Using the data extracted from online networks for election prediction is often criticized as having a solid demographic bias, referring to a well-known phenomenon that participation in online networks is strongly affected by users' age, sex, education level, race, income level, etc. (Mislove et al. 2011; Sloan 2017; An and Weber 2015; Cohen and Ruths 2013; Filho et al. 2015; Barbera 2016; Olteanu et al. 2019; Sen et al. 2020). Therefore, to deal with demographic bias, recent research has more increasingly utilized the multilevel regression and post-stratification method (MRP), which is based on an adjustment of every possible combination of characteristics according to their actual representations in the population (Lax and Phillips 2009; Park, Gelman and Bafumi 2004; Gelman 2007; Gelman and Litte 1997). The method has been developed to predict national-level data by non-representative polls or data for smaller areas from representative surveys (called small area estimation).

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