

**Topic-Setting Program to Advance Cutting-Edge  
Humanities and Social Sciences Research**

(Responding to Real Society)

**Progress Report**  
(Summary of Final Report)

**The Effects of Institutions and Culture on Social Norms and Public Morality:  
Laboratory and Field Experiments**

**Core-Researcher:**     Masaru Sasaki    

**Institution:**     Osaka University    

**Academic Unit:**     Graduate School of Economics    

**Position:**     Professor    

**Research Period:** FY 2015 – FY 2018

### 1. Basic information of research project

Research Area	Interrelationship between institutions, culture, public spirit, and socioeconomic systems
Project Title	The Effects of Institutions and Culture on Social Norms and Public Morality: Laboratory and Field Experiments
Institution	Osaka University
Core-Researcher (Name, Academic Unit & Position)	Masaru Sasaki, Graduate School of Economics, Professor
Project Period	FY2015 - FY2018
Appropriations Plan (¥)	FY2015 6,090,000 JPY
	FY2016 9,330,000 JPY
	FY2017 8,700,000 JPY
	FY2018 2,660,000 JPY

### 2. Purpose of research

The objective of this project is to explore the effects of market mechanisms and various societal institutions on people's "public moral" or "moral" behavior using laboratory and field experimental approaches. Our project also focuses attention on the differences of these effects based on geographical areas and cultural backgrounds and then suggests the optimal societal institution to improve society's moral behavior. Throughout this research project, we attempt to make a social and academic contribution to the fields of humanities and social science.

When several people get together, they organize a group, spontaneously create their own unique culture, and foster social norms and public moral behavior shared by the group members. This gathering eventually evolves into the formation of a "society." In a well-formed society, the market system, economic and social institutions, and society-oriented customs are subsequently established, which facilitates business and community activities under established rules. Conversely, the market system and economic and social institutions arise spontaneously at first, and they subsequently determine the social norms and public moral behaviors shared by people, which eventually leads to the formation of a society. The association between the economic and social institutions and people's moral behavior is mutually dependent and differs by cultural background. Exploring the dynamic evolution and formation of society is one of the most important tasks to be considered in the field of humanities and social science in which "humans, cultures, and society" is the main subject of study. It is necessary for researchers to identify appropriate social systems and institutions that enhance people's respect for social norms and public moral behavior from a policy-making perspective as well as from an academic perspective. By doing so, we can reduce the social risk of the promotion of fraudulent behaviors due to a lack of morals and the disaster risk in which people do not make considerable contributions to improving a disaster-prevention system in communities that have succumbed to moral hazards. Our mission is to suggest policy implications to build an intellectual and mature society and then overcome these risks.

### 3. Outline of research (Including study member)

<Laboratory experimental study group>

To measure the extent of public moral behavior, we will use the amount that people are willing to pay from their own pocket to donate 50 shots of polio vaccine to help children in poor countries with the assistance of an authorized NPO, the Japan Committee, Vaccines for the World's Children (JCV). We investigate how people's willingness-to-pay varies by different treatments into which the market mechanism, voting rules, and delegation agreements are incorporated.

Group leader	Sasaki, Masaru	Graduate School of Economics, Osaka University, Professor	Coordination of group activities
Collaborator	Kaneko, Shinji	IDEC, Hiroshima University, Professor	Design and advice of laboratory experiments
Collaborator	Yasui, Kengo	Faculty of Economics, Aoyama Gakuin University, Associate Professor	Design and analyses of laboratory experiments, write papers
Collaborator	Inukai, Keigo	Faculty of Economics, Meiji Gakuin University, Associate Professor	Design and analyses of laboratory experiments, write papers
Collaborator	Kawata, Keisuke	ISS, The University of Tokyo, Associate Professor	Design and analyses of laboratory experiments, write papers
Collaborator	Yasuda, Yosuke	Graduate School of Economics, Osaka University, Associate Professor	Design and advice of laboratory experiments
Collaborator	Yamane, Shoko	Faculty of Economics, Kindai University, Associate Professor	Conduct, manage, and run laboratory experiments
Collaborator	Mori, Tomoharu	College of Comprehensive Psychology, Retsumeikan University, Associate Professor	Conduct, manage, and run laboratory experiments
Collaborator (practitioner)	Ito, Mitsuko	The Japan Committee, Vaccines for the World's Children, Board of Directors, Executive Director	Advice on laboratory design and activities
Collaborator (practitioner)	Kozuka, Eiji	JICA	Design and analyses of laboratory experiments

