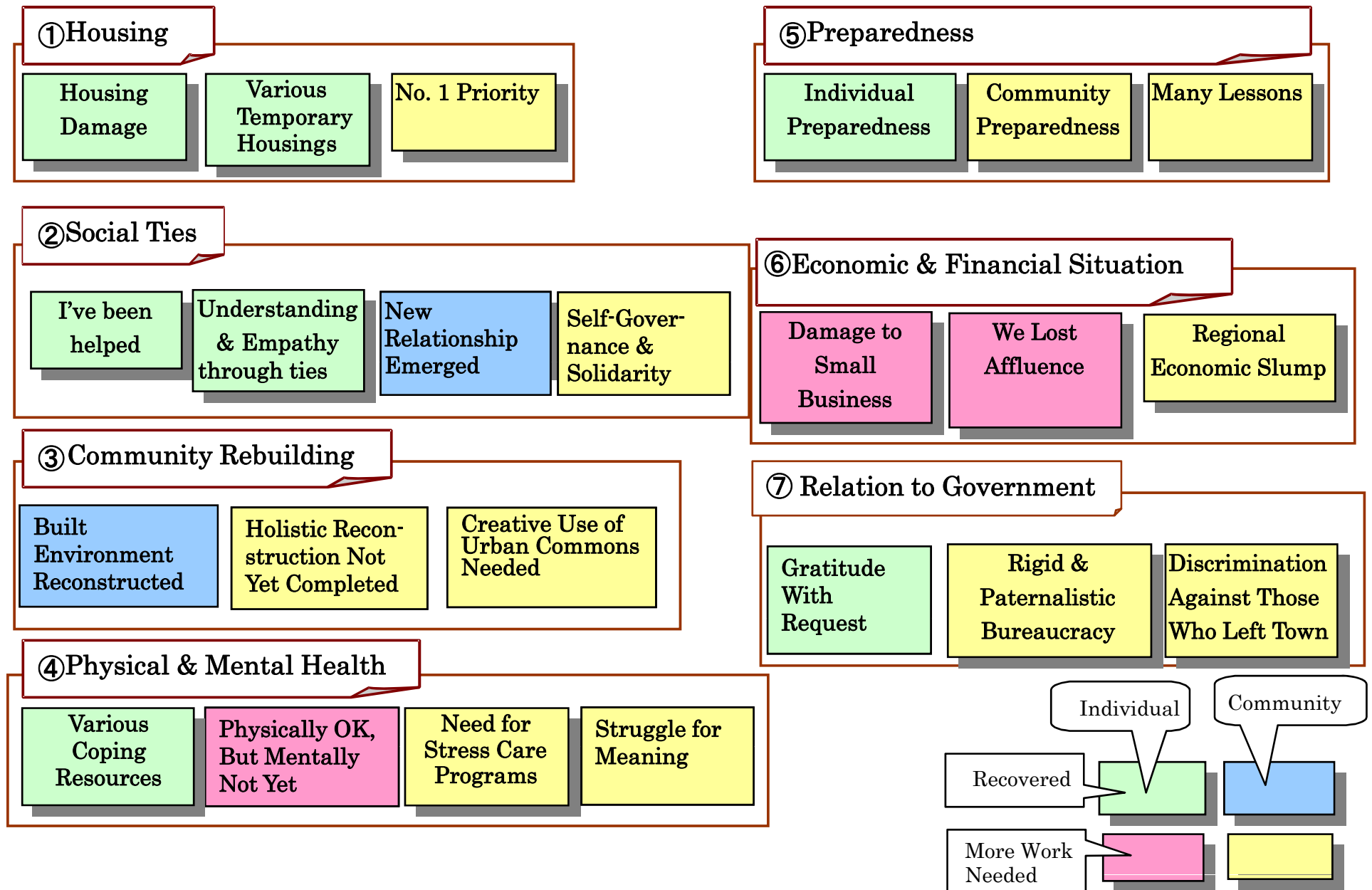
Hyogo Life Recovery Survey
(N=993, March, 1999)





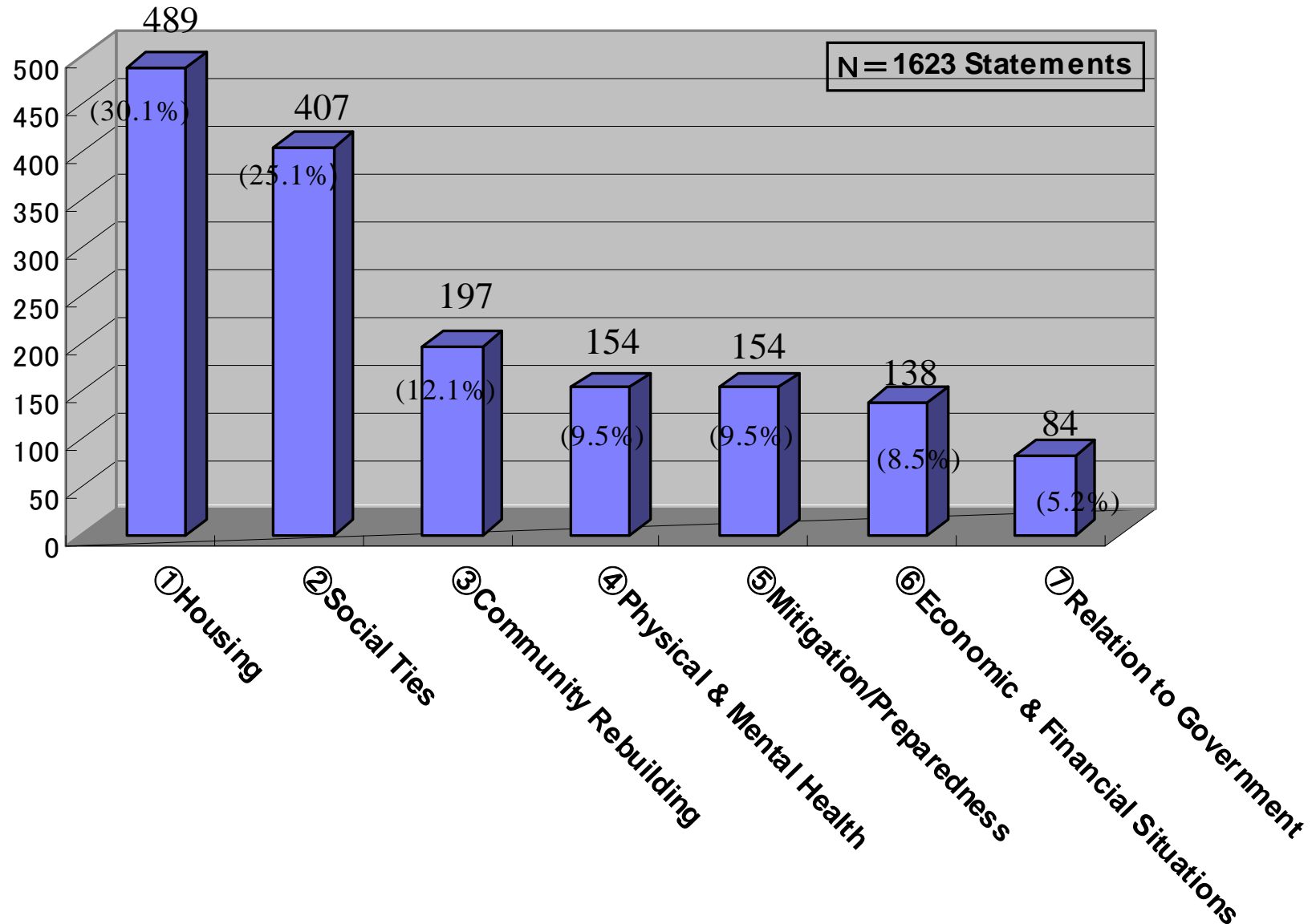
The 1999 Grass-root Assessment Workshops on Life Recovery (5 years after EQ)





Seven Critical Element Model (SCEM) for life recovery
(Jul. to Aug., 1999)

