

Milestone 7

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0.1 Replication Paper Overview: *Identifying voter preferences for politicians' personal attributes: a conjoint experiment in Japan*

Introduction:

In Yusaku Horiuchi, Teppei Yamamoto and Daniel Smith's (2020) paper, they conclude from the difference between their conjoint survey results and observational data that Japanese voters' voting preferences are dependent on external factors such as party recruitment. They explored the effect of a candidate's gender on their electability likelihood and its interaction with other variables, such as awareness of Japan's electoral groups. While it is commonly established that the personal attributes of political candidates do have an impact on voter choice, as they portray in their literature review, they also highlight the fact that certain traits' interaction effects may provide for an explanation for why candidates were chosen (Yusaku Horiuchi (2020)). For example, men were "awarded" more for political experience than women, which may explain the severe lack of female representation despite the consistency in gender preferences from the conjoint survey (Yusaku Horiuchi (2020)). They conducted conjoint analyses involving Average Marginal Component Effects (AMCEs) and Average Component Interaction Effects (ACIEs) to determine the effect of different variables on candidate selection likelihood, and whether said variables interacted with each other in which ways.

Literature Review:

They were also interested in the complexities introduced by the interaction between desired personal attributes and characteristics of election systems. For example, Rule and Zimmerman (1994) found that proportional representation (PR) systems tended to do better in terms of gender parity than first-pass-the-post systems (Wilma Rule (1994)). Additionally, systems that emphasize voting for a candidate as opposed to voting for a party lend more salience to candidates' personal attributes, giving their attributes' desirability (or lack thereof) more weight in the eyes of the voter (JH and DM (2017)). As such, Horiuchi et al. (2020) wanted to tease out this relationship: Did Japanese voters really prefer male candidates over female candidates at the baseline, or was this preference influenced by characteristics of the system?

Japan is a useful case study because of its high "intra-country variation" in electoral systems (Wada (2004)). Horiuchi *et al.* (2020) tested for whether knowledge of said electoral systems would impact voter preferences using a randomly assigned experiment, and found that there were significant and consistent indications of voter preferences even without priming with knowledge of electoral systems (Yusaku Horiuchi (2020)). They conducted a conjoint survey, in which different candidate attributes were completely randomized and presented for a participant to choose the candidate of their choice. This method of conjoint experiments as applied to political science was popularized by Hainmueller *et al.* (Jens Hainmueller (2014)). Another method employed in the replication paper was compared observational data of actual politicians to the conjoint experiment results. This comparison revealed that the actual representatives in Japan's parliament are very different from the "ideal" candidates of the participants, demonstrating that other variables that weren't captured in the conjoint experiment play a large role in elections, such as party candidate recruitment systems (Yusaku Horiuchi (2020)).

Horiuchi *et al.* also checked the conjoint data against the actual data of real elected politicians and drew conclusions from the similarities and differences expressed in terms of preferred candidate attributes. Additionally, there were controls for knowledge priming in their conjoint experiment. A control group had no sort

of priming about Japan’s electoral systems, whereas a treatment group was primed with knowledge about Japan’s electoral systems (such as the relationship between voting for a party and proportional representation). They found that there was only one of 56 statistically significant differences in attribute preferences. However, interestingly enough, the actual observations of elected candidates do reveal that there is a discrepancy in the type of candidate elected when constituents are aware of how electoral systems function versus when they are unaware. Diving deeper into the gap between the experimental and observation data, I will apply Leeper *et al.*’s (2019) `cregg` package to the dataset, which provides for calculating marginal means rather than average marginal component effects (Thomas J. Leeper (2019)).

According to Leeper *et al.* (2019), a flaw with interpreting “differences in conditional AMCEs as differences in underlying preferences” exists because of how the subgroups that are being compared are chosen, and whether there are any meaningful *absolute* differences (Thomas J. Leeper (2019)). Finding the marginal means, then, are useful because there are no baseline values for comparison, but rather allows all variable levels to be compared in a relative sense. In the extension section of this paper, you will be able to view the marginal means graph and compare them to the AMCE charts.