<Field experimental study group> examines impacts, both positive and adverse, of improved information provision in terms of its swiftness and precision on the individual behavior of disaster prevention and mitigation through field experimental study in the model Barangay (village) in the Philippines.

Group leader	Kurokawa, Kiyoto	College of Economics, Ritsumeikan University, Professor	Coordination of group activities
Collaborator	Seki, Erika	Graduate School of Economics, Osaka University, Professor	Design and analyses of field experiment, write papers
Collaborator	Ranola, Roberto F.	College of Economics and Management, University of the Philippines at Los Banos (UPLB), Professor	Coordination of collaborators, advices on the design and implementation of field works
Collaborator	Atienza, Vella A.	Institute for Governance and Rural Development, College of Public Affairs and Development, UPLB, Assistant Professor	Cooperation in the conduct of field work and involving stakeholders
Collaborator	Sobremisana, Marisa J.	School of Environmental Science and Management, UPLB, Assistant Professor	Advice on policy application and out-reach field activities
Collaborator (practitioner)	Borja, Lennie S.	Laguna Lake Development Authority, International relations Research Department, Manager	Advice on policy application

#### 4. Research results and outcomes produced

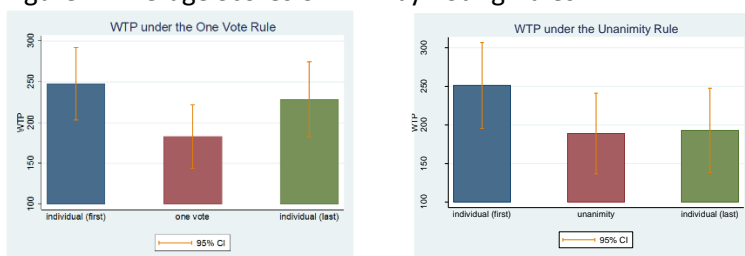
The majority of economists have engaged in research based on the presumption that people’s choices and behaviors are determined by their monetary incentives. In recent years, however, many behavioral economists have found that people’s choices and behaviors are influenced by reciprocity, altruistic motives, and the social norms shared by their society. Our project team aims to find appropriate social systems and institutions that enhance people’s respect for social norms and public moral behavior from a behavioral economics perspective. Our research project consists of laboratory and field economic experiments.

<Laboratory experimental study group>

These research results and outcomes are cited and summarized from Inukai et al. (2018).

Our team designs laboratory experiments to explore how the committee decision-making by various voting rules affects the extent of morality of the subjects. To measure the extent of morality, we employ the Becker-DeGroot-Marschaks method (BDM) to reveal a subject's willingness-to-pay (WTP) for the purchase of the 50 shots of polio vaccine. These shots are donated to children suffering from poliomyelitis in developing countries through the Japan Committee, Vaccines for the World's Children (JCV). Individuals who pay more money for the shots of polio vaccines are considered as those who have the higher standards of morality. We then compare WTP between two treatments: individual and committee decision-makings by voting. This shows effects of the social institution such as the voting mechanism on people's standards of morality. Using our original experimental data, we found that WTP was significantly lower in committee decision-making by voting than in individual decision-making (Figure 1).

Figure 1: Average Scores of WTP by Voting Rules

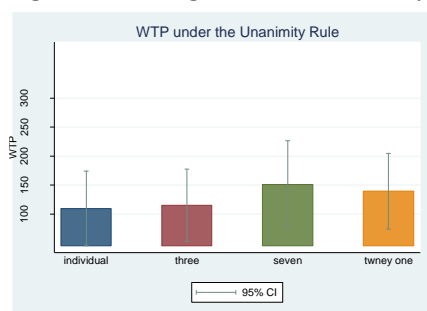


Note: The vertical axis represents “the maximum price an individual can pay for the 50 shots of polio vaccine from the initial endowment (1000 JPY)”. “individual” in the horizontal axis means decision-making by an individual, “one vote” rule implies that two members have to purchase two sets of the 50 shots of polio vaccines if at least one member agrees to purchase it, and “unanimity” rule implies that both members purchase two sets of entitlements if both of them agree to purchase it.