Number of Opinion Cards for Each Life Recovery Element

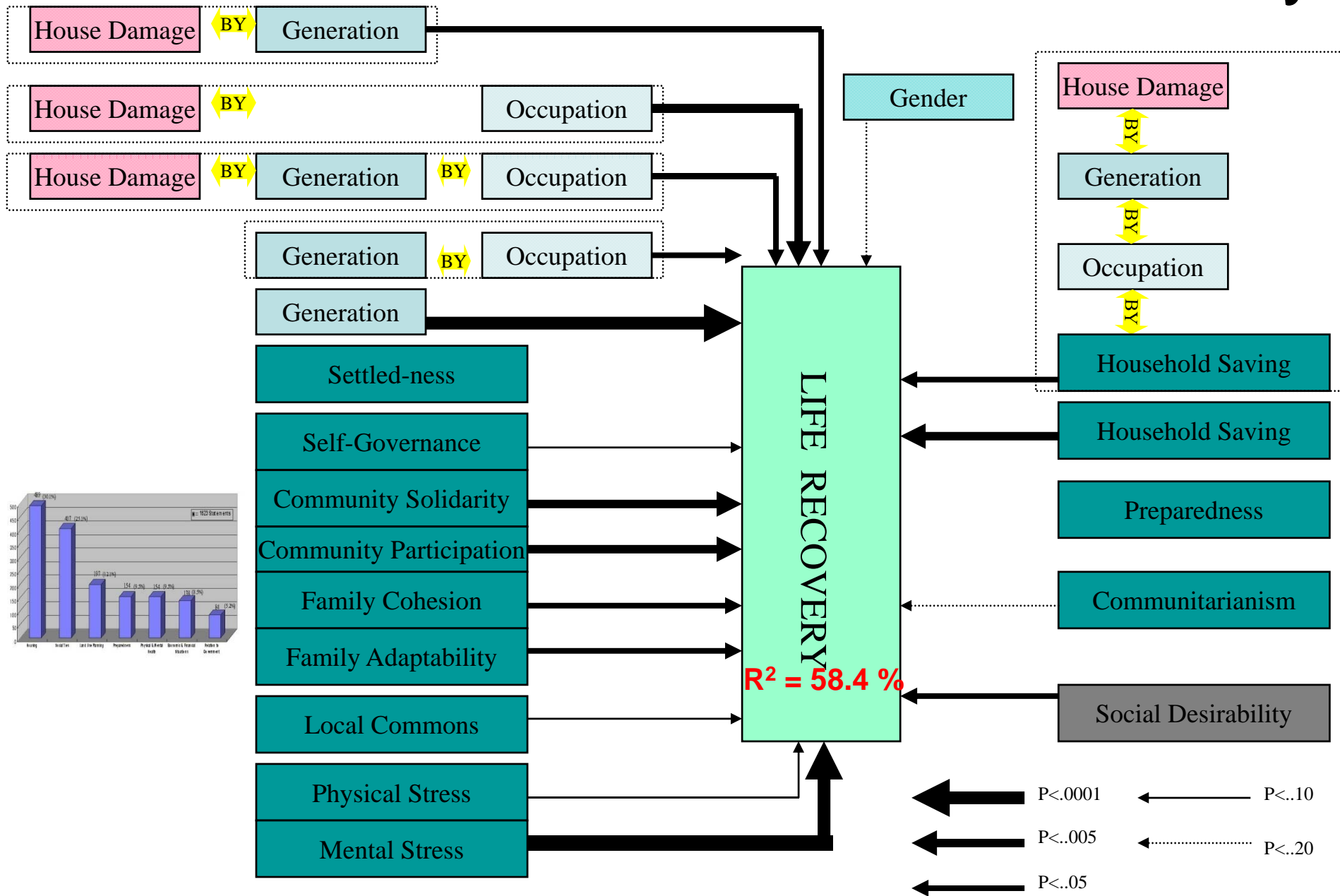


The 2001 Hyogo Life Recovery Survey

The 2001 study aimed to develop valid and reliable scales for the Seven Critical Element Model (SCEM) of Life Recovery.

The 2001 study conducted GLM analyses to examine which variables or what combinations of variables best predicted the level of life recovery.

General Linear Model of Life Recovery

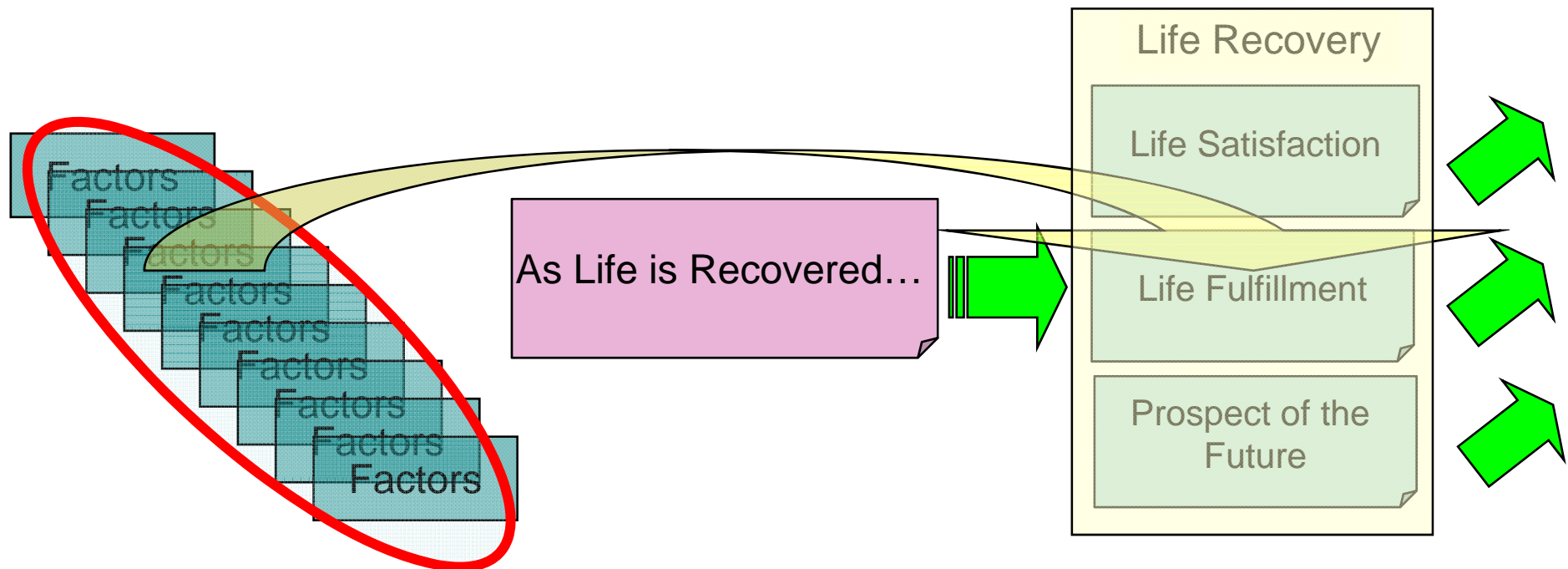


The 2003 & 2005 Hyogo Life Recovery Survey:

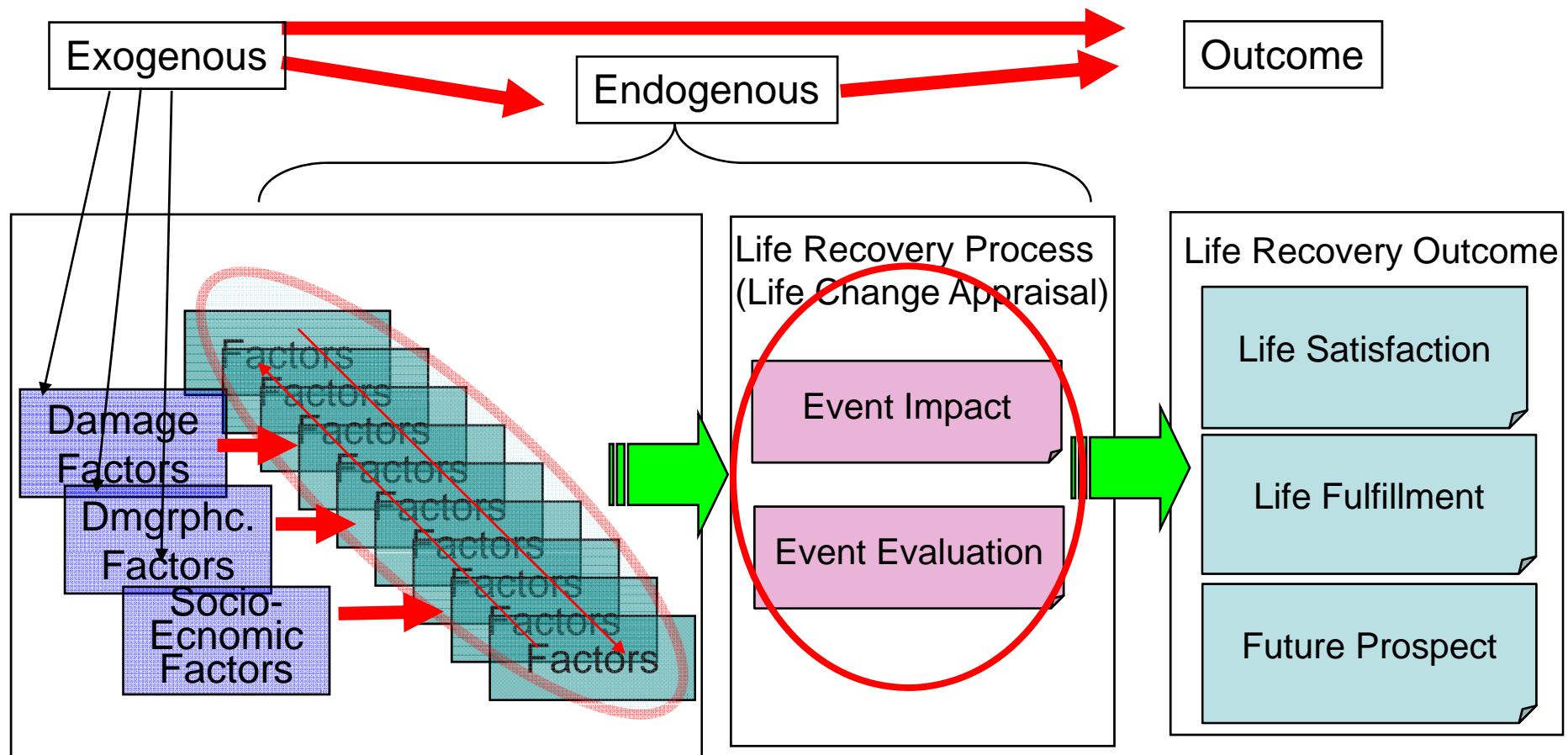
Structural Analyses of SCEM, Life
Recovery Processes, & Life Recovery
Outcome Variables

