【Grant-in-Aid for Scientific Research (S)】

Reconstructing Behavioral Economics through Social Implementation

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Purpose and Background of the Research

●Outline of the Research

Behavioral economics expands traditional economics by incorporating psychological and sociological motivations into assumptions about human preferences. This has enabled new policy tools beyond taxation and subsidies, such as "nudges"—interventions like providing information and designing choice architectures—now widely implemented worldwide.

Our research group, under the "Policy Applications of Behavioral Economics" (Grant-in-Aid (S)), has applied nudges in Japan across various fields, including health, disaster prevention, crime prevention, finance, labor, and education, evaluating their effectiveness. Through this research, we confirmed that loss aversion-based messages often have short-term effects and can impose psychological burdens. In contrast, social norm messages (informing individuals about majority behavior) and altruistic messages (highlighting prosocial impacts) have been particularly effective in Japan.

To advance behavioral economic policy, we will systematically analyze loss aversion and social norms using economic experiments, refining these insights into mathematical theoretical models. By integrating findings from real-world applications, we aim to identify unresolved challenges in behavioral economics and further elucidate fundamental behavioral tendencies in individuals and society.
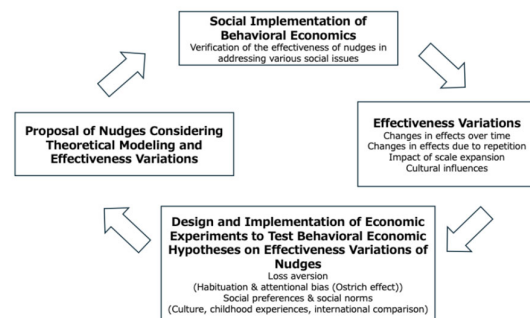

Figure 1. Illustrative Diagram of Research Process

●Research Methodology

This study will:
1. **Evaluate Nudge Effectiveness in health, environment, disaster prevention, crime prevention, labor, and education** through randomized interventions and controlled experiments.
2. **Analyze Behavioral Challenges** by designing experiments to identify causes and tracking individuals to assess nudge effectiveness over time.
3. **Develop Theoretical Models** to enhance predictions and refine behavioral economic frameworks. (See Figure 1).

●Addressing Skepticism Toward Nudges

Skepticism about nudges focuses on two issues:
1. Doubts about behavioral economics concepts, such as loss aversion measurement.
2. Uncertainty about nudge effectiveness.

A review of studies shows loss aversion is replicable in experiments, while present bias appears in non-monetary but not monetary rewards. Our research indicates that loss-aversion-based nudges lose effectiveness with repetition. To determine why, we will test whether:
- Loss sensitivity declines with repetition, or
- The Ostrich effect (avoiding loss-related information) plays a role.

Clarifying this will guide when to use loss- or gain-framed messages in nudges. If nudges fail, we will examine whether cognition and beliefs remain unchanged or if only behavior is affected. We will also analyze how individual and cultural factors influence nudge effectiveness. These insights will help address global challenges in behavioral economics.

Expected Research Achievements

●Social Implementation of Behavioral Economics and Its Effectiveness Evaluation

[Health & Medical] We will develop and evaluate nudges for infectious disease control, such as vaccine uptake, infection testing, and health checkup participation.

[Environment] We will design nudges to disseminate scientific knowledge on radiation health risks after the Fukushima nuclear accident and combat discrimination. Additionally, we will develop nudge messages to reduce CO_2 emissions, addressing the gap between beliefs and actions.

[Financial Regulation, Education, & Consumer Protection] We will explore behavioral economic approaches to financial product labeling, improving advertising regulations and financial education. We also theoretically show that companies exploiting consumer biases can persist in the market, highlighting the need for regulation to prevent the misuse of behavioral economics.

[Education] We will analyze COVID-19's impact on non-cognitive and cognitive skills, early childhood education, learning environments, family background, and school absenteeism.

[Disaster Prevention] We will study nudge messaging for disaster preparedness, focusing on evacuation promotion in tsunami-prone areas.

[Crime Prevention] We will develop and evaluate nudges for crime prevention, such as countermeasures against fraud and voyeurism.

[Labor] We will conduct behavioral economic analyses on work style reform and competition preferences, contributing to policies that reduce gender disparities and improve labor practices.

● Evaluating Loss Aversion in Behavioral Economics

Loss aversion is widely observed in experiments, but loss-framed nudges lose impact quickly and cause psychological burdens. We will test whether this is due to habituation, the Ostrich effect (avoiding distressing messages), or memory-based forgetting.

● Theoretical Modeling of Newly Identified Behavioral Economic Traits & Policy Implications

New insights will be formalized into models to guide behavioral economics implementation and consumer protection. We will validate them through experiments and panel data analysis for policymaking.