Our prediction was that an individual's WTP remained unchanged, regardless of whether the decision process was individual or committee-based by voting if the individual was self-interested and his or her expected utility function of payoff was characterized by single peaked preferences and determined only by his or her own outcome. The laboratory results rejected our hypothesis. There are three alternatives interpretations to explain about the results. (A) the individual is other-regarding and believes that a decision to donate deteriorates his or her partner's well-being is induced to decrease his or her WTP, (B) the sharing of guilt arises to the individual under the rule of committee decision-making, (C) the individual believes that he or she is not a pivotal voter in committee decision-making and does not have any feeling of responsibility for the decision-making. If the individual's preference is determined by either of (A), (B) and (C), behavior against the standards of morality is promoted.

What institutions or rules should be built to encourage individuals to choose a higher WTP in committee decision-making by voting or behave in accordance with the high standards of morality. We found that as group size increased, subjects chose a higher WTP, which suggests that they were induced to act with high moral standards in terms of the extent of donation (Figure 2).

Figure 2: Average Scores of WTP by Group Size



Note (1): The vertical axis represents “the maximum price an individual can pay for the 50 shots of polio vaccine from the initial endowment (1000 JPY)”. The horizontal axis indicates group sizes. “unanimity” rules imply that all members purchase the all sets of entitlements if both of them agree to purchase it.

Note (2): In Figure 2, we cannot reject the hypothesis the average scores of WTP are different by group sizes. However, we found that the coefficients of group size, 7 and 21 were positive for WTP at the significant level.

This results suggest that an individual who in particular believed that his or her WTP was lower than those chosen by group members was more likely to increase his or her WTP to avoid being a minority member. The feeling of being a minority member was stronger for under the unanimity rule in the larger size of group because he or she was more likely to become a responsible pivotal voter in a group.

Additionally, we focus on the effect of an alternative form of committee decision-making, social institutions of delegation, on people’s “public moral” or “moral” behavior. To do so, we employed the method of “random dictator game”. Each individual decided the maximum money he or she can donate for an education-relevant NPO from the initial endowment (WTP). The experimenter picked up one individual randomly from all participants, and his or her WTP was applied to all other participants. The individual played a role of a pivotal voter. If a point randomly drawn from a given point distribution is lower than the common WTP, all the participant had to donate the drawn point from the initial endowment. Under this design, we found that WTP was larger in individual decision-making than in committee decision-making of delegation. This result suggests that each individual, who became a pivotal voter with probability, avoids to bear the psychological burden of not donating and therefore lowered his or her WTP.

References cited:

Keigo Inukai, Keisuke Kawata, Masaru Sasaki, and Kengo Yasui, 2018, Committee Voting and Moral: Laboratory Experiments, mimeo

Eve Cherry, Kesuke Kawata, Khin New, and Masaru Sasaki, 2018, Moral behavior and voting: Experimental results in the donation society, mimeo

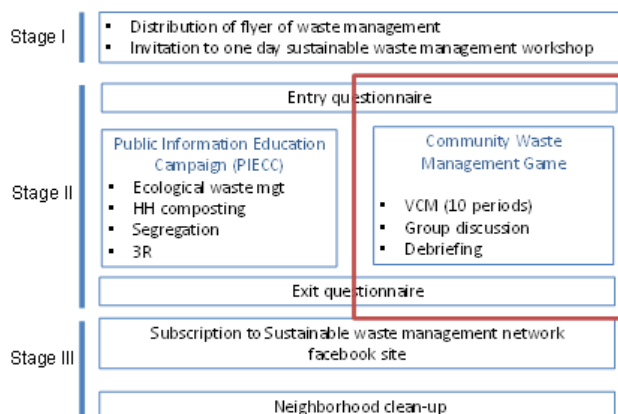
<Field experimental study group>

The key informant interviews, focus group discussions, and household survey reveal the followings. i) most residents are aware of the relationship between improper waste management and flood and health risks, yet ii) they tend to consider local government, rather than individual residents, takes primary responsibility