Research Framework of the 1999 & 2001 Hyogo Life Recovery Surveys

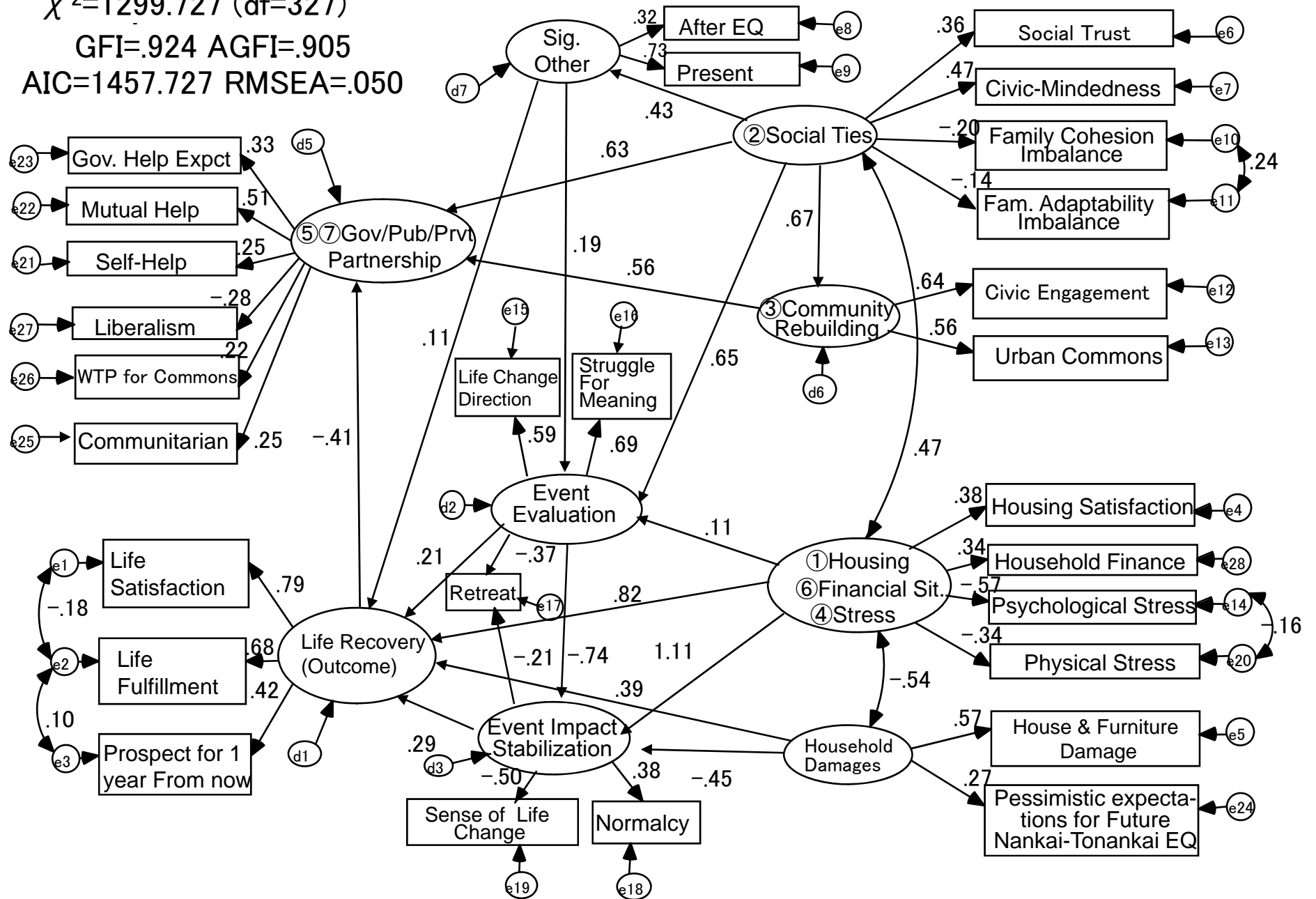
- The 1999 Disaster Process Study
- The 2001 Hyogo Life Recovery Survey Study



