

The effect of Northeastern Japan Earthquake on the energy conservation behavior in Japan, China, Germany and the United States

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Research questions

- Did the Great East Japan Earthquake affect the electricity saving behaviors in Japan and other countries?
 - ✓ There was large scale campaign to save electricity in Japan after the Earthquake, but other countries were not directly affected.
 - ✓ However, people in other countries might be also psychologically affected by the large - scale disaster.
- Does the level of collectivism mediate the effect of descriptive norms?
 - ✓ Descriptive norms: The perception that other people are also taking the behavior. Previous research found that descriptive norms have impacts on environmental behaviors(e.g. Nolan et al., 2008)
 - ✓ The group norm is more important for collectivistic individuals, therefore descriptive norm would have stronger power for those individuals.



Method

- **Research period:** April-June 2012
- **Respondents:** University students in four countries: Japan, China, Germany and the United States.
- **Procedures:** The number of valid answers were 662 in Japan, 184 in China, 296 in Germany and 87 in the U.S.

Discussion

- The changes in the view of life was the consistent determinant in all four countries. Influence by the Earthquake also had effects, but it was smaller than that of the changes in view of life.
- Attitudes toward nuclear power plants did not affect electricity saving behaviors.
- It shows that psychological impact by the Earthquake , not the actual damage was large enough to affect the behaviors in other countries as well.
- Descriptive norm had stronger effects for those who are high in collectivism in Japan and China. The hypothesis was supported only in collectivistic countries.

Results

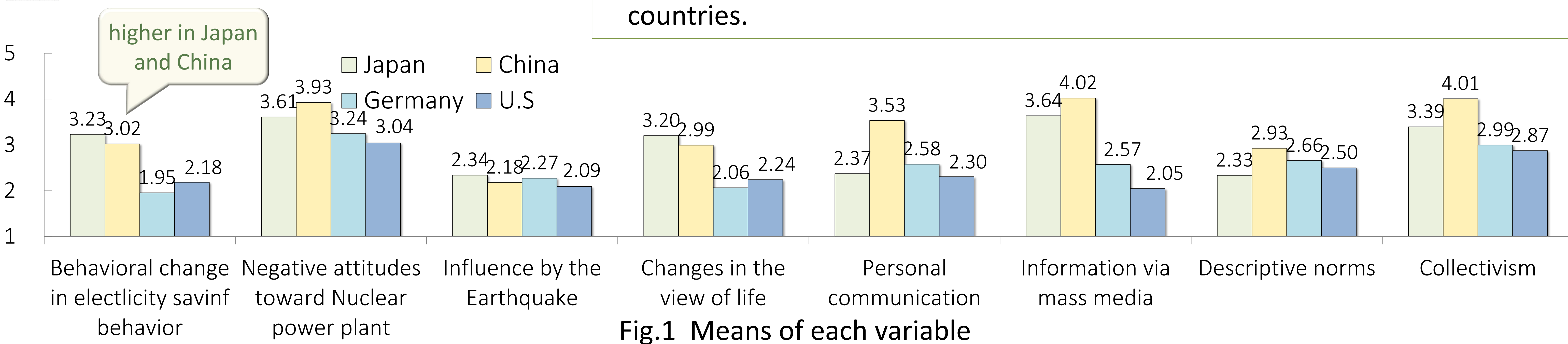


Table.1 Determinants of electricity saving behaviors				
	Japan	China	Germany	U.S
Sex	.049	.041	.055	-.053
Negative attitudes toward Nuclear power plant	.042	.093	.089	.220 †
Influence by the Earthquake	.134 ***	.154 *	.201 ***	.035
Changes in the view of life	.247 ***	.240 ***	.412 ***	.251 *
Personal communication	.165 ***	.205 **	-.039	.095
Information via mass media	.013	.206 **	.072	.119
Descriptive norms	.178 ***	.094	.021	.082
Collectivism	.139 ***	-.049	.144 *	.022
R ²	.280	.309	.358	.278
F	28.679 ***	9.407 ***	15.388 ***	3.664 **

*** p<.001, ** p<.01, * p<.05, † p<.10

Only in Japan, High collectivistic participants show stronger correlation between Descriptive norms and behavior

		Negative attitudes toward Nuclear power plant	Influence by the Earthquake	Changes in the view of life	Personal communication	Information via mass media	Descriptive norms
Japan	Low collectivism (N=298)	.135 *	.231 ***	.370 ***	.276 ***	.127 *	.216 ***
	High collectivism (N=310)	.152 **	.143 *	.348 ***	.324 ***	.133 *	.349 ***
	Z(Different between two rs)	-0.201	1.119	0.308	-0.642	-0.076	-1.771 †
China	Low collectivism (N=23)	.297	.242	.459 *	.391 †	.517 *	.200
	High collectivism (N=160)	.230 **	.220 **	.379 ***	.362 ***	.270 ***	.276 ***
	Z(Different between two rs)	0.302	0.097	0.408	0.145	1.245	-0.341
Germany	Low Collectivism (N=229)	.280 ***	.393 ***	.534 ***	.164 *	.114 †	-.003
	High collectivism (N=65)	.410 ***	.439 ***	.485 ***	.085	.297 *	.165
	Z(Different between two rs)	-1.027	-0.386	0.431	0.565	-1.337	-1.182
U.S	Low collectivism (N=65)	.412 ***	.054	.420 ***	.234 †	.306 *	.013
	High collectivism (N=22)	.215	.115	.336	.292	.472 *	.343
	Z(Different between two rs)	0.819	-0.236	0.376	-0.239	-0.749	-1.312

*** p<.001, ** p<.01, * p<.05, † p<.10