Appendix: Below, please find a replicated graphic that displays the difference in average treatment effects of certain variables based on a politician’s gender (*Fig. 1*). *Fig. 2* displays 8 mosaic plots, the likes of which can be found in the Appendix. *Fig. 3* is a replication of the co-correlation matrix that determines the correlation between two different variables, as many variables such as age, gender, celebrity status, family political ties, occupation, party, education, etc. were examined. *Figs. 4 & 5* relate to the extension of the paper, which takes a look at marginal means instead of the metric of AMCEs. All analysis for this paper, while it is still in progress, can be found at the working Github repo.¹

I would also like to clarify which findings of the paper I was able to replicate. The main findings, which present themselves in the form of the conjoint AMCE charts pictured directly below, were able to be replicated, as well as the mosaic and co-correlation matrices of the paper. Charts not include in this replication are additional mosaic plots, since the original Appendix had many based off of variables other than age and gender.

¹Working repository can be found here: <https://github.com/caievelyn/milestone>

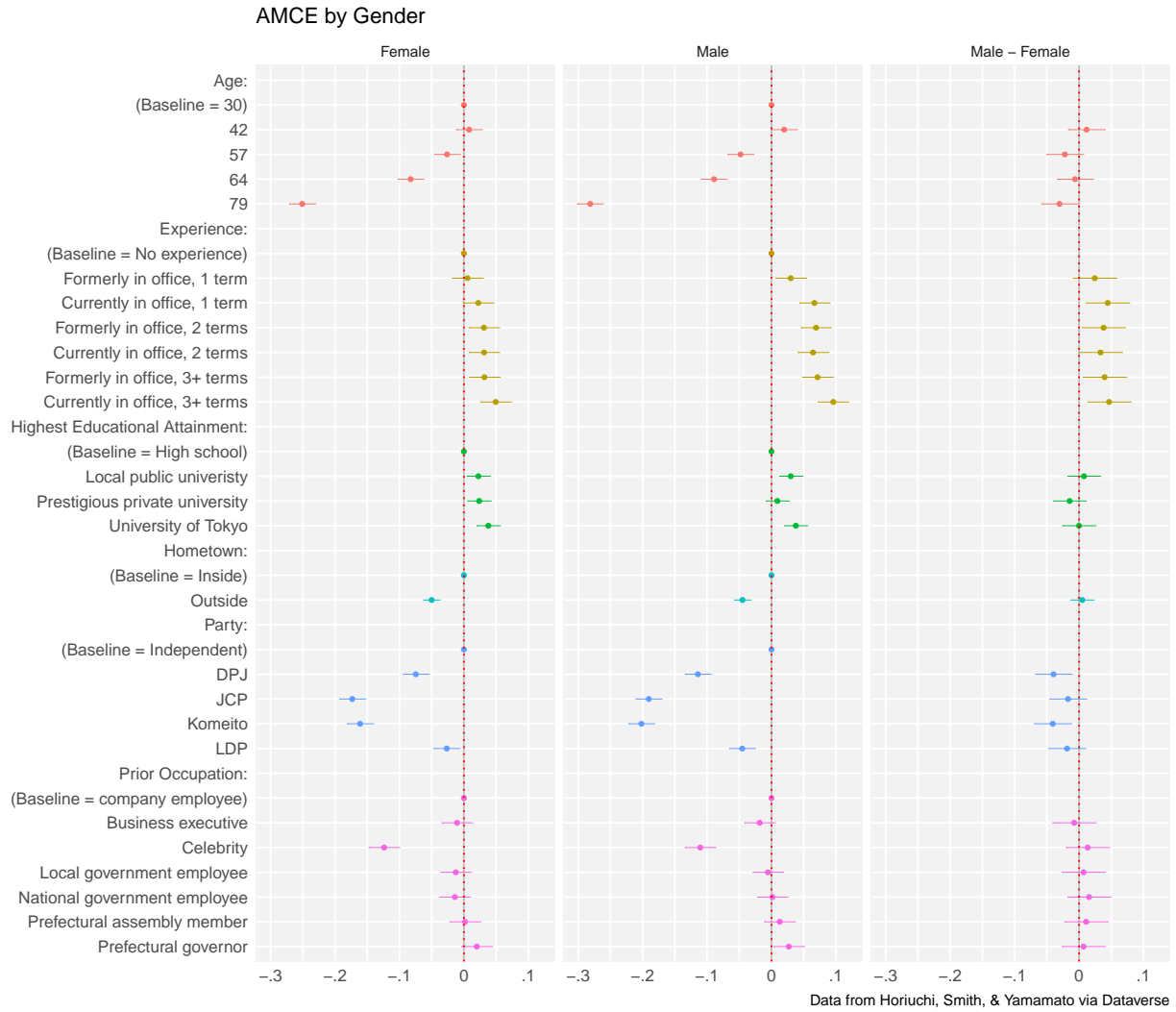
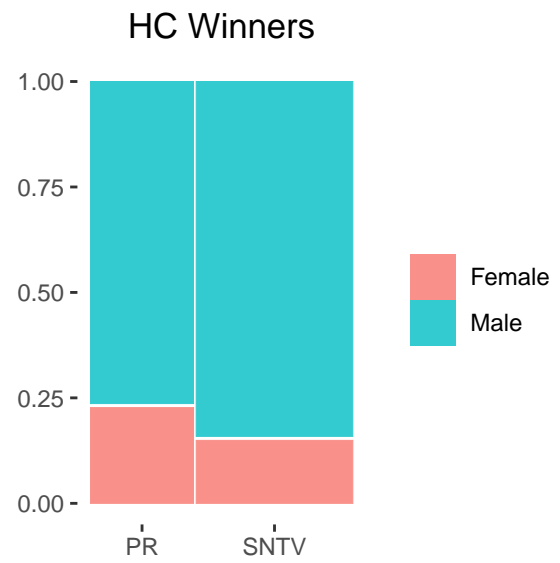
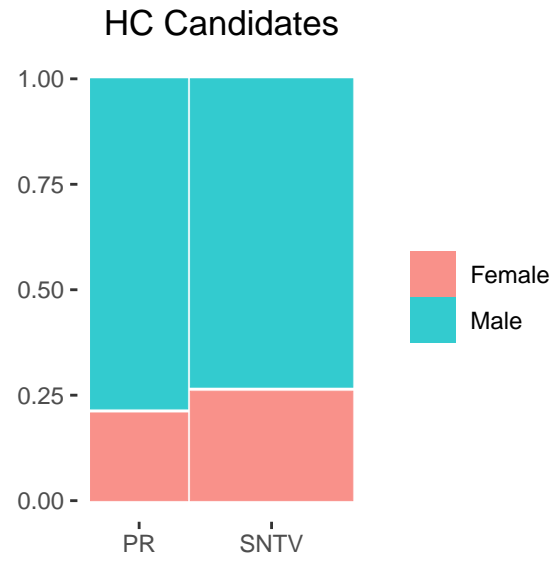
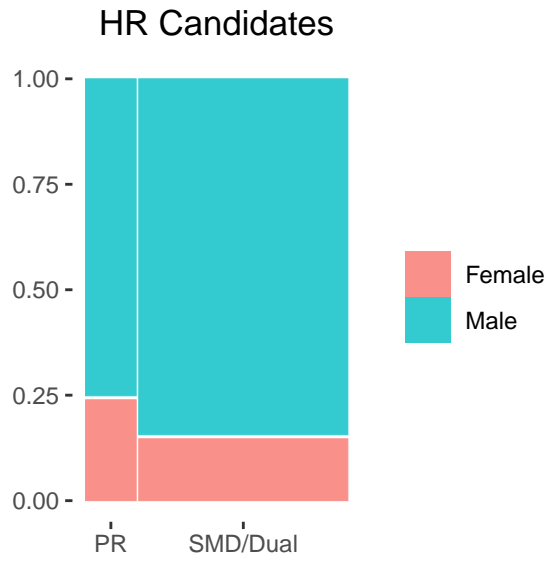