Research Framework of the 2003 & 2005 Hyogo Life Recovery Surveys

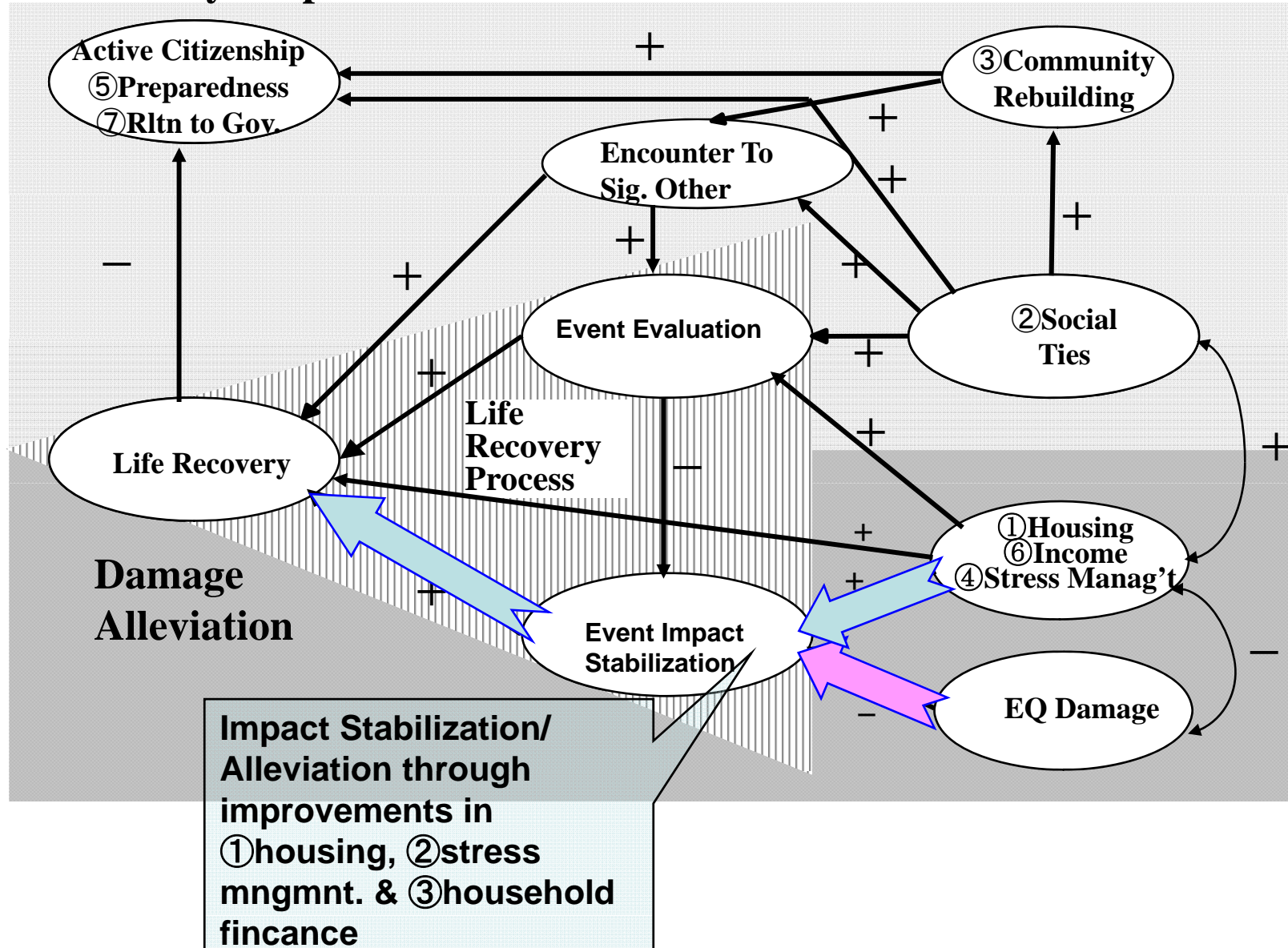


$\chi^2=1299.727$ (df=327)
 GFI=.924 AGFI=.905
 AIC=1457.727 RMSEA=.050

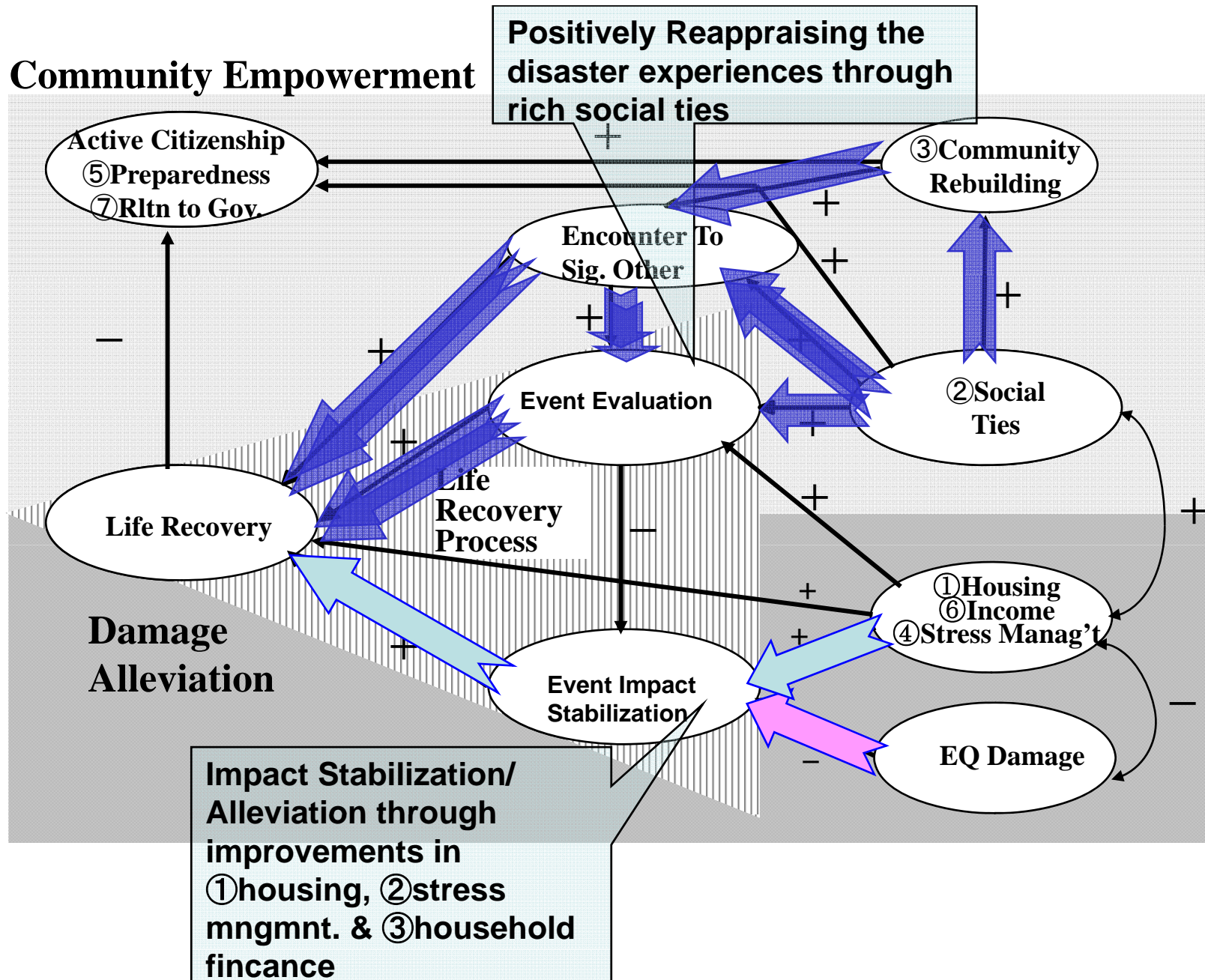


The final SEM life recovery model for the 2003 study data

Community Empowerment

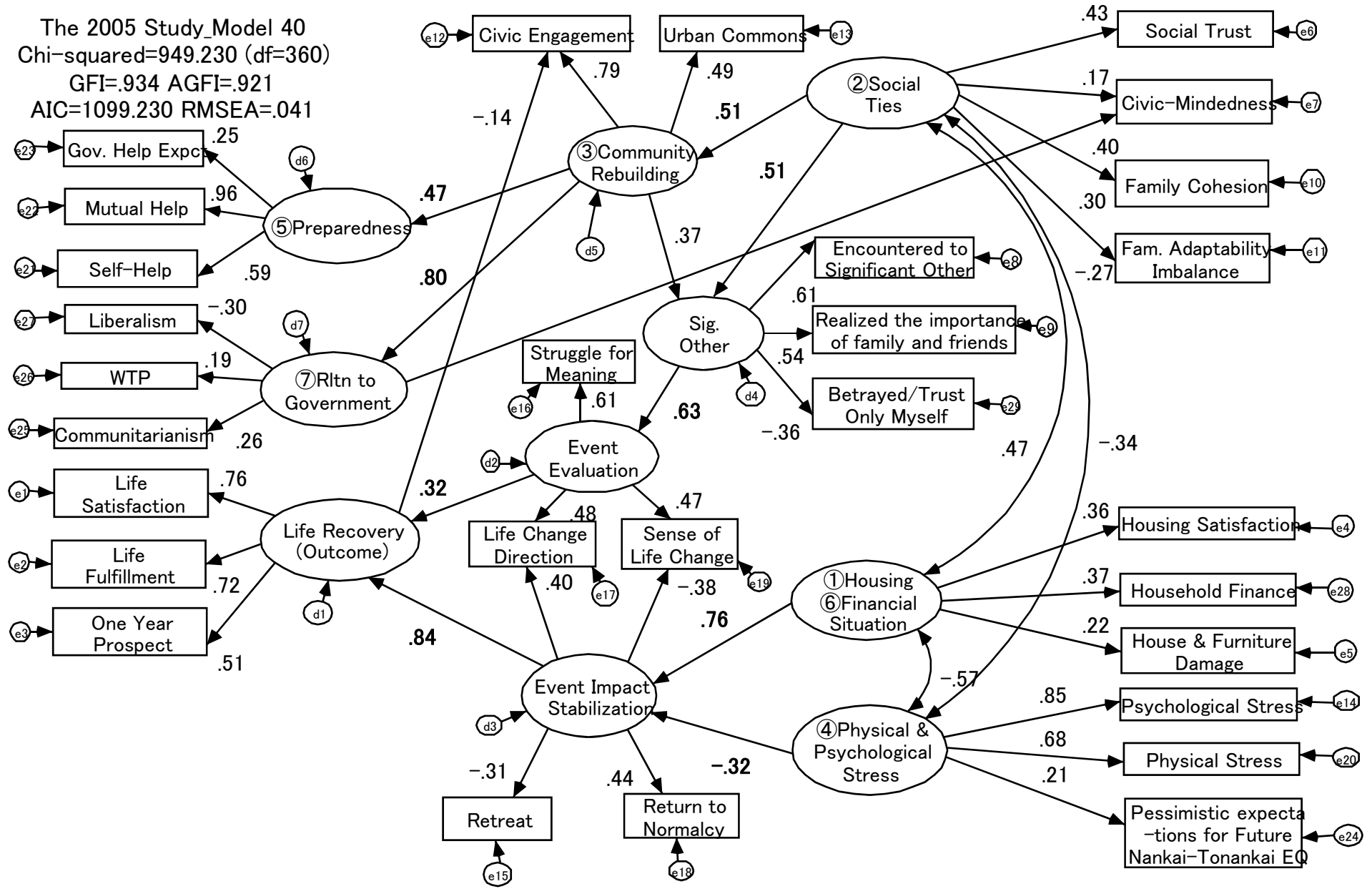


Bird's-eye view of life recovery process: The 2003 study results (N=1,203, Jan. 2003)



