Byunghun Hahn

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Education

2024–present	**Seoul National University** Master's Student, Department of Economics
2018–2024	**Seoul National University** B.A. in Economics, *Summa Cum Laude*
2020–2021	Sergeant, Military Service in the Korean Army

Articles

1. **[Co-Author]**

   Rationality-Based Preference Aggregation (with Syngjoo Choi, Booyuel Kim, Minseon Park, Yoonsoo Park, Euncheol Shin / work in progress)

   We study three fundamental questions on group decisions: (1) Does group rationality originate from individuals' rationality? (2) Are members' risk preferences reflected in group decisions? (3) Does the more rational individual exert greater bargaining power? In our experiment, the subjects made choices over a consumption bundle on a linear budget set, 18 times in isolation, and 18 times in pairs. We use a non-parametric revealed preference approach to measure individual rationality. Several results emerge from our analysis. First, we observe strong evidence for rationality extension and preference aggregation. Second, the more rational individual exerts greater bargaining power. Specifically, group decisions are closer to the preferences of the more rational individual, both in terms of rationality and risk preferences. We propose a non-parametric revealed preference index to measure individual bargaining power in group decisions and validate it through numerical simulation.

2. **[Single-Author]**

   Better or Worse? Biased Decisions from Human–Machine Collaboration (work in progress) **Link**

   Korea Baseball Organization (KBO) introduced the replay review system to improve the accuracy and fairness of umpire decisions in 2014. However, our empirical results show that the winning probability of the home team has significantly increased after the implementation, which implies that the introduction of the video review system deteriorated the fairness of the umpires' decisions. The main reason for these unexpected phenomena is that the replay review is only conducted upon a team's request, and each team is allowed a maximum of two requests. Our theoretical model shows that umpires have asymmetric incentives in decision making, as they are much more afraid of having their original decisions overturned when those decisions are unfavorable to the home team. This gives an implication on the situation where the decision-making is being made by humans as well as machines. It may be expected that better decision making is possible when humans get help from machines. However, under an imperfect system design, the introduction of machines may distort human incentive and the decision-making process.

3. **[Single-Author]**

   Are Young Criminals Rational? (work in progress) **Link**

   We develop a model in which individuals accumulate two types of human capital: legal and crime-specific, both of which grow through learning by doing. Juveniles in their final year before losing juvenile status anticipate higher future costs of crime, giving them an incentive to shift effort toward legal work. The model therefore predicts that individuals on the verge of this transition are more likely to desist from crime even before reaching the age of criminal majority. Using FBI arrestee data, we empirically validate this prediction. Exploiting policy changes in four states that raised the age of criminal majority from 17 to 18, we find causal evidence that juveniles in their final year while legally treated as juveniles commit fewer crimes than comparable age groups.

4. **[Single-Author]** supervised by Prof. Jungmin Lee (Undergraduate Independent Study Program)

   Evaluating the performance of different high school types: Based on the change of Korean University Entrance System (Written in Korean, Awarded Undergraduate Independent Study 2024 at SNU)

   In Korea, there are two types of university entrance systems: Jeongsi, based on a single Korean SAT score, and Susi, based on three years of high school grades.

Starting from 2022, Korea increased the proportion of Jeongsi from 23% to 40%. We examine the impact of this policy by analyzing Seoul National University acceptance rates from 2018 to 2023 across different types of high schools. The results show that high schools in wealthy areas, the three Gangnam districts, saw a significant increase in acceptance rates. In contrast, specialized high schools did not experience a notable increase, and non-metropolitan high schools saw a decline.

5. **[Single-Author]**

   Calculating the Difficulty of Platform Change (Preliminary)

   We consider various network structures and show that the acceptability of a new platform greatly depends on the structure of the existing network. Theoretic Analysis indicates that in the past where people were mostly engaged in a small local interaction, it can be easier to accept a new superior platform. Also, We show that unequal power distribution inside a network and the existence of an influencer would make the acceptance of a new superior platform easier.

RA Experience

1. **Rationality Extension, Preference Aggregation, and Pareto Efficiency of Group Decision under Risk (Syngjoo Choi, Booyuel Kim, Minseon Park, Yoonsoo Park, Euncheol Shin)**

   Research Assistance, Feburary 2025-present (Data Analysis)

2. **The Impact of Idea-Creating Classes on the Development of Creativity (Syngjoo Choi, Sejik Kim)**

   Research Assistance, 2023-2024 (Survey Data Collection and Analysis)

3. **Impact Evaluation of Seoul Safety Income Project (Hyuncheol Bryant Kim, Jugmin Lee, Sangyoon Park, Hankyoung Sung)**

   Research Assistance, June 2024-present (Data Analysis)

4. **The Impact of Inter-Village Competition on Collective Action: Experimental Evidence from Myanmar and Cambodia (Syngjoo Choi, Yoonjei Michell Dong, Booyuel Kim, Taejong Kim, Hee-Seung Yang)**

   Research Assistance, September 2024-present (Data Analysis)

TA Experience

1. Dynamic Macroeconomics (2024 Fall, Prof. Sejik Kim)

2. Microeconomics (2025 Spring, Prof. Syngjoo Choi)

3. Behavioral Economics (2025 Fall, Prof. Syngjoo Choi)

Awards

1. 2024, Seoul National University Undergraduate Independent Study Award, "Evaluating the performance of different high school types: Based on the change of Korean University Entrance System"

Computer Skills

Python (Econometric Analyses, Web Crawling, Machine Learning, Simulation)

Stata (Econometric Analyses)

R (Econometric Analyses, Visulaization)

Language Skills

English (Fluent), Korean (Native)