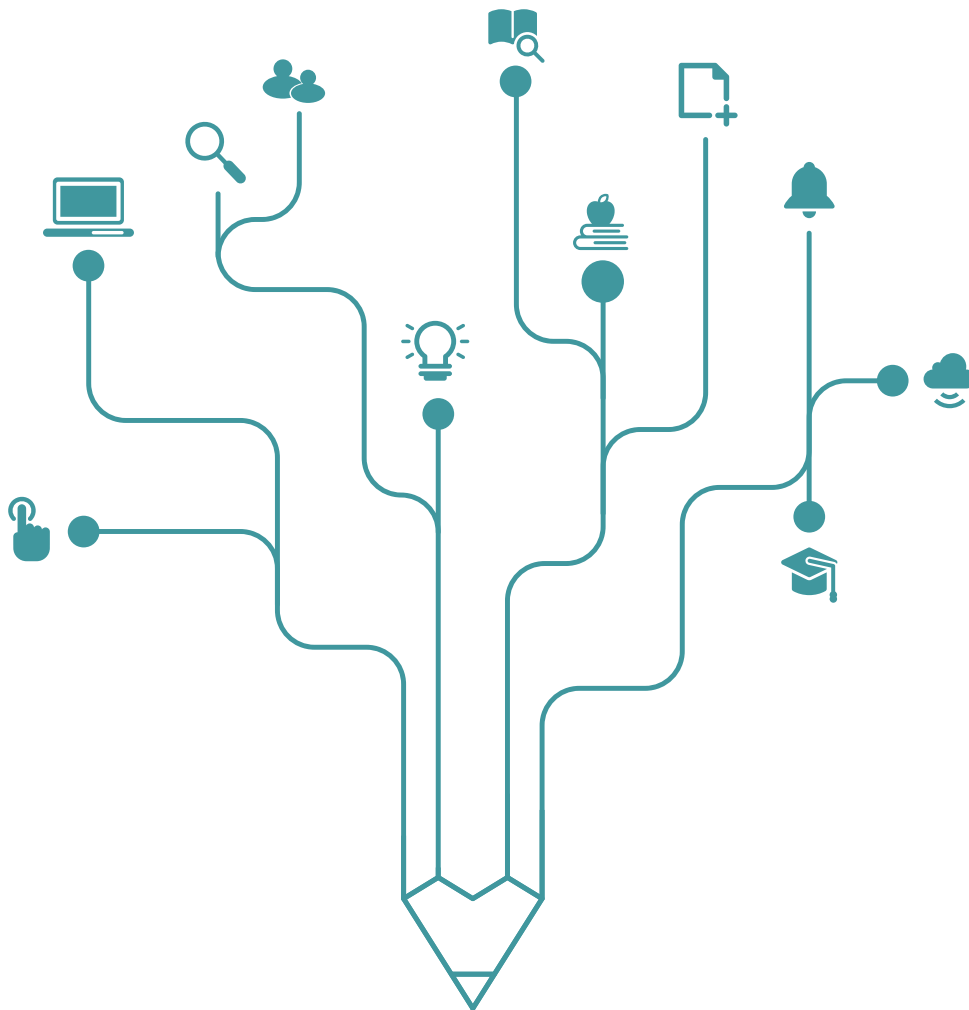


# How Language Shapes Public Opinion: Survey Experimental Evidence in Kenya

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# How Language Shapes Public Opinion: Survey Experimental Evidence in Kenya

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## Abstract

How does survey language affect survey responses? In many parts of the world, people use multiple languages within the same country. Yet, existing literature suggests that linguistic minorities often systematically misrepresent not only their political opinion but also their recollection of objective facts. Borrowing from the existing literature in political science, psychology, and survey research, we theorize that language influences survey responses mainly through two channels: first, by priming political knowledge and contexts, and second by provoking social desirability bias. To test these expectations, we conduct an original survey experiment in Kenya by randomly administering the survey in either English or Swahili - the two official languages of the country. We find that first, respondents who randomly receive their surveys in English as opposed to Swahili are more likely to correctly answer a battery of political knowledge questions and report higher interest in politics more generally. Second, those who are in the English language treatment group are more likely to report experiences of participation in formal politics, such as voting and community gathering, but, at the same time, less likely to report experiences of participation in informal politics, such as protests and demonstrations. Third, we also document evidence of social desirability bias, but only in dimensions relevant to the difference between the English and Swahili languages. Additional tests provide indirect evidence that the effects of language on political knowledge, interests, and participation are driven mostly by priming effects and not by social desirability bias; that we are indeed capturing the effect of language – and not some other politically salient identities – on survey responses; and that language effects are mostly direct, rather than being mediated by some heightened sense of anxiety, or other feelings