Figure 1: The first two columns on the left display the average treatment effects for different variables, keeping the gender of the candidate constant. The third column displays the difference in average treatment effect, subtracting that of males to that of females. As you can see, party and age have large effects on candidate selection. However, when taking the different in AMCEs, there is no substantial difference between traits that are desired in male and female candidates. The average treatment effect can be interpreted as the ‘boost’ a certain characteristic gives a candidate; negative values indicate hurting the candidate’s chances of being chosen, while positive values reflect desirable traits.



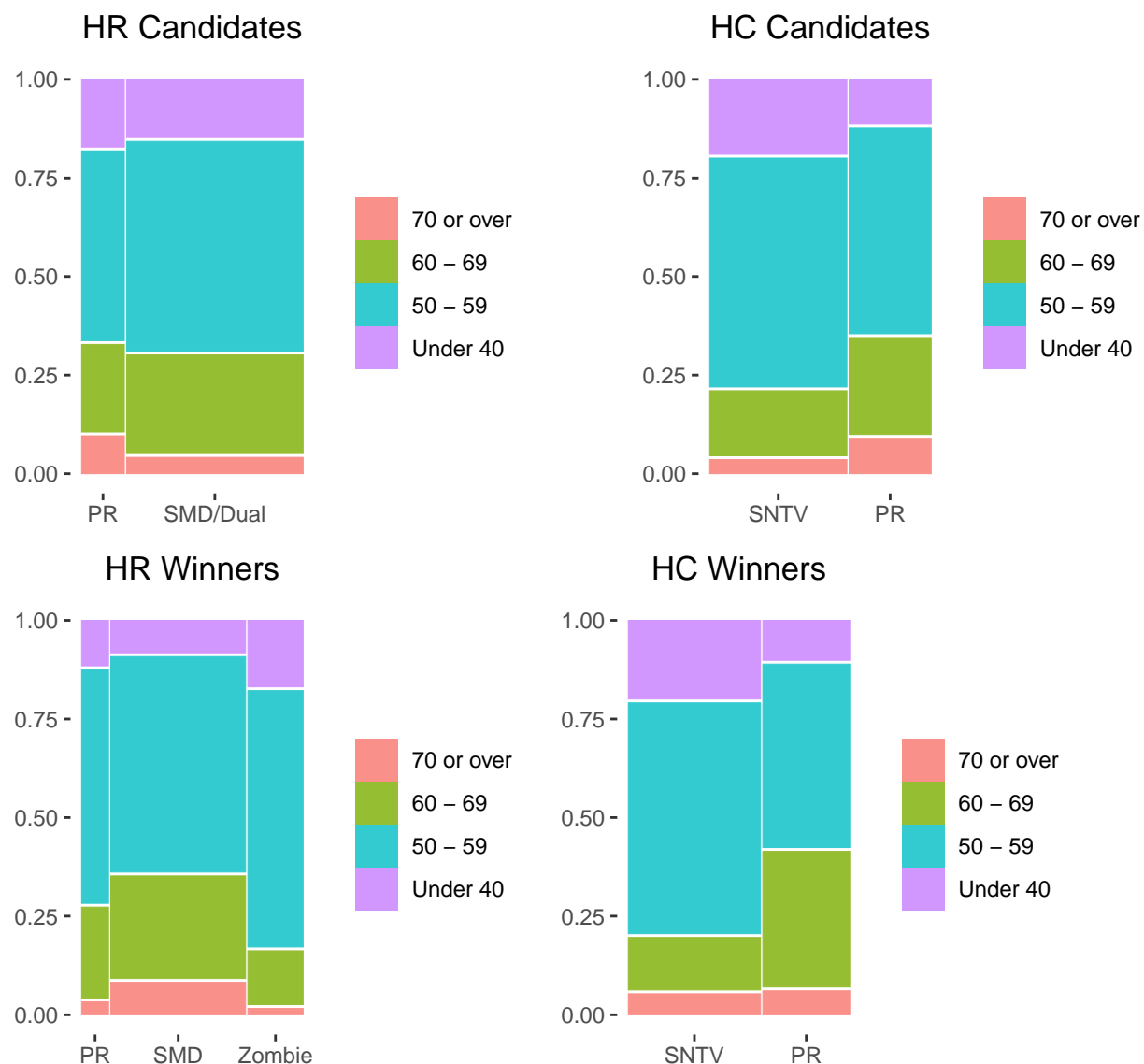
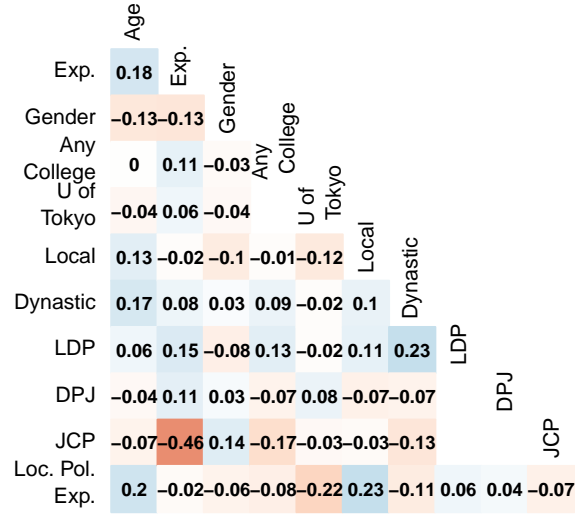


