

Supplementary Materials for

Residential relocation and change in social capital: A natural experiment from the 2011 Japan Earthquake and Tsunami

Hiroyuki Hikichi, Yasuyuki Sawada, Toru Tsuboya, Jun Aida, Katsunori Kondo, Shihoko Koyama, Ichiro Kawachi

Published 26 July 2017, *Sci. Adv.* **3**, e1700426 (2017)
DOI: 10.1126/sciadv.1700426

This PDF file includes:

- fig. S1. Timeline of relocation among respondents.
- table S1. Comparison of baseline characteristics of all analytic samples, selected samples, and local census population aged 65 years or older in 2010.
- table S2. Sex- and age-adjusted averaged social capital scores at both surveys.
- table S3. Distribution of disaster experiences among baseline covariates for all analytic samples ($n = 3421$).
- table S4. Distribution of disaster experiences among baseline covariates for respondents who lived in the inundated area ($n = 523$).

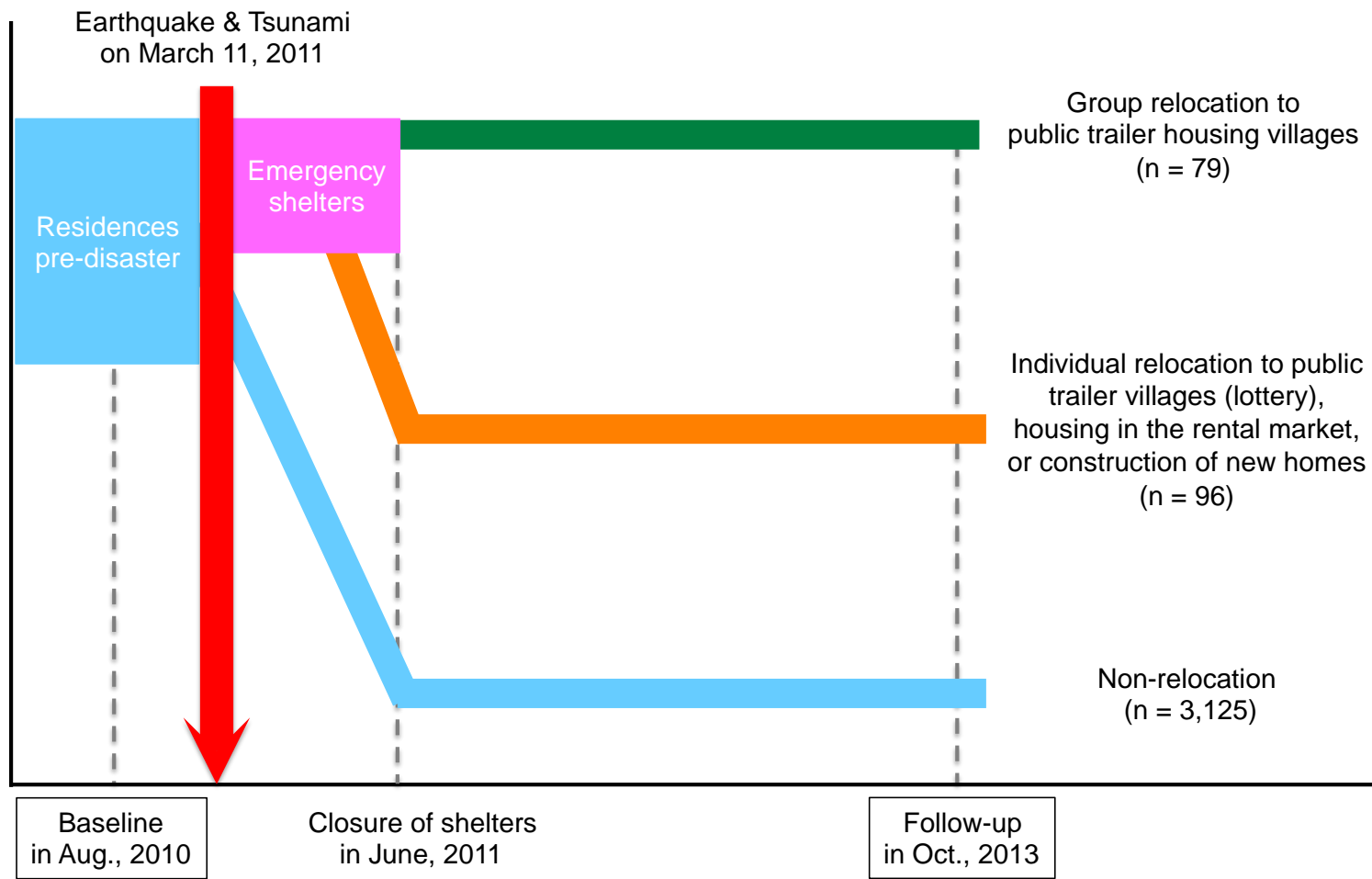


fig. S1. Timeline of relocation among respondents. While survivors were still housed in emergency shelters, city officials required them to make a decision about which type of relocation (group or individual relocation) they preferred.

table S1. Comparison of baseline characteristics of all analytic samples, selected samples, and local census population aged 65 years or older in 2010.

Item	All analytic samples (n = 3,421)		Tsunami inundated area (n = 523)		2010 local census for 65 years or older	
	n	%	n	%	n	%
Sex						
Male	1,518	44.4	207	39.6	3,735	42.8
Female	1,903	55.6	316	60.4	4,988	57.2
Age						
65-74 year	2,104	61.5	314	60.0	4,523	51.8
75-84 year	1,147	33.5	175	33.5	3,050	35.0
85 year and over	170	5.0	34	6.5	1,150	13.2
Marital status						