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# 1 Introduction

How does survey language affect survey responses? In many parts of the world, people use multiple languages within the same country. In some, such as the United States, where there is no defined official language, many communities speak both their mother tongue as well as the de facto official language, English. In others, such as Belgium or South Africa, the state recognizes, and citizens speak multiple official languages. In such a context of linguistic diversity, small but growing literature shows that linguistic minorities often systematically misrepresent not only their political opinion but also their recollection of objective facts when presented with official information and even census surveys in languages other than their mother tongue (Pérez, 2016; Lee and Pérez, 2014; Lupu and Michelitch, 2018). This line of research suggests that without taking into account the potential distortion of public preference representation stemming from the use of multiple languages in surveys, policymaking can be easily mistargeted. Likewise, many academic research which heavily relies upon the use of public opinion data would also suffer. Moreover, considering that linguistic minority status is more often than not correlated with political and economic minority status, such misrepresentation of public opinion would also likely hurt some of the most disadvantaged people.

This paper examines the impact of language in shaping survey responses. Borrowing from the existing literature in political science, psychology, and, more generally, survey research, we theorize that language influences survey responses mainly through two channels: first, by priming political knowledge and contexts, and second by provoking social desirability bias. To test these expectations, we conduct a survey experiment with over 1,500 respondents in Kenya to measure the causal effect of survey language on various outcomes by randomly administering the survey in either English or Swahili - the two official languages of the country. According to the survey data from the Afrobarometer, there are at least 33 widely used home languages in Kenya, and a typical respondent can speak 2-3 different languages, including the two official languages. However, many of the large-scale survey projects by leading international institutions such as the World Bank, including their flagship World Bank Country Survey, and even many of the official Kenyan government surveys, such as

the Population and Housing Census, are often only conducted in English. Thus, Kenya serves as a relatively representative case with not only a typical level of linguistic diversity in the region but also with many possibilities of misrepresentation of public opinion due to multiple language use.

We find that first, respondents who randomly receive their surveys in English as opposed to Swahili are more likely to correctly answer a battery of political knowledge questions and report higher interest in politics more generally. Second, those who are in the English language treatment group are more likely to report experiences of participation in formal politics, such as voting and community gathering, but, at the same time, less likely to report experiences of participation in informal politics, such as protests and demonstrations. Third, we also document evidence of social desirability bias, but only in dimensions relevant to the difference between the English and Swahili languages. By conducting a heterogeneous treatment effect analysis by language fluency, we provide indirect evidence that the effects of language on political knowledge, interests, and participation are driven mostly by priming effects and not by social desirability bias. A subgroup analysis by incumbent president support further shows that we are indeed capturing the effect of language – and not some other politically salient identity – on survey responses. Finally, a causal mediation analysis confirms that language effects are mostly direct, rather than being mediated by some heightened sense of anxiety, or other feelings.

Our study contributes to the nascent literature on language and surveys. First, our research shows that research using survey data should seriously consider the potential bias that can emerge from language effects. Existing research shows that interviewer characteristics such as religiosity (Blaydes and Gillum, 2013), ethnicity (Adida et al., 2016), nationality (Gengler et al., 2021), or gender (Sundström and Stockemer, 2022) can influence survey responses. We find that, even after controlling for the variation in interviewer characteristics through randomization, language can independently exert influence on survey responses. Second, our work also complements existing studies that have examined the influence of survey language on survey responses, especially in advanced democracy contexts such as Latino communities in the United States (e.g. Abrajano and Panagopoulos, 2011; Abrajano and Alvarez, 2019; Lee and Pérez, 2014; Flores and Coppock, 2018). We believe that this

problem of the influence of language on survey response is arguably exacerbated in research concerning developing countries with colonial histories where both the indigenous language and the language that the colonial country has been implanted. In the sub-Saharan African context, for example, there are no less than 800 languages are actively spoken, and a typical individual can speak more than two languages (Logan, 2018). Given the lack of research on the use of multiple languages in surveys in developing country contexts, we provide an important extension of this line of research. Third, our results show that the use of multiple languages, in general, may be bad news for entering formal politics and political interests.