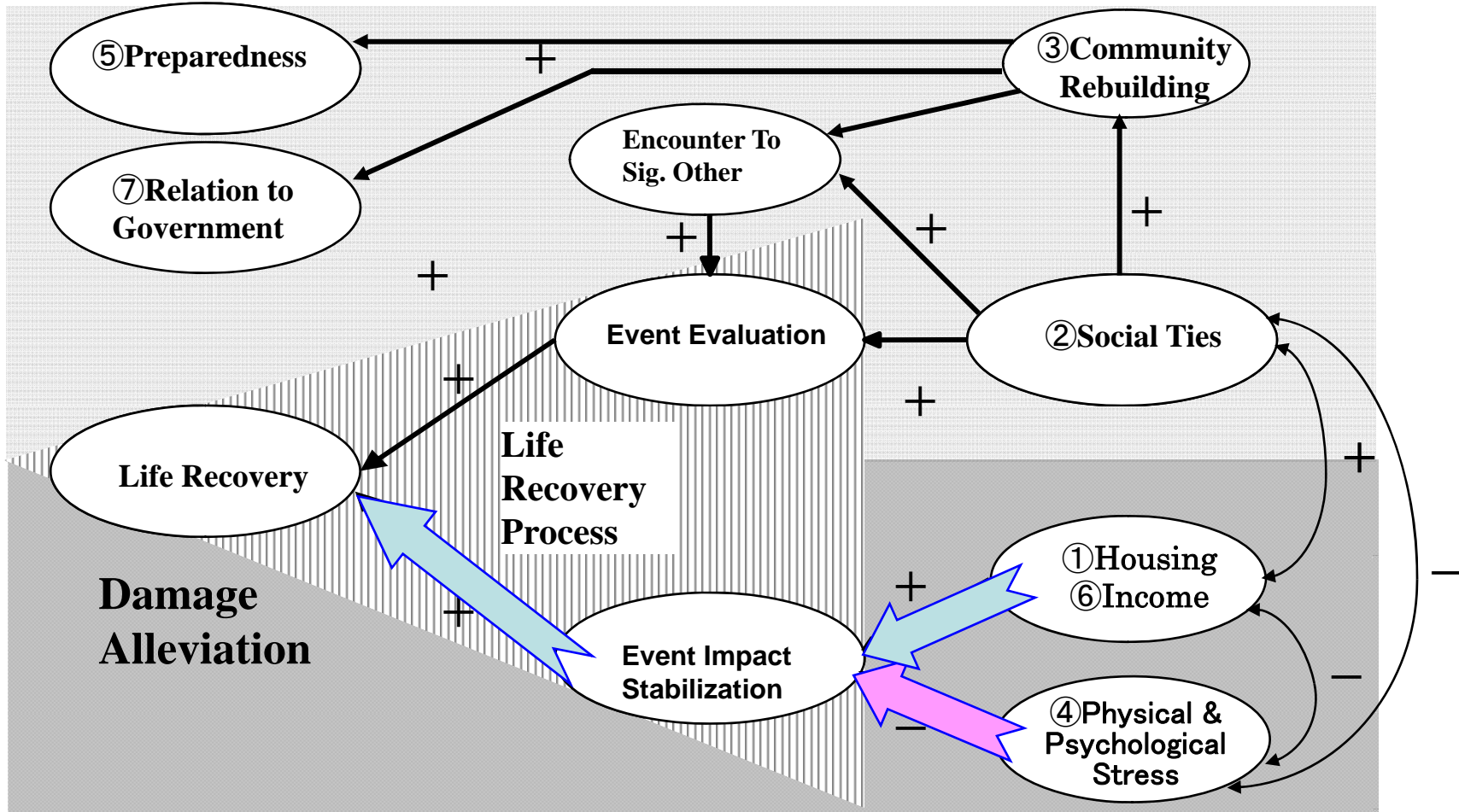
Bird's-eye view of life recovery process: The 2003 study results (N=1,203, Jan. 2003)

The 2005 Study_Model 40
 Chi-squared=949.230 (df=360)
 GFI=.934 AGFI=.921
 AIC=1099.230 RMSEA=.041



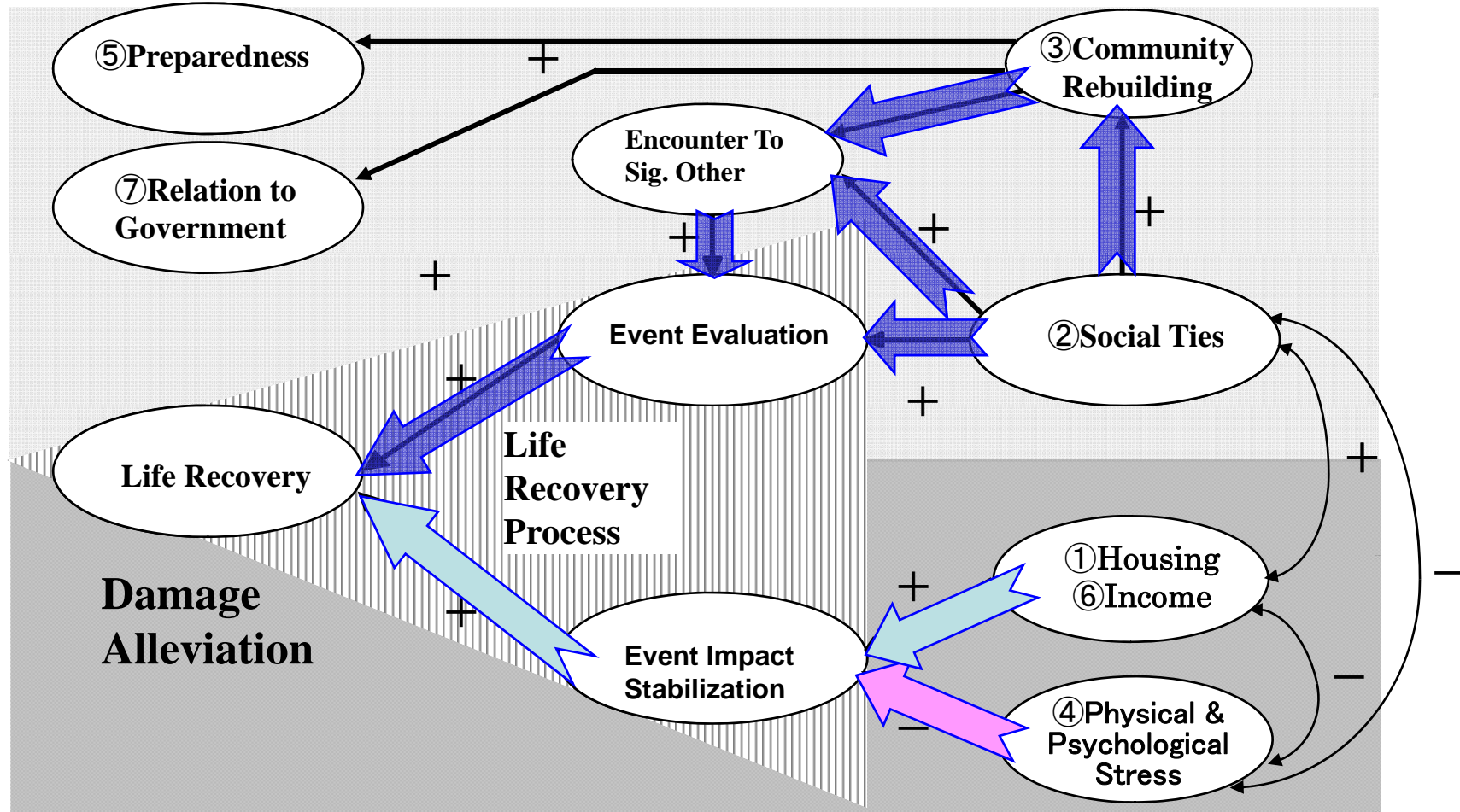
The final SEM life recovery model for the 2005 study data

Community Empowerment



Bird's-eye view of life recovery process: The 2005 study results (N=1,028, Jan. 2005)

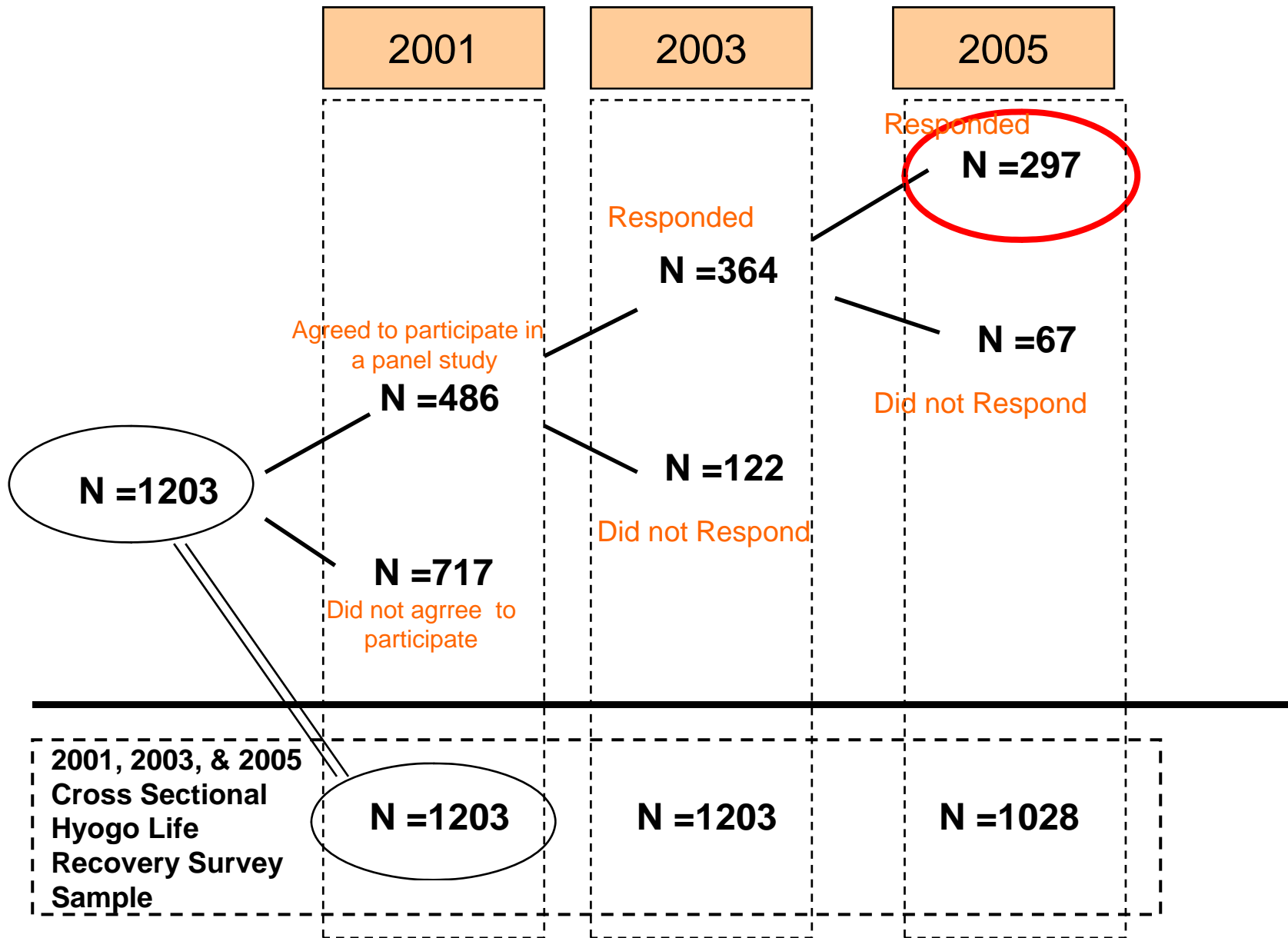
Community Empowerment



Bird's-eye view of life recovery process: The 2005 study results
(N=1,028, Jan. 2005)