of waste management, and iii) apparent willingness to pay (WTP) for the improved waste management services tend to be low (Baltazar, Kurokawa and Seki 2017). On the one hand, the local residents perceive the waste collection capacity and frequency provided by the City is insufficient compared to the volume of water generated. But our estimated based on the household survey and key informant interviews suggest that the prescribed weekly waste collection capacity and provision of treatment facility is enough to cover the estimated solid waste generated. Though the care must be taken to interpret these estimates in the light of possible divergence between actual and estimated capacities, the result informs us that the apparent waste problems are, at least partly, lack of coordinated actions and disagreement between individual norms and prescribed rules against improper waste dumping.

To circumvent this disagreement, in the fields experimental study, we focus our attentions on the relationship between internal- and external-return derived from public goods. Considering that people have implicit preference for social efficiency as advocated by Goeree and Holt (2002), and assuming innate preference for social efficiency generally held, we examine the hypothesis that explicating external returns activates innate preference of efficiency and thus promotes pro-social behavior. Figure 3 illustrates the stages of the study and the experimental design.

Figure 3: Design of experimental study to examine the effect of activating the concerns for external return on the contribution behavior



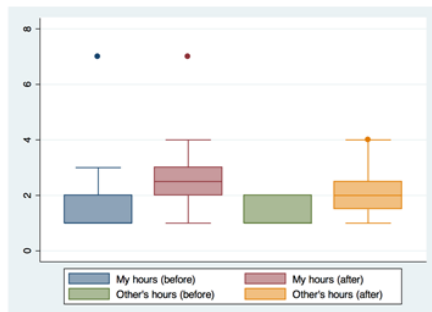
The Public Information and Education Communication Campaign (PIECC) designed by the local government office is used as a control treatment (PIECC workshop, here after) against which the workshop with public game is used as the treatment design (Game workshop, here after). In Game workshop (red framed part of Figure 3), standard public goods game is used to explicate the externalities and collective benefit of community-based waste management actions and to make participants recognize how external returns operates.

Treatment effect of Game workshop is examined by comparing the stated willingness to contribute to collective waste management actions before and after the workshops (difference-in-difference comparison of before and after the workshops between PIECC and Game workshops. Game workshops make small but significant positive increase in the willingness to contribute yet no significant average differences between PIECC and Game workshop. According to the preliminary analysis of the responses to the questionnaires

and eye-balling the transcripts of participants' discussion during debriefing, there seem to be offsetting positive and negative effects of the game experience on the participants' willingness to contribute.

Figure 4 Willingness to contribute to community-based waste management action before and after the Game workshop

How many hours do you or others spend for community waste mgt ?



(Notes) The vertical axis measures the hours that the household members are likely to contribute (per week)..The blue and green figures show mean, median and 5–95% confidence intervals of the responses before the workshop, while pink and orange figures are those after the workshops. Both own and the (expected) others' contributions are significantly higher after the workshops.

#### References cited:

Raltazar, Dalton E., Kurokawa, Kiyoto and Erika Seki, 2017, "Household Waste Production and Disposal: Perception and Behavior of Sampled Households in Barangay Looc, Calamba City", Mimeo, Ritsumeikan University.

Goeree, Jacob K., Charles A. Holt, and Susan K. Laury, 2002, "Private costs and public benefits: unraveling the effects of altruism and noisy behavior", *Journal of Public Economics*, Vol. 83, pp.255-274.

Building on the above preliminary outcomes of the research, the field experimental study group aims to further conducts the following activities

- Development of effective design of the "Community based waste management game" and more detail examination of the effectiveness for awareness raising.
- Development of debriefing by means of laboratory experiments involving local university students as participants.
- Horizontal and vertical extensions out-reach activities including neighboring lake shore communities, and up-stream communities.