## **2 Theory and Context**

### **2.1 How Language Affects Survey Response**

Political scientists have long recognized the effects of language on various political outcomes including ethnic conflicts (e.g., Horowitz, 1985; Posner, 2005; Kinder and Dale-Riddle, 2012), developmental outcomes (e.g., Laitin, 1992; Laitin and Ramachandran, 2016), individual attitudes toward a number of political issues including immigration (e.g., Hainmueller and Hopkins, 2014), future-oriented policies (Pérez and Tavits, 2017), ethnicity (Danziger and Ward, 2010), and gender equality (Tavits and Pérez, 2019), to name a few.

Relatively recently, however, a small but increasing number of studies have investigated the association between language and political survey responses. Broadly speaking, language influences political survey responses through two channels. First, language can “prime” political knowledge and contexts, thereby making them more accessible for use in formulating attitudes toward political affairs (Pérez and Tavits, 2022). Existing studies in psychology have long suggested that people are more likely to accurately and easily recall information when they encode and retrieve information in a similar environment or context (Tulving and Thomson, 1973; Godden and Baddeley, 1975). Language serves as a typical environment that can affect retrieval of memories: people can better activate recollection of information when they are asked in the same language in which they learned them (Marian and Fausey, 2006; Marian and Kaushanskaya, 2007; Schrauf and Rubin, 2003). Political facts are a typical type of information that this so-called “encoding specificity principle” through language can

apply to. Lee and Pérez (2014), for example, find that bilingual survey respondents in the U.S. are more likely to give correct answers to political knowledge questions when the interview language was English than Spanish since political affairs tend to be disseminated and discussed in English. Moreover, survey language can make specific political contexts more prominent in people's evaluation of politics. For instance, existing studies find that people are more likely to rely on ethnic considerations when answering to political questions when the survey language is a minority tongue (Danziger and Ward, 2010; Pérez and Tavits, 2019).

Second, survey language can provoke social desirability bias. Social desirability bias can prevail in survey research on political attitudes, especially in developing countries involving sensitive survey items (e.g., Gonzalez-Ocantos et al., 2012). In particular, existing studies have suggested 'interviewer–respondent mismatch' as a main source of social desirability bias in survey research in countries with diverse ethnic, racial, or cultural groups (e.g., Adida et al., 2016; Kasara, 2013). Noticeably, language constitutes another major factor of social desirability bias as it can give a hint about the identity of the interviewer. In many multi-lingual societies, certain groups of people use specific language or tones that other groups rarely use, and thus at least implicitly reveal their group identities through the language they speak. In this case, respondents may not reveal true opinions and show seemingly desirable attitudes to avoid any potential punishment or unnecessary tensions with the interviewers. Such incentives to report false opinions can be greater if the group that the interviewer's language refers to constitutes a majority or a powerful group in society.

## 2.2 The Case of Kenya

We design and implement a survey experiment in Kenya, a country with a typical level of linguistic diversity in the region. In the Kenyan context, we argue that these two mechanisms of priming and social desirability by which survey language affects political opinions suggest that citizens may report better political knowledge and evaluate political systems and engagement more positively when asked in English than Swahili.<sup>1</sup>

In Kenya, English is a language of politics: all official government, contracts, and laws

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<sup>1</sup>Deal with other ethnic languages and send in the footnote or something.

should be written in English, and the leading daily newspapers, a major source of political information, are published overwhelmingly in English (Michieka, 2005). Swahili, on the other hand, serves as the language of the marketplace, the labor force, and the trade union. (Mazrui and Mazrui, 1993, 283-4). Indeed, despite both languages having the status as official languages, the language of the constitution was only in English up until the constitutional reform in 2010, the standing orders of the parliament were only in English until 2019, and the official language of the judiciary still remains in English only (Mazrui and Mazrui, 1993; The Clerk of the National Assembly, 2022). Reflecting this duality in language use, some have argued that English has been “reserved as a language of authority”, while Swahili to “register of slang, banter, and informality” (McIntosh, 2014).