Figure 2: The above eight mosaic plots subset by gender and age. HR represents House of Representatives, the lower chamber of Japanese parliament, whereas HC represents the House of Councillors, the upper chamber of Japanese parliament. The figures also compare the share of candidates that ran in SNTV (multi-member)/PR districts versus the proportion of winners from either district.

HR Winners



HC Winners

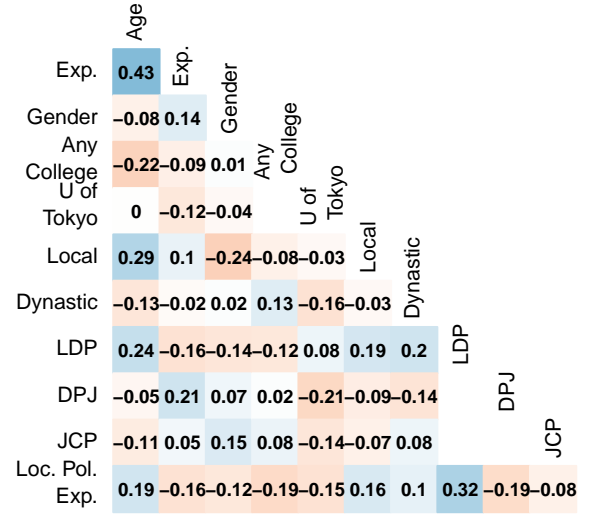


Figure 3: Co-correlation matrix providing the correlation coefficients between two variables. Negative values are shaded in red and positive values are shaded in blue. The intensity of the color corresponds to the magnitude of the correlation coefficient.

0.2 Extension of the Paper:



Figure 4: The top graphic displays the marginal means graph. As you can see, notable differences between the genders include the effect of political experience. Interestingly, in the marginal means graph (we shall denote them as MM graphs), the baseline of “No experience” seems to punish men more so than women. This is interesting because women are more likely than men to be part of dynastic political families, and supports the notion that young first-timer female candidates hit a so-called “bamboo ceiling” as their political careers lengthen, according to Horiuchi *et al.* (Yusaku Horiuchi (2020)).