Married	2,404	74.0	344	72.3	5,618	64.7
Unmarried, widowed, & divorced	843	26.0	132	27.7	3,068	35.3
Employment status						
Working	554	18.4	94	22.3	1,493	17.2
Not working	2,465	81.6	328	77.6	7,169	82.8

table S2. Sex- and age-adjusted averaged social capital scores at both surveys.

	2010	2013	Difference
	Mean (S.E.)	Mean (S.E.)	(2013-2010)
Factor: Social cohesion			
Component: Mutual help			
Non-relocation	3.55 (0.01)	3.55 (0.01)	0.00
Group	3.64 (0.08)	3.51 (0.10)	-0.13
Individual	3.52 (0.10)	3.45 (0.09)	-0.07
Component: Trust			
Non-relocation	3.76 (0.01)	3.75 (0.01)	-0.01
Group	3.70 (0.09)	3.64 (0.09)	-0.06
Individual	3.87 (0.09)	3.69 (0.06)	-0.18
Component: Community attachment			
Non-relocation	4.00 (0.01)	3.99 (0.01)	-0.01
Group	4.11 (0.09)	3.46 (0.12)	-0.65
Individual	4.12 (0.09)	3.55 (0.11)	-0.57
Factor: Informal socializing & social participation			
Component: Frequency meeting with friends			
Non-relocation	3.75 (0.03)	3.65 (0.03)	-0.10
Group	3.93 (0.18)	4.40 (0.15)	0.47
Individual	4.16 (0.16)	3.71 (0.15)	-0.45
Component: Number of friends who met for the past month			
Non-relocation	3.62 (0.02)	3.46 (0.02)	-0.16
Group	3.57 (0.13)	3.58 (0.12)	0.01
Individual	3.67 (0.13)	3.40 (0.13)	-0.27
Component: Frequency participating to sports club per one week			
Non-relocation	1.89 (0.03)	1.83 (0.03)	-0.06
Group	1.35 (0.12)	1.46 (0.09)	0.11
Individual	1.72 (0.15)	1.50 (0.13)	-0.22
Component: Frequency participating to hobby club per one week			
Non-relocation	2.30 (0.03)	1.95 (0.03)	-0.35
Group	1.62 (0.14)	1.63 (0.14)	0.01
Individual	2.08 (0.16)	1.63 (0.11)	-0.45

Abbreviation: S.E., Standard error.

table S3. Distribution of disaster experiences among baseline covariates for all analytic samples ($n = 3421$).