Indeed, when President Uhuru’s son Muhoho Kenyatta appeared to be unable to deliver a speech in Swahili during the election campaign trail in the run-up to the 2017 elections, observers criticized that “rich folks speaking English and broken Swahili is the epitome of supremacy in Kenya” (Osoro, 2017). Similarly, a recent article in the African Arguments covering the 2017 Kenyan elections observed that when politicians talk about title deeds and land – probably the country’s most political issue – they will switch to English, even if the speech is in Swahili, as a familiar, issue-based word in Swahili does not exist (Nyabola, 2017). This role of English as the language “in which formal policy is mostly delivered” makes it harder for voters to articulate their demands (ibid.). Moreover, this duality in official languages is not limited to Kenya. For example, in contexts like South Africa, scholars similarly claim that English “acts as a monopolist and hence excludes others”, while Bantu languages are for “daily use as the ‘language of ordinary people’ ”(e.g., Henderson, 1997, 113).

Given this context, we predict that Kenyan citizens will be more likely to recall political facts in English. Hence, we expect that attitudes toward political systems and self-report for political participation would systematically vary depending on the survey language. English, which predominantly enshrines the formal domain of politics in Kenya, signals that the survey may be administered by the government or other political entities. In this regard, the respondents exposed to a survey in English would be more incentivized to report more favorable opinions about politics and answer that she or he has actively participated in

formal politics than those who took a survey in Swahili. On the other hand, we expect that preferences toward specific political parties or politicians will not vary across survey languages since such identity is hardly revealed through the differences in how English and Swahili languages are perceived in Kenya.

### **3 Research Design and Results**

#### **3.1 Research Design**

In order to test our expectations, we conducted an online survey implemented using Qualtrics Panels during the period of December 2021 to January 2022. We designed the subject recruitment to be representative of the national adult population distribution in terms of age, gender, province, and education. Yet, given the demographical characteristics of those who are more likely to have online access, male, younger, and Central and Nairobi residents were slightly overpopulated. To ensure the quality of survey participants, Qualtrics provided a baseline quality check by removing those they have identified as speeders or straightliners. In addition, we also removed anyone who has not finished the full survey as well as those who have failed to pass a simple knowledge check question. The resulting sample size used in our analysis is 1,549.

For the administration of the experimental treatment, we randomly assign respondents to the same survey conducted entirely in either English or Swahili. We intentionally choose these two official languages for two reasons. First, most Kenyans have at least some working-level fluency in these two languages, as they are both taught in school and act as official languages. Second, and more important for our causal inference, neither of the languages is strongly associated with the other politically salient identities, such as ethnicity or religion. As such, using the randomly administered languages, we can isolate the impact of language themselves and their associated social stature as a language of formal politics versus a language of informal marketplace, without having to worry about other influences. The questions block consisted of those on the respondents' demographic background, economic perceptions, language proficiency and preferences, political perceptions, ethnic perceptions, political knowledge, and other sensitive demographic backgrounds, and the questions used



the exact wording from the existing Afrobarometer surveys.

## 3.2 Results

Consistent with our expectations, Figure 1 clearly shows that those who randomly receive their survey in English as opposed to Swahili exhibit both higher levels of political knowledge and interests. In particular, in response to questions designed to test the respondents' knowledge about politics, including items such as the name of the interior minister to the length of presidential terms, respondents who completed their surveys in English showed, on average, 0.31 higher standard deviation for the effect size on finding the correct answer. We also find that respondents who received the English survey language treatment report a much higher interest in politics more generally.

Perhaps due to the higher levels of recall for political knowledge and hence resulting the higher interest in politics, respondents who randomly received the surveys in English also report higher rates of political participation. Figure 2 shows the relevant results. Those in the English treatment group reported 0.13 to 0.21 standard deviation higher responses to various political participation questions, including whether they voted in the previous election, participated in meetings, or some get-togethers. However, compared to the positive increase in reports of turnout for these formal political events, those who received their surveys in English as opposed to Swahili were less likely to admit that they have participated in informal political events, such as protests or demonstrations. These findings correspond to the expectation that the English language is more likely to be associated with formal politics, whereas Swahili is more likely to prime acceptability of informal political participation.

