

RF-077 Inter- and Intra-generational Risk Trade-Off and Sustainability (Abstract of the Final Report)

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[Abstract]

This study attempts to understand people's preference toward reducing global environmental risks, and considers realistic policy options in the long run. Our main findings are threefold. First, stated preference methodology based on survey questionnaire can have significant meaning for constructing foundation of global environmental policy. Second, people have various preferences toward intra-generational risk trade-offs. Third, changing the default setting of current institution can have significant impact to raise the individual willingness to donate to the green energy fund.

1. Introduction

It has been an important issue what kind of principles can help manage global environmental risks such as climate change and persistent organic pollutants. Although sustainable development is a strong candidate for the principle, it is not an operational concept to be applicable to real-world policy. While economists have developed pragmatic tools such as benefit-cost analysis to evaluate efficient resource allocation for reducing environmental risks, most attempts concentrated on evaluating current generation's preferences to reduce their own environmental risks. Only few studies have treated inter-generational risks between current and future generation, and intra-generational risks between developed and developing countries. It is important to understand what kind of concept can be moral underpinnings for global environmental policy by observing people's perception, and to consider alternative strategy to fill the gap between perception and behavior.

2. Research Objective

Aim of this study is to develop a new evaluation method based on stated preference approach such as conjoint analysis and contingent valuations, and to suggest a pragmatic strategy for global environmental policy in the long run.

Sub theme 1: Economic theory of sustainable development

From the economic viewpoint, we consider what kind of moral perception exists behind the evaluation of global environmental policy and how a resource allocation based on these morals can lead to sustainable development.

Sub theme 2: Analyzing and Managing inter- and intra-generational risks

We examine several inter- and intra-generational risk trade-off, and suggest principles to manage these situations.

Sub theme 3: Development of evaluation method based on conjoint analysis

We develop new evaluation method based on conjoint analysis, and analyze people's preference toward risk trade-off between current and future generations and between developed and developing countries.

3. Conclusion

Current debate that begins with Stern's review on economics of climate change (2007) suggests that valid discount rate should be normatively and empirically supportive. Estimating discount rate based on survey questionnaire can be a solution, since it asks peoples normative perception and observe empirical choice on policy alternatives (Rachlin and Jones 2008, Viscusi and Huber 2006). From the result of conjoint analysis, we find that average Japanese citizen's priority for reducing mortality is, from the top to the bottom, Bangladesh, Kenya, Nigeria, and Honduras. Furthermore, we have investigated people's intention for contributing green energy fund by using contingent valuation method. We found that changing the default setting of current institution can have significant impact to raise the individual willingness to donate to the green energy fund.

We also consider that ability of perception toward time and distance by human nature is significant for policy toward sustainable development. We have surveyed theoretical and empirical background papers from economics, psychology, and neuroscience. These researches are highly important for constructing hypothesis for modeling the discounting function and developing questionnaire that are used in our survey.

The result of empirical estimation shows that coefficient of cross term between timing and population size of poverty reduction is negative, and it is positive when timing is squared. It implies that the delay in helping a person can decrease utility, although its effect gets marginally smaller. This approach is applicable for evaluating the various timing of the policy.

References

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Major Publications

None