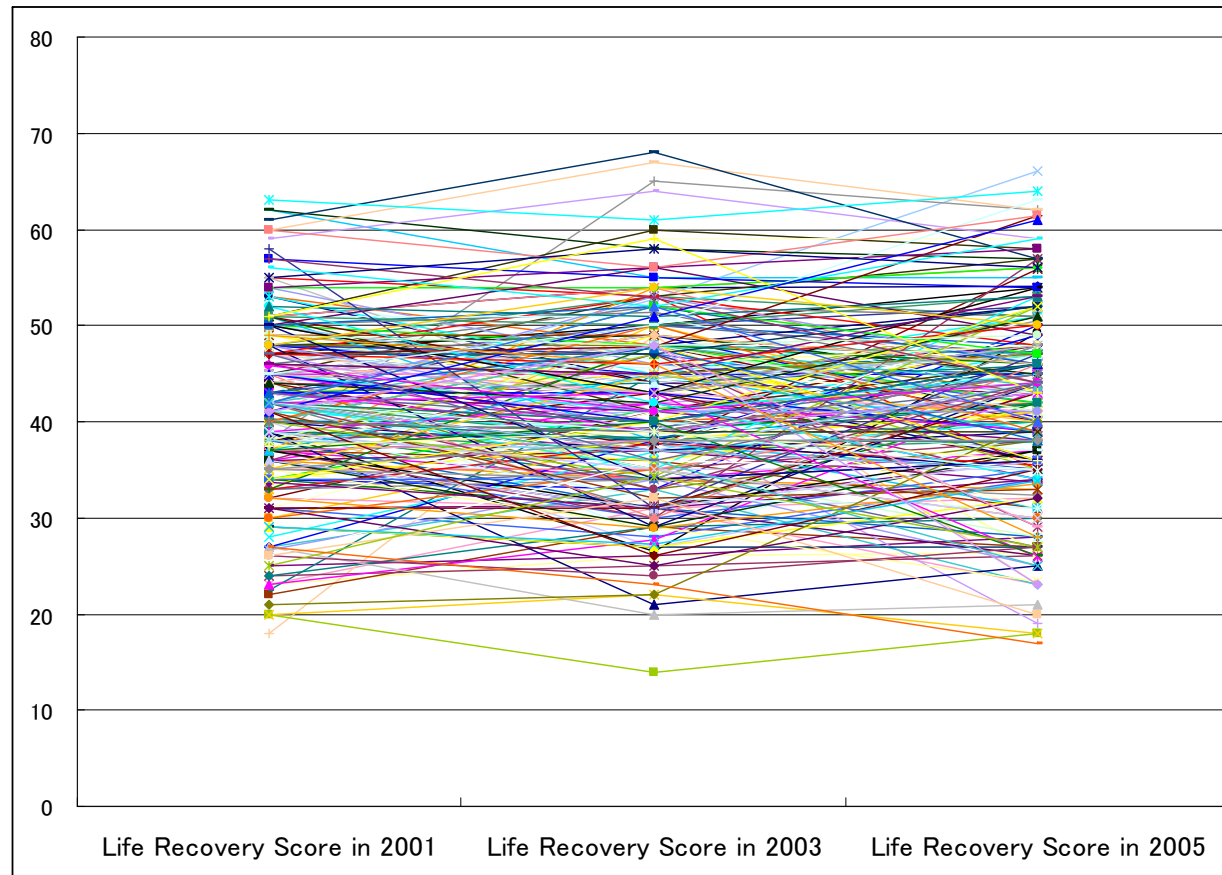
The 2001, 2003, & 2005 Hyogo Life Recovery Panel Survey:

Panel Study Sample and Survey Strategy

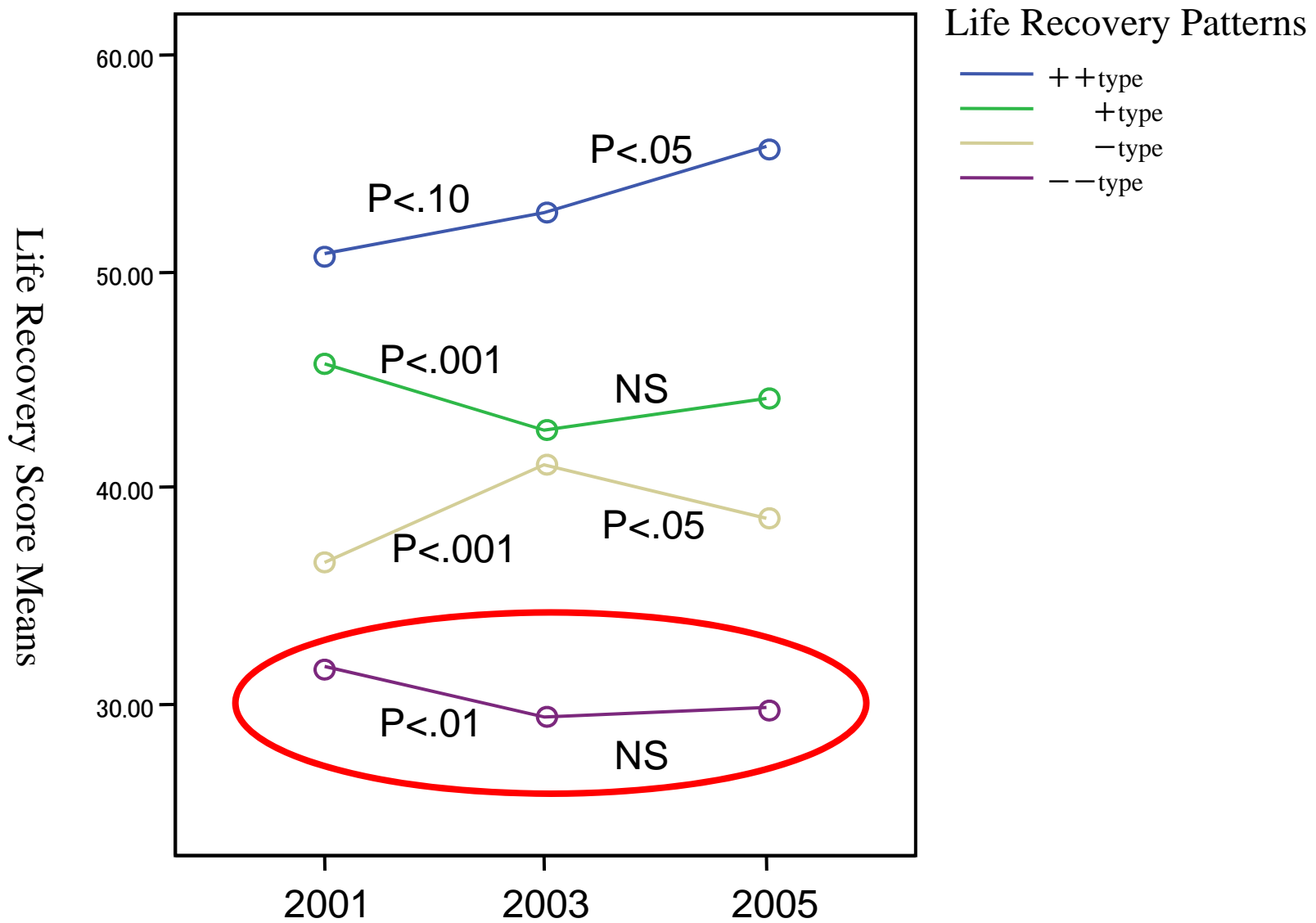


The 2001, 2003 and 2005 Panel Study Sample

Patterns of Life Recovery: Cluster Analysis Results of 297 Respondents



Change in life recovery scores in years 2001, 2003, & 2005 (N=297)