Finally, Figure 3 shows that respondents who randomly receive their surveys in English are no more or less likely to say that they identify more as Kenyan as opposed to a member of their ethnic group or consider their ethnic groups to have more or less political influence than other ethnic groups. These results confirm that the differences between the English and Swahili survey languages are orthogonal to ethnic considerations. Yet, we can still detect social desirability bias induced by the use of the English language in other, not overtly ethnic items. For example, when asked whether the main responsibility of a political leader upon being elected is to help their home community, the English survey respondents register

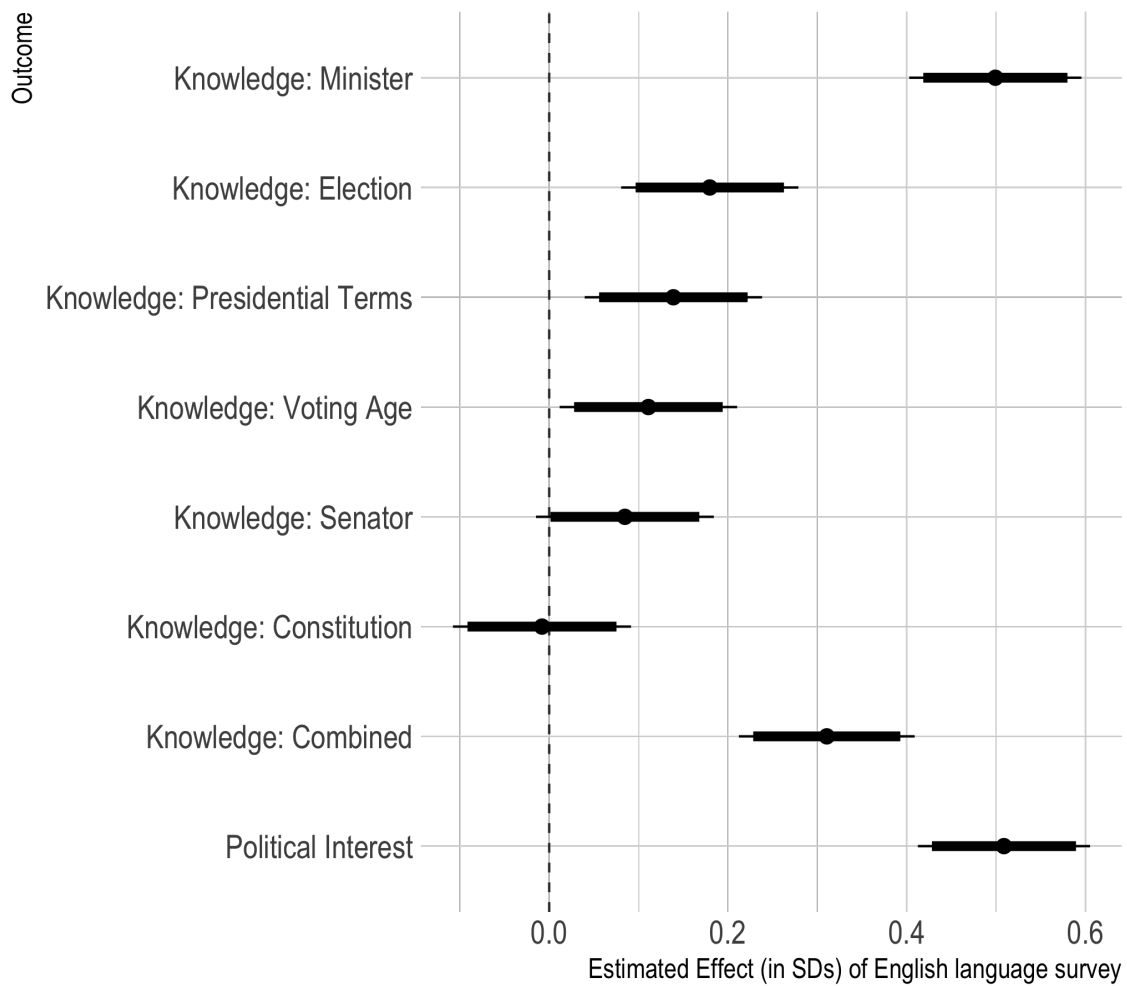


Figure 1: Impacts of English Language Survey on Responses to Political Knowledge Questions

a clear negative coefficient. In contrast, when they are asked about their ethnic group’s economic conditions or whether their group is treated fairly, respondents who randomly received the English language surveys are less likely to say that their ethnic group is in some disadvantageous or unfair condition.

