Introduction

Retrospective voting is a fundamental concept in political science, which proposes that voters evaluate the performance of political leaders based on their past performance. This evaluation is based on the voters' perceptions of the leader's performance, which can be influenced by a variety of factors (A. Healy & Malhotra, 2013). An adequate system of retrospective voting, where voters duefully reward and punish politicians, has been theorized to cause efficient political outcomes, where political actors who underperform leave office (Duch & Stevenson, 2008; Ferejohn, 1986; Persson & Tabellini, 2002), resulting in greater democratic accountability. However, the literature on retrospective voting has found a variety of biases in the way voters attribute responsibility to political leaders, which challenges the foundational basis on early performance models. In this paper, I contribute to the literature on attribution errors by focusing on a novel subject, which is the effect of weather on voter attitudes, namely, on how seemingly irrelevant weather conditions affect presidential approval.

Most of the literature of retrospective voting has focused on economic voting, which has long discussed if voters truly evaluate politicians based on the management of the economy, or the economy is seen through partisan lens. Presidential approval is closely related to this, considering the ample perception of the executive as the main responsible for the economy. Attribution errors have been found in this environment, where voters cannot accurately judge the performance due to a lack of information of politicians' mandates (A. Healy & Malhotra, 2009).

While the most obvious mistake of voters could be seen as the lack of information, cognitive biases can also lead to the incorrect attribution of responsibility to political leaders. Cognitive biases such as an increased emphasis in the election year, party cues, heurisitics, have been found to be present in experimental settings (Hart & Matthews, 2023). Further, there is evidence that voters can commit severe attribution errors by assigning blame to politicians because of irrelevant events A. Healy & Malhotra (2010). The existence of these biases has been confirmed in recent observational studies, which find that in Latin America economic variables have little explanatory power in explaining presidential approval (Berlemann & Enkelmann, 2014; Layton et al., 2016).

Nevertheless, even though research has shown clear results on the existence of biases and a growing importance on attribution errors, the literature is still limited in the exploration of unrelated factors that can affect presidential approval, such as the weather. This is important in developing democracies, where weather can be a more relevant factor in the lives of citizens, and where the literature on retrospective voting is still limited.

Outside political science, it has been found that weather is a strong determinant of mood and personal evaluations of happiness and satisfaction (C. P. Barrington-Leigh,

2008; C. Barrington-Leigh & Behzadnejad, 2017; Lucas & Lawless, 2013). Further, organizational behaviour literature has also determined that weather can impact the way that subjective performance evaluations are made (Deller & Michels, 2022), which can be seen as a parallel to the way that voters evaluate politicians. Given that the literature on retrospective voting is based on the idea that mood can impact the way that voters evaluate politicians (Bower, 1981; Schwarz & Clore, 1983), it is reasonable to assume that weather can have an impact on presidential approval, but to my knowledge, this is the only paper that explores this relationship.

I construct a novel dataset by merging the AmericasBarometer (AB) public opinion survey data with CPC Global Unified temperature data in Ecuador. Given that short-term temperature changes can be assumed to be random, I exploit this variation to estimate the effect of temperature on presidential approval ratings. I find that higher temperatures have a negative and statistically significant relationship with presidential approval, which suggests that voters commit attribution errors when evaluating politicians.

The paper proceeds as follows. In the next section, I present the empirical approach of the paper, which includes the data. In the Results section, I present the paper's main findings. I also present the heterogenous effects of temperature on presidential approval. In the conclusion, I discuss the main findings of the paper and their implications for the literature on retrospective voting and attribution errors.

Empirical Strategy

My data are composed of a pooled cross section of the AmericasBarometer (AB) (The AmericasBarometer by the LAPOP Lab, n.d.) merged with daily CPC Global Unified temperature (National Oceanic and Atmospheric Administration (NOAA) Physical Sciences Laboratory (PSL), 2024) based on interview date and canton in Ecuador. The AB is a public opinion survey conducted by the Latin American Public Opinion Project (LAPOP), which has conducted biyearly survey waves in Ecuador and other countries from 2004 to 2023. I use the subscriber LAPOP datasets available through Universidad San Francisco de Quito's research affiliation with LAPOP, focusing on the eight survey waves carried out between 2008 to 2023[^1]. The surveys are based on a multi-stage national probability design, representative at the national level, except for 2021, where the survey switched to a random-digit-dialing design due to the COVID-19 pandemic.

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