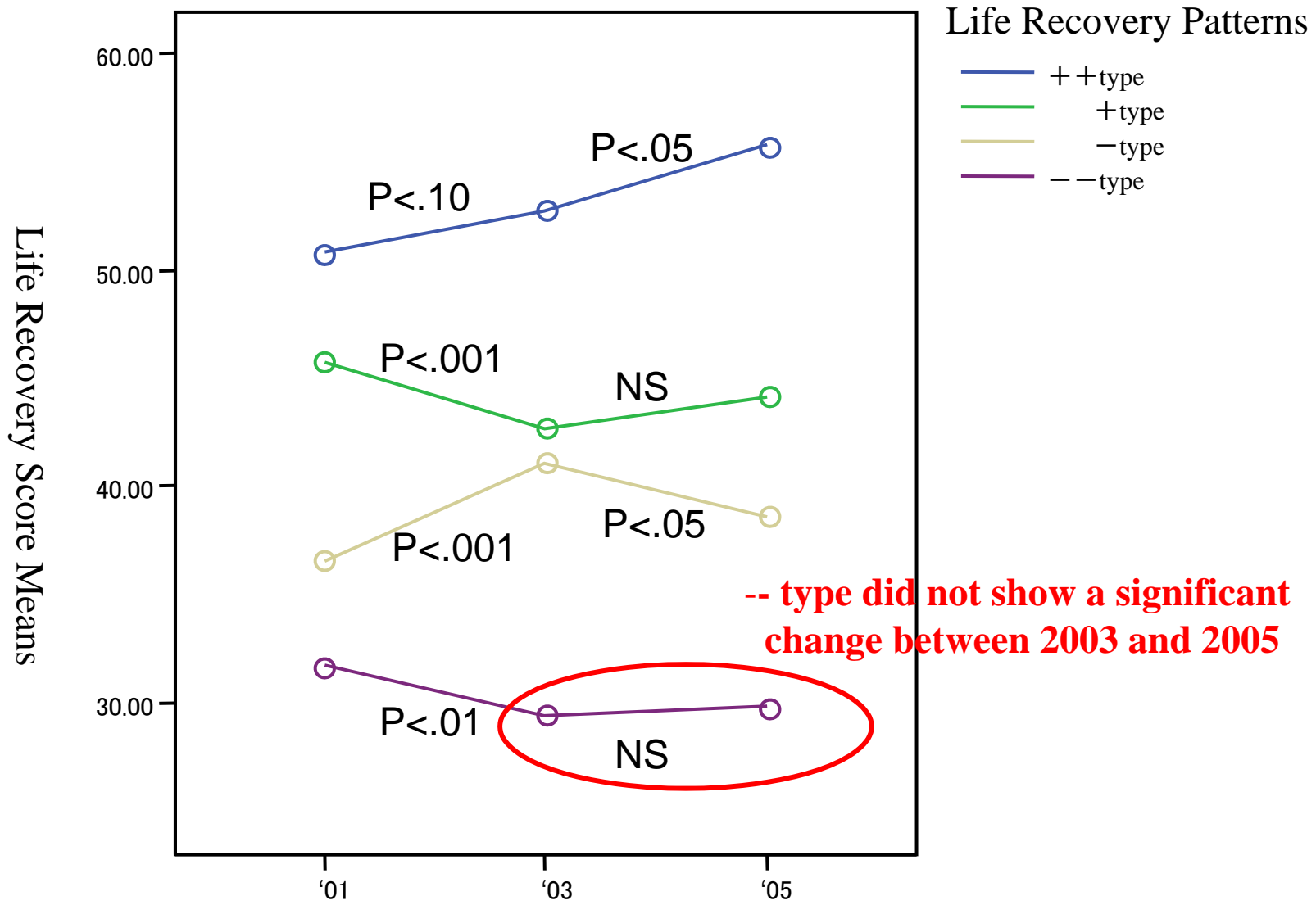


Cluster analysis and within-subject (repeated measure) ANOVA results

Factors related to“- -Type ”

- **Demography**
 - Mostly male
 - 50~64years old during the earthquake.
- **Damage**
 - had personal damage at the earthquake.
 - had severe household goods damage
- **The seven critical elements of life recovery**
 - 1) **Housing** : living in public housing
 - 2) **Social ties** : low social ties
 - 3) **Community Rebuilding** : low urban commons awareness
 - 4) **Mind and Body** : highly stressed
 - 5) **Economic/Financial Situation** :
 - Engaged in small business
 - Shops/Offices were damaged by the earthquake.
 - Low and decreasing income