#### 4 Discussion

We suggested that the language effects we observe are driven by two mechanisms: priming and social desirability. How, then, do we know under which condition one mechanism works

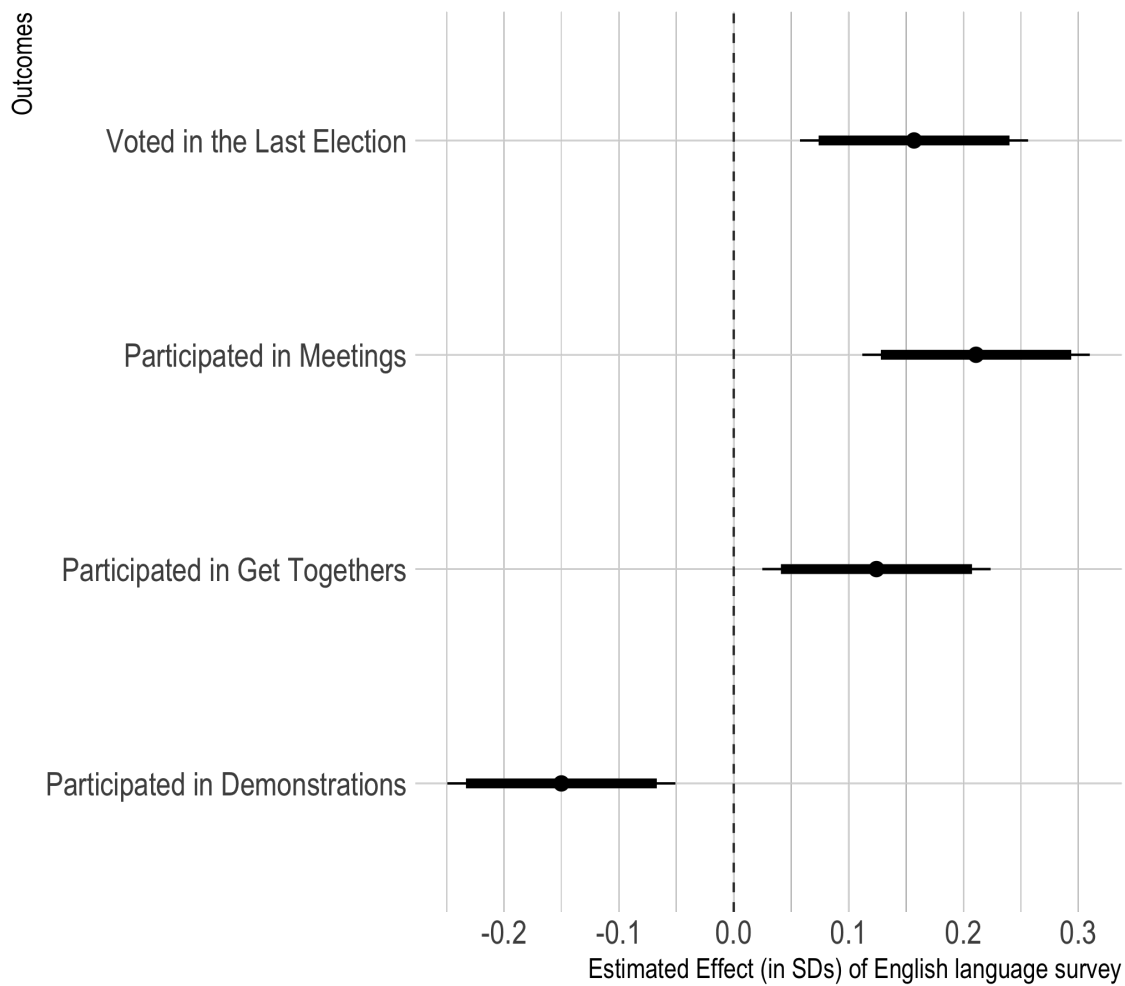


Figure 2: Impacts of English Language Survey on Responses to Political Participation Questions

as opposed to the other? To answer this question, we conduct a heterogeneous treatment effect analysis by language fluency. Figure 4 shows the results where we divided the sample into low and high conversational proficiency in the English treatment group and the Swahili control group, respectively. Results are plotted with the low proficiency in the Swahili group as the base category. Two important observations emerge. First, for political knowledge, interests, and participation, not just receiving the survey in English, but actually sufficiently understanding the language matters. For these outcome variables related to political knowledge or interests, we find a sizable difference between those who are highly proficient in