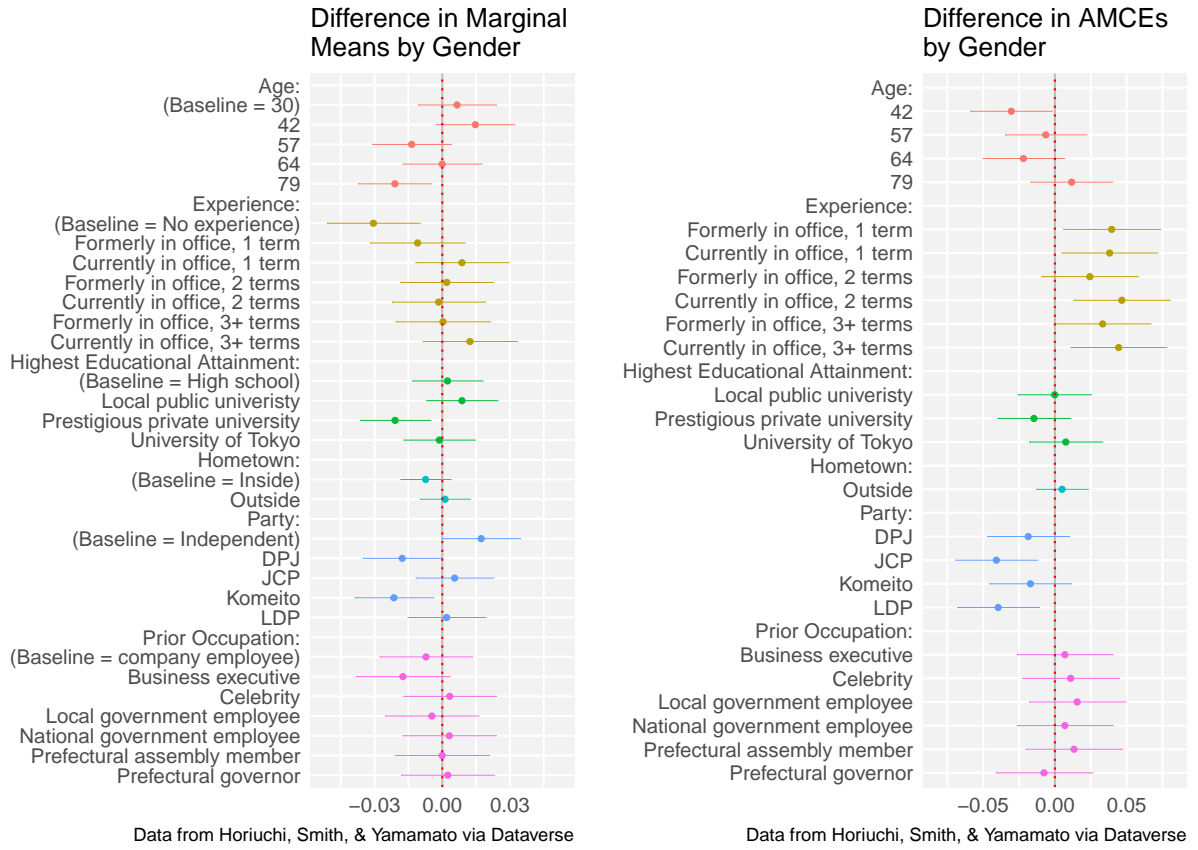


Figure 5: Side-by-side comparison of the marginal means differences graph and the difference in AMCE graph.

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Yusaku Horiuchi, Teppei Yamamoto, Daniel M. Smith. 2020. “Identifying Voter Preferences for Politicians’ Personal Attributes: A Conjoint Experiment in Japan.” *Political Science Research and Methods* 8 (January): 75–91. <https://www-cambridge-org.ezp-prod1.hul.harvard.edu/core/journals/political-science-research-and-methods/article/identifying-voter-preferences-for-politicians-personal-attributes-a-conjoint-experiment-in-japan/95ADB2B43C5289ECFE6898B7FE776CFE>.