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Examining social capital in rural collective action: its measurement, heterogeneity, and policy impact

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Tables

Examining social capital in rural collective action: its measurement, heterogeneity, and policy impact

Table 1 Descriptive statistics

		Overall		Control		Treatment		C vs T test
		mean	s.d.	mean	s.d.	mean	s.d.	p-val.
<u>With community residents,</u>								
<i>Q_IS1</i>	Environmental and natural conservation activities	0.881	0.324	0.791	0.408	0.916	0.277	0.000 ***
<i>Q_IS2</i>	Agricultural community events (festivals, etc.)	0.877	0.328	0.794	0.405	0.909	0.287	0.000 ***
<i>Q_IS3</i>	Activities to improve welfare in agricultural communities	0.565	0.496	0.480	0.501	0.598	0.491	0.001 ***
<i>Q_IS4</i>	Activities to promote settlement of outsiders	0.052	0.223	0.047	0.212	0.054	0.227	0.636
<i>Q_IS5</i>	Activities for green tourism	0.024	0.154	0.014	0.120	0.028	0.165	0.216
<i>Q_IS6</i>	Activities to promote the linkage of agriculture, commerce, and industry	0.024	0.154	0.018	0.133	0.026	0.161	0.437
<i>Q_IS7</i>	Activities to use renewable energy	0.028	0.166	0.022	0.146	0.031	0.173	0.441
<u>Together with urban residents and NPOs,</u>								
<i>Q_ES1</i>	Environmental and natural conservation activities	0.078	0.269	0.076	0.265	0.079	0.271	0.847
<i>Q_ES2</i>	Agricultural community events (festivals, etc.)	0.112	0.315	0.108	0.311	0.113	0.317	0.834
<i>Q_ES3</i>	Activities to improve welfare in agricultural communities	0.019	0.137	0.025	0.157	0.017	0.128	0.379
<i>Q_ES4</i>	Activities to promote settlement of outsiders	0.007	0.084	0.007	0.085	0.007	0.083	0.967
<i>Q_ES5</i>	Activities for green tourism	0.009	0.095	0.004	0.060	0.011	0.105	0.260
<i>Q_ES6</i>	Activities to promote the linkage of agriculture, commerce, and industry	0.006	0.077	0.007	0.085	0.006	0.075	0.765
<i>Q_ES7</i>	Activities to use renewable energy	0.002	0.045	0.004	0.060	0.001	0.037	0.485
<u>With community residents,</u>								
<i>Q_IA1</i>	Farmland conservation activities	0.808	0.394	0.661	0.474	0.865	0.342	0.000 ***
<i>Q_IA2</i>	Agricultural irrigation conservation activities	0.570	0.495	0.480	0.501	0.605	0.489	0.000 ***
<i>Q_IA3</i>	Forest conservation activities	0.863	0.344	0.729	0.445	0.915	0.279	0.000 ***
<i>Q_IA4</i>	River conservation activities	0.951	0.217	0.859	0.348	0.986	0.117	0.000 ***
<u>Together with urban residents and NPOs,</u>								
<i>Q_EA1</i>	Farmland conservation activities	0.091	0.287	0.083	0.276	0.093	0.291	0.608
<i>Q_EA2</i>	Agricultural irrigation conservation activities	0.089	0.284	0.101	0.302	0.084	0.277	0.387
<i>Q_EA3</i>	Forest conservation activities	0.053	0.225	0.043	0.204	0.057	0.232	0.384
<i>Q_EA4</i>	River conservation activities	0.090	0.286	0.087	0.282	0.091	0.287	0.843

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		Overall		Control		Treatment		C vs T test
		mean	s.d.	mean	s.d.	mean	s.d.	p-val.
<i>POLICY</i>	Payments for activities to enhance multi-functionality	0.721	0.449					
<i>HHs</i>	Number of households in the community (1000)	0.289	0.799	0.531	1.218	0.196	0.532	0.000 ***
<i>AGEA</i>	Average age of residents in the community	54.273	6.996	53.860	8.613	54.433	6.260	0.248
<i>AGEH</i>	Age diversity (Simpson's index)	0.876	0.072	0.869	0.094	0.878	0.061	0.086 *
<i>FEMAR</i>	Percentage of female	0.522	0.041	0.515	0.046	0.525	0.039	0.001 ***
<i>NFARM</i>	Number of agricultural management entities (10)	1.145	0.820	0.881	0.690	1.247	0.844	0.000 ***
<i>O500</i>	Percentage of agricultural management entities with sales of 5 million yen or more	7.267	13.527	7.594	15.549	7.140	12.670	0.636
<i>NCORP</i>	Percentage of agricultural corporations	2.448	6.277	2.232	7.305	2.532	5.836	0.500
<i>VEGET</i>	Percentage of farmers selling vegetables	22.530	21.570	23.890	25.158	22.004	20.007	0.217
<i>MAINA</i>	Percentage of farmers whose main source of income is agriculture	10.399	14.546	11.210	16.215	10.086	13.847	0.275
<i>AGRIA</i>	Percentage of agricultural areas in total area of the community	46.013	29.874	37.262	29.941	49.394	29.173	0.000 ***
<i>SLOPE</i>	Average slope in the community	7.519	4.586	7.599	4.736	7.488	4.530	0.732
<i>DID</i>	Percentage of farm households within 15 minutes of a Densely Inhabited District	39.336	48.874	46.209	49.946	36.681	48.227	0.006 ***
<i>LOCG</i>	Number of local government branches	0.018	0.133	0.025	0.157	0.015	0.123	0.293
<i>SCHOOL</i>	Number of elementary schools	0.162	0.390	0.199	0.426	0.148	0.374	0.066 *
<i>n</i>		994		277		717		

Note: * and *** indicate statistical significance at the 10% and 1% levels, respectively.