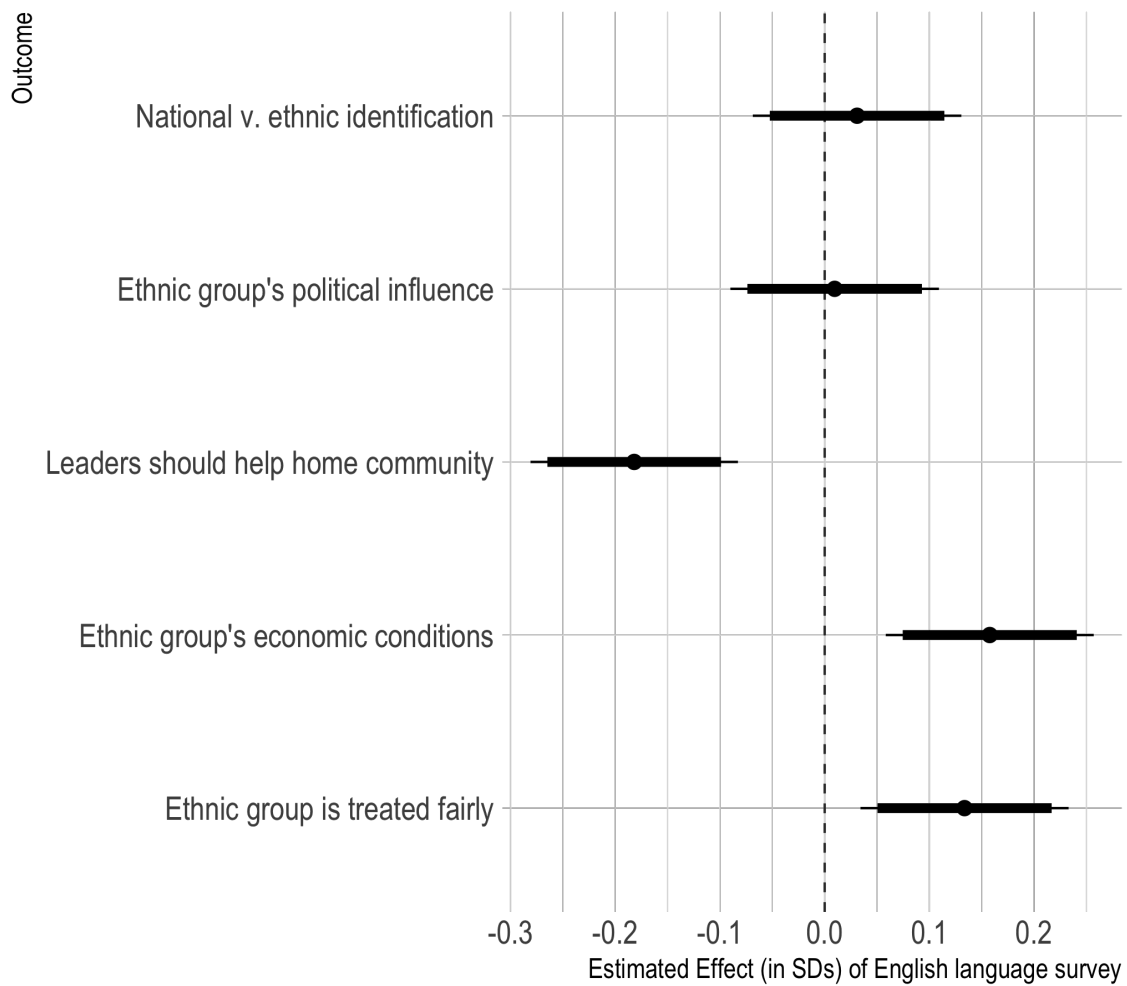


Figure 3: Impacts of English Language Survey on Responses to Ethnic and Sensitive Questions

English and have received the survey in English compared to those who either have only low English proficiency and took the English survey or those who took the Swahili survey regardless of their language proficiency. Similarly, for the political participation variables, including voting and participation in demonstrations, we also see that the English language treatment effect is only present among those who have high English proficiency. Second, however, for the ethnic and sensitive questions outcome variables of national versus ethnic identification or ethnic group's political influence, we do not see any statistically meaningful effect or differences across all four groups with the interaction between the treatment group

status and language proficiency.