	Sex (0: Male, 1: Female)	Age (continuous)	Educational attainment (0: ≤ 9 y, 1: ≥ 10 y)	Equivalized income (0: < 200 m, 1: ≥ 200 m)	Employment status (0: No, 1: Employment)	Divorce or bereavement (0: No, 1: Yes)	Living alone (0: yes, 1: Yes)	Depressive symptoms (0: Low risk, 1: High risk)								
Relocation (Ref.: No)																
Group	0.060 (0.057)	0.772 (0.684)	-0.556** (0.090)	-0.251** (0.066)	-0.004 (0.052)	0.053 (0.080)	-0.010 (0.035)	0.113 (0.059)								
Individual	0.088 (0.051)	0.969 (0.622)	-0.362** (0.080)	-0.156** (0.060)	0.052 (0.044)	0.036 (0.069)	-0.084** (0.031)	0.407 (0.051)								
$H_0: \beta_{\text{group}} - \beta_{\text{individual}} = 0$	n.s.	n.s.	**	**	n.s.	n.s.	n.s.	n.s.								
Loss of relatives and/or friends (Ref.: No)																
Yes	0.039* (0.018)	-0.776** (0.214)	-0.102** (0.027)	-0.034 (0.020)	0.038** (0.015)	-0.010 (0.023)	-0.031** (0.010)	-0.016** (0.018)								
Cons.	1.548** (0.009)	1.540** (0.011)	73.178** (0.107)	73.542** (0.132)	2.879* (0.014)	2.891** (0.017)	1.527** (0.010)	1.530** (0.012)	0.179** (0.007)	0.168** (0.009)	1.335** (0.014)	1.342** (0.014)	0.095** (0.005)	0.103** (0.006)	0.297** (0.009)	0.309** (0.011)
n	3,300	3,357	3,300	3,357	3,182	3,241	2,724	2,765	2,923	2,971	2,854	2,901	3,217	3,273	2,854	2,901

Abbreviations: Coef., coefficient; CI, confidence interval; n.s., not significant.

Note: Standard errors in parentheses.

* $p < 0.05$, ** $p < 0.01$

table S4. Distribution of disaster experiences among baseline covariates for respondents who lived in the inundated area ($n = 523$).

	Sex (0: Male, 1: Female)	Age (continuous)	Educational attainment (0: ≤ 9 y, 1: ≥ 10 y)	Equivalized income (0: < 200 m, 1: ≥ 200 m)	Employment status (0: No, 1: Employment)	Divorce or bereavement (0: No, 1: Yes)	Living alone (0: yes, 1: Yes)	Depressive symptoms (0: Low risk, 1: High risk)								
Relocation (Ref.: No)																
Group	0.005 (0.061)	0.988 (0.804)	-0.211* (0.093)	-0.138* (0.070)	-0.040 (0.060)	0.013 (0.083)	0.038 (0.028)	0.104 (0.066)								
Individual	0.021 (0.080)	-0.038 (1.050)	0.011 (0.118)	-0.038 (0.089)	0.003 (0.072)	-0.072 (0.106)	-0.048 (0.037)	0.122 (0.084)								
H ₀ : $\beta_{\text{group}} - \beta_{\text{individual}} = 0$	n.s.	n.s.	*	*	n.s.	n.s.	n.s.	n.s.								
Loss of relatives and/or friends (Ref.: No)																
Yes	0.018 (0.045)	-0.688 (0.586)	-0.094 (0.067)	-0.086 (0.050)	0.008 (0.042)	-0.005 (0.058)	-0.017 (0.020)	-0.052 (0.047)								
Cons.	1.598** (0.025)	1.590** (0.035)	73.038** (0.334)	73.730** (0.457)	2.539** (0.038)	2.555** (0.053)	1.401** (0.029)	1.429** (0.040)	0.219** (0.024)	0.212** (0.033)	1.335** (0.033)	1.335** (0.046)	0.048** (0.012)	0.060** (0.016)	0.306** (0.026)	0.367** (0.037)
n	493	511	493	511	455	475	379	395	398	414	453	470	464	482	416	429

Abbreviations: Coef., coefficient; CI, confidence interval; n.s., not significant.

Note: Standard errors in parentheses.

* $p < 0.05$, ** $p < 0.01$