Table 2 Model comparison of LMVs

	DF	AIC	BIC	RMSEA	GFI	AGFI
Simple LVM	209	-11420.6	-11189.5	0.132	0.697	0.634
Hierarchical LVM	205	-13646.8	-13394.7	0.100	0.819	0.776

Note: DF, AIC, BIC, RMSEA, GFI, AGFI indicate Degree of freedom for model, Akaike Information Criterion, Bayesian Information Criterion, Root mean Square Error of Approximation, Goodness of Fit Index, and Adjusted Goodness of Fit Index, respectively.

Table 3 Heterogeneity of SC

		Group			Pairwise comparison		
Overall		(A) Mountainous and depopulated area	(B) Mountainous or depopulated area	(C) Not mountainous and depopulated area	A-B	A-C	B-C
<i>IG</i>	Mean	0.523	0.499	0.539	0.543	***	***
	s.d.	0.185	0.198	0.186	0.160		
<i>EG</i>	Mean	0.073	0.085	0.076	0.053		***
	s.d.	0.138	0.146	0.154	0.101		*
<i>IA</i>	Mean	0.830	0.784	0.852	0.875	***	***
	s.d.	0.204	0.245	0.166	0.158		
<i>EA</i>	Mean	0.091	0.099	0.104	0.066		
	s.d.	0.215	0.216	0.239	0.181		
<i>SC</i>	Mean	0.112	0.120	0.118	0.092		**
	s.d.	0.150	0.155	0.168	0.116		*
<i>n</i>		994	412	305	277		

Note: *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 4 Estimation results of regression models

	OLS (GLM)		SLM		SEM		SDM	
	Coef.	s.e.	Coef.	s.e.	Coef.	s.e.	Coef.	s.e.
<i>POLICY</i>	0.316 ***	0.084	0.315 ***	0.083	0.302 ***	0.085	0.237 ***	0.091
<i>HHs</i>	-0.143 **	0.059	-0.145 **	0.058	-0.163 ***	0.060	-0.197 ***	0.075
<i>AGEA</i>	-0.003	0.009	-0.003	0.008	-0.002	0.008	-0.001	0.009
<i>AGEH</i>	-0.523	0.702	-0.525	0.696	-0.541	0.699	-0.739	0.696
<i>FEMAR</i>	0.042	0.944	0.037	0.937	-0.089	0.938	-0.104	0.930
<i>NFARM</i>	0.133 ***	0.047	0.134 ***	0.047	0.136 ***	0.048	0.120 **	0.049
<i>O500</i>	-0.012 ***	0.004	-0.012 ***	0.004	-0.012 ***	0.004	-0.012 ***	0.004
<i>NCORP</i>	0.011 *	0.006	0.011 *	0.006	0.011 *	0.006	0.010 *	0.006
<i>VEGET</i>	0.003 *	0.002	0.003 **	0.002	0.004 **	0.002	0.004 **	0.002
<i>MAINA</i>	0.001	0.003	0.001	0.003	0.001	0.003	0.002	0.003
<i>AGRIA</i>	-0.002	0.001	-0.002	0.001	-0.002	0.001	-0.001	0.002
<i>SLOPE</i>	0.006	0.009	0.005	0.009	0.005	0.009	0.007	0.010
<i>DID</i>	-0.001 *	0.001	-0.001 *	0.001	-0.001 *	0.001	-0.003 **	0.001
<i>LOCG</i>	0.318	0.272	0.322	0.270	0.376	0.273	0.446	0.276
<i>SCHOOL</i>	0.216 **	0.105	0.216	0.104	0.213 *	0.103	0.235 **	0.104
Constant	-2,440 **	1.001	-2,401 **	-0.998	-2,381 **	-0.996	-3,319 ***	1.017
Ind. var. lag	no		no		no		yes	
ρ / λ			0.012		0.087 **		0.078 *	
LL	-1,503.3		-1,502.3		-1,500.2		-1,483.3	
AIC	3,038.7		3,040.5		3,036.5		3,032.6	
N	994		994		994		994	

Note: *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 5 Spatial dependency of key variables

	Moran's I	p value
SC (dep. var.)	0.121 ***	0.000
OLS residuals	0.048 **	0.019
SLM residuals	0.041 **	0.039
SEM residuals	-0.001	0.498
SDM residuals	-0.001	0.508

Note: **, and *** indicate statistical significance at the 5% and 1% levels, respectively.

Table 6 Total and indirect impacts of policy

	(A) Indirect impacts		(B) Total impacts		$\frac{1-(A)}{(B)} \times 100\%$
	Coef.	s.e.	Coef.	s.e.	
<i>SC</i>	0.201	0.148	0.443 ***	0.148	54.5
<i>IG</i>	0.540 ***	0.202	0.887 ***	0.201	39.2
<i>EG</i>	0.211	0.160	0.460 ***	0.158	54.1
<i>IA</i>	0.498 ***	0.171	0.910 ***	0.172	45.3
<i>EA</i>	0.159	0.197	0.358 *	0.193	55.7

Note: * and *** indicate statistical significance at the 10% and 1% levels, respectively.

Table 7 Estimation results of ATE by PSM

	Coef.	s.e
<i>SC</i>	0.205 ***	0.054
<i>IG</i>	0.456 ***	0.074
<i>EG</i>	0.184 ***	0.061
<i>IA</i>	0.484 ***	0.065
<i>EA</i>	0.190 ***	0.070

Note: *** indicates statistical significance at the 1% level, respectively.