# The Workshop on the Frontiers of Statistical Analysis and Formal Theory of Political Science

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Abstracts

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Decomposing Voter Preferences over Politicians' Personal Attributes Across Electoral Systems: Evidence from a Conjoint Survey Experiment in Japan

Many scholars have claimed that voters care about the personal attributes of politicians who represent them, particularly under certain electoral systems. Yet, none has rigorously studied which particular personal attributes are more valued by voters or what representational contexts induce voters to value some attributes more than others. To answer these questions, we use an online survey experiment on eligible voters in Japan, in which respondents compare and choose from randomly generated profiles of hypothetical politicians varying in multiple personal attributes – a survey experiment design known as conjoint analysis. In addition, our survey design asks respondents to evaluate hypothetical politicians under the four different types of electoral rules used to elect Japan's bicameral parliament. The conjoint format of our experiment allows us to examine which personal attributes cause changes in respondents' preferences more than others, as well as whether the relative importance of these attributes differs according to the electoral rule or chamber.

勝又裕斗(東京大学)

Malapportionment and Redistribution: Evidence from a Regression Discontinuity Design

This study investigates the causal effects of malapportionment on redistribution. Malapportionment distorts the incentives of politicians and accordingly political consequences. I utilize the regression discontinuity design (RDD) to estimate the causal effects of malapportionment on intergovernmental fiscal transfers. The Japanese Lower House elections have adopted the mixed-member majoritarian system since 1996, where the number of single-member districts is allocated first to the prefectures according to their population and then district boundaries are drawn in each prefecture. The number of seats per capita in prefectures is discontinuous at some cut-off points. Moreover, since prefectures near these cut-offs carefully draw the district boundary to avoid additional malapportionment, district-level malapportionment is almost the same as prefecture-level malapportionment in such prefectures. This mechanism enables us to estimate the causal effects of malapportionment on redistribution with a fuzzy RDD. I expect that malapportionment does cause the distorted fiscal transfer in favor of overrepresented municipalities.

# 福元健太郎 (学習院大学)

### Gender Gap in Voter Turnout by Moon Age: A Circular Data Analysis

Gender gap in political behavior and attitude is a well-studied topic in political science. Studies have found that the gender gap in voter turnout varies with female labor force participation, resources, mobilization, and political engagement. To these determinants of the turnout gender gap, this paper adds the age of the moon by exploiting a natural experimental setup of the Japanese local election timing. The present article focuses on municipal elections of mayors and assemblies in the electoral cycle between April 1999 and April 2003 and regresses gender gap in voter turnout on the age of the moon by using a linear-circular model. Note that many idiosyncratic factors of elections are canceled out by differentiating turnout between both sexes for every election. Importantly, the dates of these elections are almost uniformly distributed across the country for historical reasons (Fukumoto and Horiuchi 2011, Fukumoto and Ueki 2015), and can be regarded as exogenously determined. On average, women are more likely to vote than men by 2.8 percentage points. This gender gap in voter turnout is larger in a day with a new moon than in a day with a full moon by 0.4 percentage points, or 15% of the average gap. The results imply that natural phenomenon such as the lunar cycle has an effect on political behavior.

森田果 (東北大学)

#### Criminal Prosecution and Physician Supply

While there are many evidences of the effect of medical malpractice tort, researches on the effect of medical malpractice criminal sanctions are rare. This paper tries to identify the causal effect of criminal prosecution utilizing exogenous variations over the likelihood of criminal prosecution. In 2004, a medical accident occurred in Fukushima prefecture, Japan, and an obstetrician was prosecuted. This prosecution exogenously changed the likelihood of criminal prosecution in Fukushima prefecture. Using difference-in-differences strategy and synthetic control strategy, we estimate its causal effect on physician supply. The prosecution decreased the number of obstetricians by 12% and some of them changed their business to gynecology, which involves lower risk. However, the effect is concentrated on obstetricians, not all physicians. In addition, the paper shows that the sentence of acquittal did not resolve the effect caused by the initial prosecution. This illuminates the importance of criminal prosecution itself.

## 三輪洋文

Do Reshuffles Improve Government Popularity? Evidence from a Natural Survey Experiment

Recent scholars have argued that prime ministers reshuffle their cabinet strategically. Although scholars have assumed that cabinet reshuffles help the prime ministers shore up government popularity, this assumption has not yet been formally tested. In Japan, when asking cabinet approval after reshuffles, some polling firms sometimes provide respondents with cues of the reshuffle while others do not. I utilized this fact as a "natural survey experiment" to test the assumption. Applying a dynamic linear model to pooled poll data from 2001 to 2015, I attain high internal, external, and ecological validity. Analyses shows that cues of reshuffles increases cabinet approval rating by 2.5 percentage points on average and that the credible interval of the effect did not include zero. The result reinforces the previous work on the theory of cabinet management. Implications for the study of public opinion and survey methodology are also discussed.

# 安藤道人(国立社会保障・人口問題研究所)

Identifying Strategic Interaction in Municipality-based Public Health Insurance: Evidence from A Boundary Reform

This paper considers whether strategic interaction occurs in the setting of premium levels in a municipality-based public health insurance scheme (Citizens' Health Insurance, CHI) in Japan. To uncover the causal effect of strategic mimicking behavior among neighboring municipalities, we exploit the fact that CHI premium levels sharply dropped when municipalities experienced municipal amalgamation during the Heisei Great Amalgamation, which took place during mid-2000s. Utilizing the incidence of adjacent amalgamation as an instrumental variable and clarifying identifying assumptions with directed acyclic graphs (DAGs) and the principal stratification approach, this paper investigates how premium levels in adjacent amalgamated municipalities affect a premium level in non-amalgamated municipalities. Results suggest that there is no significant mimicking behavior in the setting of CHI premium levels in the subgroup of non-amalgamates during the Heisei Great Amalgamation.

山内 創一朗 (東京大学)

Media Coverage and Voter Learning: Analysis of Text Data from US Local Newspapers

Studies in political communication have long discussed the role of media as a provider of political information to voters. The shared notion is that media report increases political knowledge of citizens and subsequently increases participations into the political process. This inference is, however, mostly drawn from count data of politicians' media appearances. I argue that existing studies miss the important aspect of media coverage: what is actually reported matters. To support this argument, I apply a topic model, an extended version of LDA, to data of more than 10,000 articles from US local newspapers. The articles in the data span from 2010 to 2012 and mention names of the representatives. The model recovers latent topic distributions and topic trends in the corpus. I, then, combine the result with survey data with residential information to investigate the relationship between the content of coverage and the voter's evaluation of the representatives.