Does the Age of Legislators Matter to their Representational Behavior? Evidence from Hong Kong

Online Appendix 1

Our study uses the Bayesian approach for the following reasons. First, the Bayesian approach is strong in estimating complex dependency structures (Bürkner, 2017). In this study, there were a total of 137 legislators participated in 1 to 5 legislative sessions. Among the 304 observations, 225 were members of one of the 20 political groups in Hong Kong, and 79 were independent. There were possible correlations between the same legislator who participated in different legislative sessions, legislators in the same session, and legislators from the same political group. Considering the multilevel data structure, we treated legislators, legislative sessions, and affiliations with political groups as random effects in the model (e.g., we allowed the correlation between the same legislator in different legislative sessions). These models could not obtain reliable estimations under the traditional frequentist approaches (i.e., maximum likelihood). For example, when using the most famous package for multilevel models in R namely lme4, the models could not converge. However, under the Bayesian approach, all models converged (Rhat < 1.01) with effective sample size of at least around one thousand for the coefficients, indicating the robustness of the Bayesian approach in estimating complex models. Second, the Bayesian approach provides a straightforward interpretation of the results. Results of the Bayesian models are based on the posterior distribution, which shows the degree of belief in the estimates after the data are considered (Kruschke and Liddell, 2018). Finally, the reason for using the zero-inflated model is that the beta distribution is only suitable for modeling data in the open interval (0, 1). As our dependent variable included 0, the zero-inflated beta model, a mixed continuous-discrete distribution, was used (Ospina and Ferrari, 2010).