Repeated Measure Tests for Each Recovery Pattern



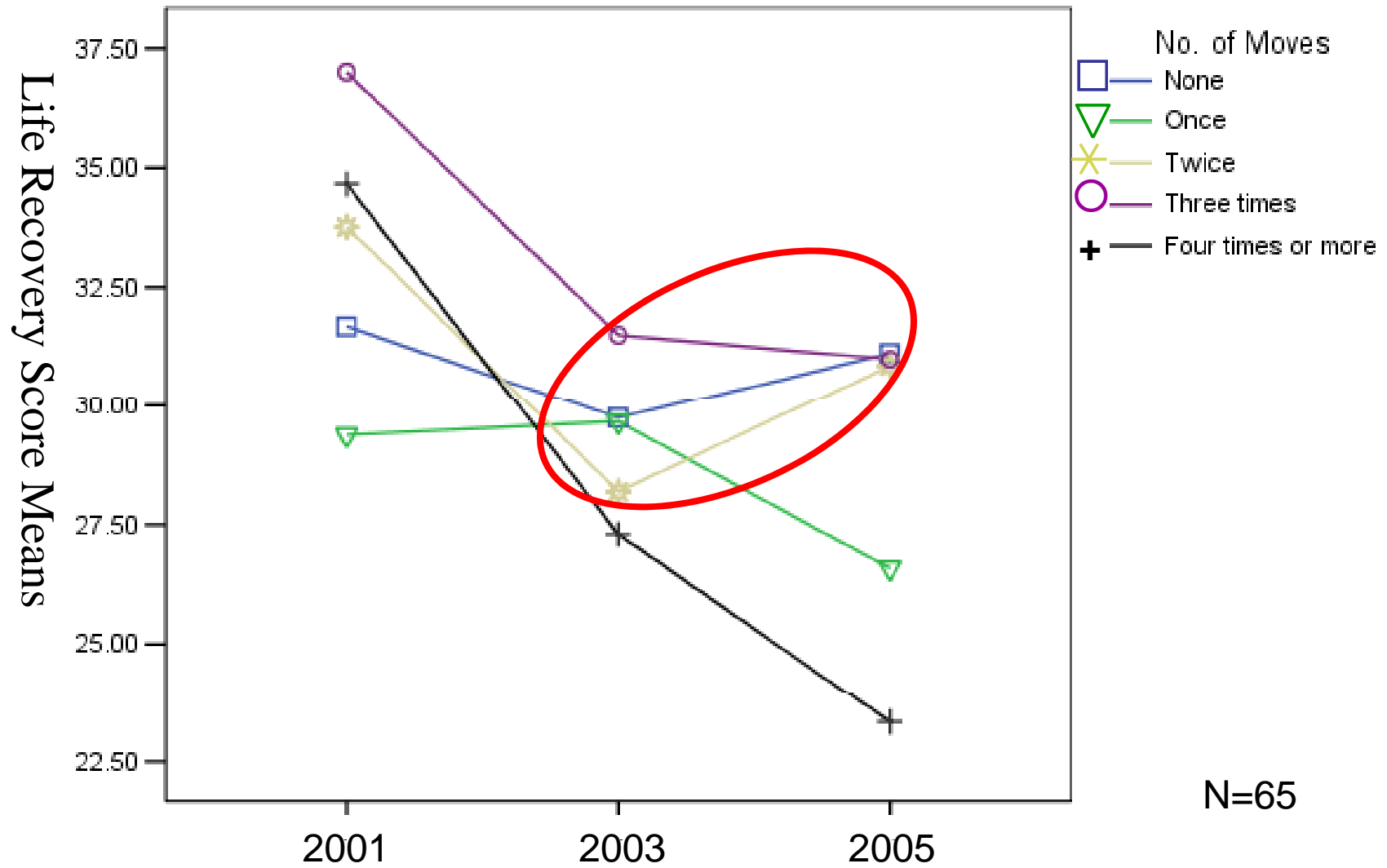
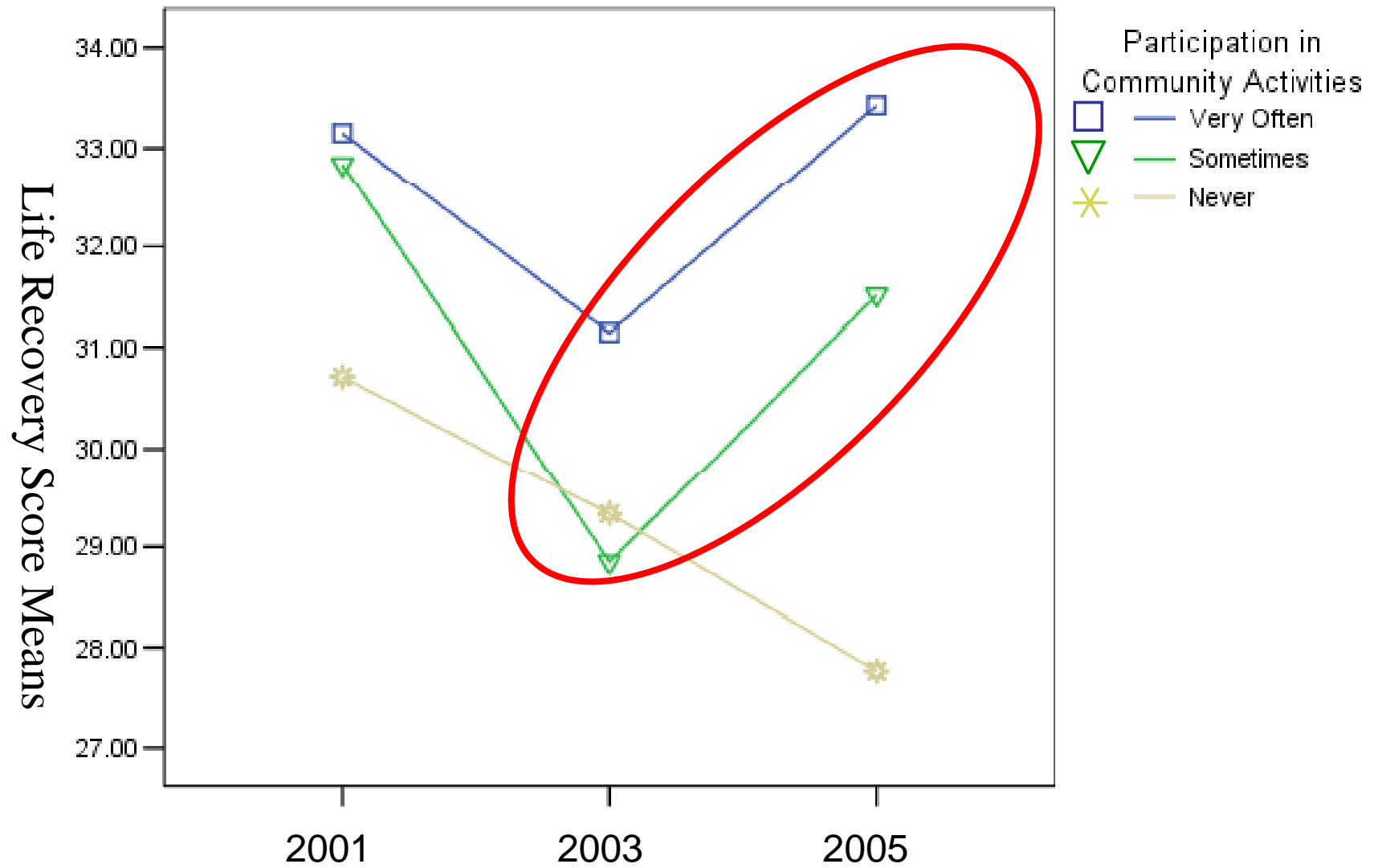
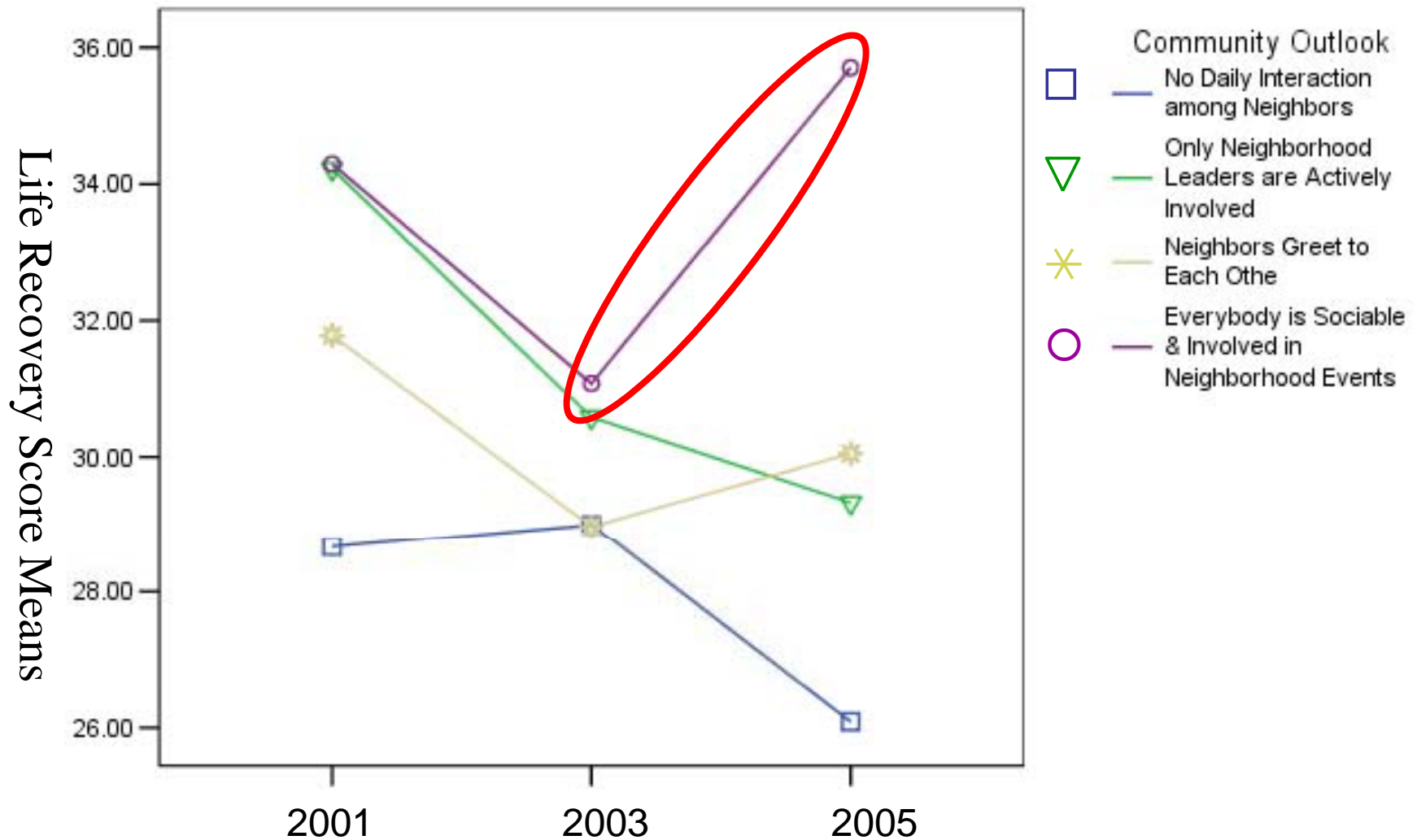


Figure 15: Number of relocations and changes in life recovery scores among “- -” type respondents



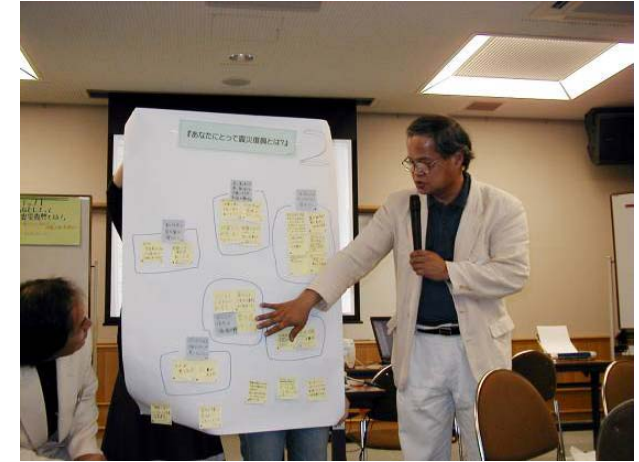
N=65

Figure 16: Participation in community activities & changes in life recovery scores among “- -” type respondents

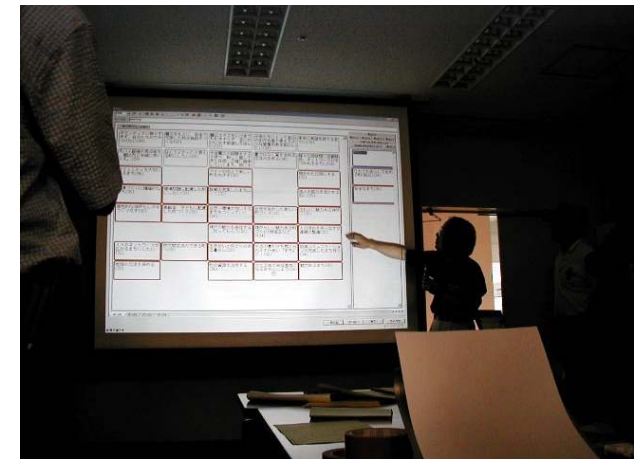


N=65

Figure 17: Community outlook & changes in life recovery scores among “- -” type respondents



The 2003/2004 Grass-root Assessment Workshops on Life Recovery(10 years after EQ)



Proportion of Life Recovery Categories in 1999, 2003 and 2004 Workshops



Tatsuki, S. (2007) Long-term Life Recovery Processes Among Survivors of the 1995 Kobe Earthquake: 1999, 2001, 2003, and 2005 Life Recovery Social Survey Results, Journal of Disaster Research, Vol.2 No.6, pp.484-501.