



Social networks and citizen election forecasting: The more friends the better

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ABSTRACT

Most citizens correctly forecast which party will win a given election, and such forecasts usually have a higher level of accuracy than voter intention polls. How do citizens do it? We argue that social networks are a big part of the answer: much of what we know as citizens comes from our interactions with others. Previous research has considered only indirect characteristics of social networks when analyzing why citizens are good forecasters. We use a unique German survey and consider direct measures of social networks in order to explore their role in election forecasting. We find that three network characteristics – size, political composition, and frequency of political discussion – are among the most important variables when predicting the accuracy of citizens' election forecasts.

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1. Introduction

In most elections, the majority of citizens are able to predict the election winner correctly, regardless of who they plan to vote for (Lewis-Beck & Skalaban, 1989; Lewis-Beck & Tien, 1999; Miller, Wang, Kulkarni, Poor, & Osherson, 2012; Murr, 2011, 2015, 2016). Most US citizens typically predict correctly not only which presidential candidate will win their state, but also who will win the presidency (e.g., Graefe, 2014); and most British citizens are usually correct about both which party will win their constituency and which will garner a parliamentary majority (e.g., Lewis-Beck & Stegmaier, 2011; Murr, 2016). How do they do it?

A small body of work suggests that social networks are a big part of the answer. Since much of what we know as citizens comes from our social networks (e.g., Huckfeldt & Sprague, 1995), we base our election predictions – like so

many of our beliefs – on information from other people in our network (Lewis-Beck & Tien, 1999; Meffert, Huber, Gschwend, & Pappi, 2011; Uhlaner & Grofman, 1986). However, previous studies on social networks and citizen forecasting accuracy have been hampered by the lack of direct measures of social network characteristics, relying instead on indirect or proxy measures. For example, Lewis-Beck and Tien (1999) find that people with higher levels of education are better able to predict who will win. This is probably because people with higher levels of education are more likely to develop skills in acquiring and processing information. These authors also intimate that a person's level of education tells us something about the size of their network, with more educated individuals possessing larger networks. Meffert et al. (2011) and Uhlaner and Grofman (1986) use electoral differences between the citizen's electoral district and the national level to capture the network's partisan composition indirectly, because the surveys that they use do not collect measures of social network party leanings. However, these indirect measures may miss important aspects of the effect of social networks on citizen forecasting.

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This study uses direct measures of citizens' network sizes and compositions, along with other network characteristics, in order to build a more complete model of citizen forecasting. Using a unique cross-sectional survey that collected both citizen election forecasts and direct measures of several social network characteristics in Germany in the autumn of 1990, we demonstrate that social networks have as much predictive power of citizen forecasting accuracy as the predictors identified as most important by previous research, namely vote intention and political interest. In addition, we show which social network characteristics have predictive power for influencing election forecasts (size, political composition, and frequency of discussion) and which do not (heterogeneity and level of expertise). In addition, we also provide guidance for future surveys as to what network measure to include in order to improve the accuracy of citizen election forecasts. Using a cross-validation exercise, we demonstrate that a single, abbreviated measure of the network size improves out-of-sample predictions.

2. Why citizen forecasts?

As the field of election forecasting has grown, scholars have experimented with many different measures and methods in an attempt to find the most accurate predictors (for reviews, see Lewis-Beck & Stegmaier, 2014; Stegmaier & Norpoth, 2017). Such models often include voter intentions or government approval ratings a few months prior to the election as a gauge of the electorate's preferences.¹ Such variables can be found in models of elections in the US (Campbell, 2016; Erikson & Wlezien, 2016), Britain (Ford, Jennings, Pickup, & Wlezien, 2016; Stegmaier & Williams, 2016) and Germany (Jérôme, Jérôme-Spezari, & Lewis-Beck, 2017; Norpoth & Gschwend, 2017), among others. Both the approval and vote intention items reflect the respondent's personal assessment of the incumbent government or the candidates. However, a developing branch of the election forecasting literature has begun to utilize electoral expectations, measured by the question, "who do you think will win the election?" This approach is referred to as "citizen forecasting", and has been used for election prediction in both the US (Graefe, 2014; Lewis-Beck & Skalaban, 1989; Lewis-Beck & Tien, 1999; Murr, 2015) and Britain (Lewis-Beck & Stegmaier, 2011; Murr, 2011, 2016).

In such citizen forecasting models, the survey responses are aggregated to the level of prediction, whether the national level or the constituency level, and most often, citizens get it right. For instance, in their pioneering study, Lewis-Beck and Skalaban (1989) looked at citizen forecasts of eight US presidential elections between 1956 and 1984. They found that, on average, 69% of citizens forecast the election winner correctly, but that the majority of citizens forecasted 75% (six out of eight) of the elections correctly. In other words, moving from individual to aggregate forecasts improved the accuracy from 69% to

75% – an increase of six percentage points. Their two main findings – that most citizens forecast correctly most of the time, and that groups forecast better than individuals – have subsequently been replicated at two different levels (subnational and national) and in two countries (Britain and United States); see for example Graefe (2014), Lewis-Beck and Stegmaier (2011) and Murr (2011, 2015, 2016).

In addition to demonstrating that citizen forecasts are accurate, several studies have also shown that citizen forecasts are more accurate than any other forecasting approach, including voter intention polls. Using national-level data from the last 100 days before each of the seven US presidential elections between 1988 and 2012, Graefe (2014) compared the relative accuracies of citizen forecasts, voter intentions, prediction markets, expert surveys, and quantitative models. He found that citizen forecasts are better than any other approach at forecasting both election winners and vote shares. Similarly, Murr, Stegmaier, and Lewis-Beck (2016) used national-level data from the 48 months before each of the 18 British general elections between 1950 and 2015 to compare the relative accuracies of citizen forecasts and voter intentions, and found that citizen forecasts are better than voter intentions at forecasting both the winning party and its seat share.

As Murr (2015) has shown, the accuracy of citizen forecasts can even be increased by weighting and delegating the individual forecasts optimally based on the citizens' competence (e.g., Grofman, 1975; Kazmann, 1973; Shapley & Grofman, 1984). The method involves two steps: first, predict the probability that each citizen will forecast correctly; then, delegate the forecasting to the most competent citizen and weight their forecasts according to their level of competence. Using data from eleven US presidential elections between 1952 and 2012, Murr (2015) showed that this increases the forecasting accuracy of both the candidates' vote shares in a state and which candidate will carry the state. Thus, being able to predict the chance of a citizen forecasting the election correctly is crucial for improving the forecasting accuracy.

3. Why can citizens forecast correctly?

The explanation as to why citizen forecasts are accurate has two parts (Murr, 2017). The first part explains why groups forecast better than individuals. This part rests on the assumption that individuals forecast better than chance on average, and the second part explains why individuals are able to do so.

Murr (2011) explains the fact that groups predict better than individuals based on Condorcet's jury theorem and its generalizations (Condorcet, 1785). Condorcet demonstrates the conditions under which the group decisions reached by a plurality rule are better than, equal to, or worse than individual decisions. His proof assumes that (i) the group faces two alternatives, one correct and one incorrect, (ii) the k group members vote independently of one another, and (iii) each member has one vote and the same probability p of choosing the correct alternative. Then, the probability of a correct group decision by a majority vote is

$$P = \sum_{m=\lfloor k/2 \rfloor + 1}^k \binom{k}{m} p^m (1-p)^{k-m}.$$

¹ In addition to voter intention polls or approval ratings, such models often include economic performance measures, the number of terms the party has held office, and previous election results.

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