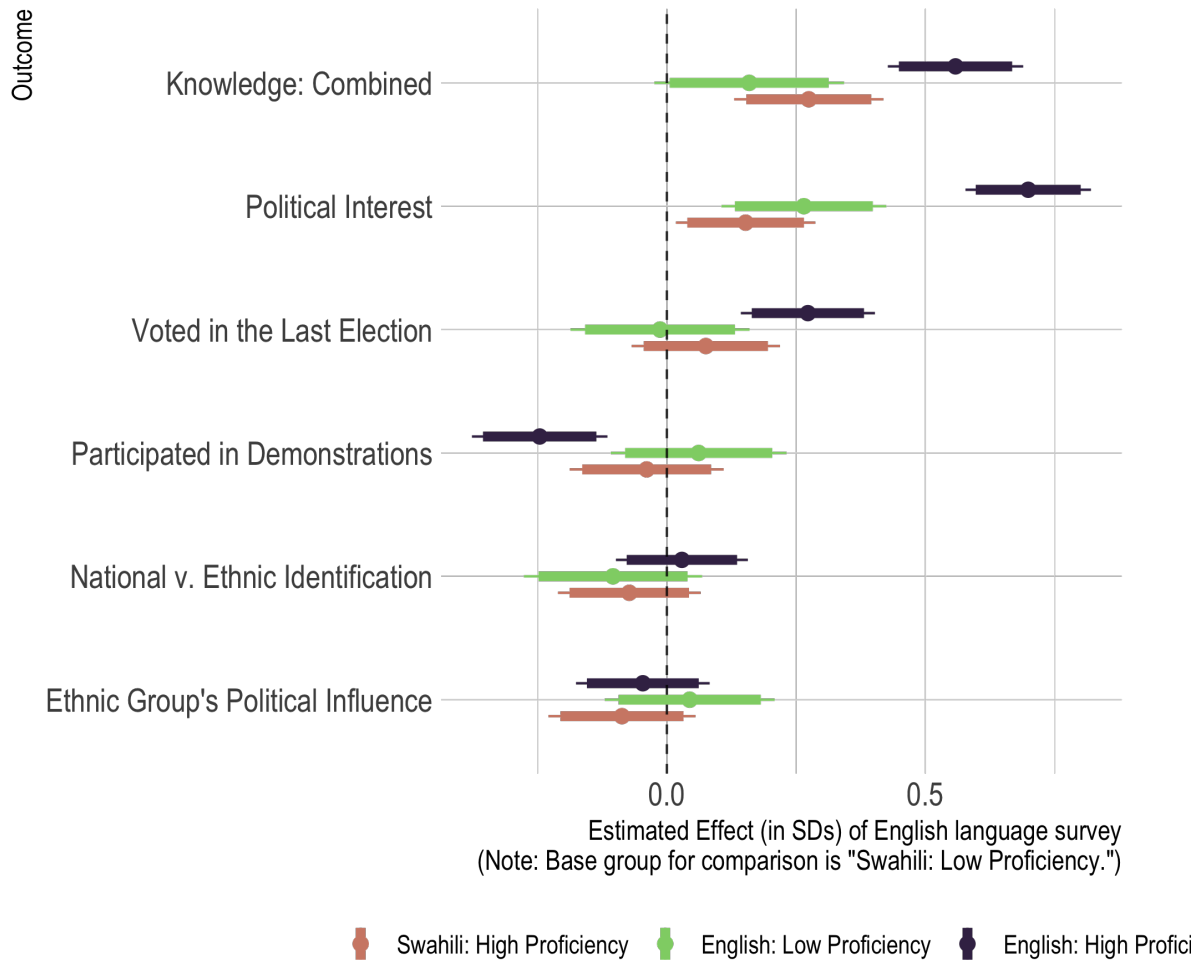


Figure 4: Impacts of English Language Survey on Survey Responses by Language Fluency

Some might be concerned that the language effects we uncover may simply reflect some difference in the underlying respondent characteristics along with some other politically salient identity despite the random assignment of treatment languages. To alleviate such concern, we report in Figure 5 the results from an additional subgroup analysis by incumbent president support. Across all the key outcome variables on political knowledge, interests, participation, and ethnically sensitive items, we do not observe any noticeable differences in the treatment effects of the incumbent president's support. These results provide at least some indirect suggestive evidence that we are indeed capturing the effect of language – and

not some other politically salient identity – on survey responses.

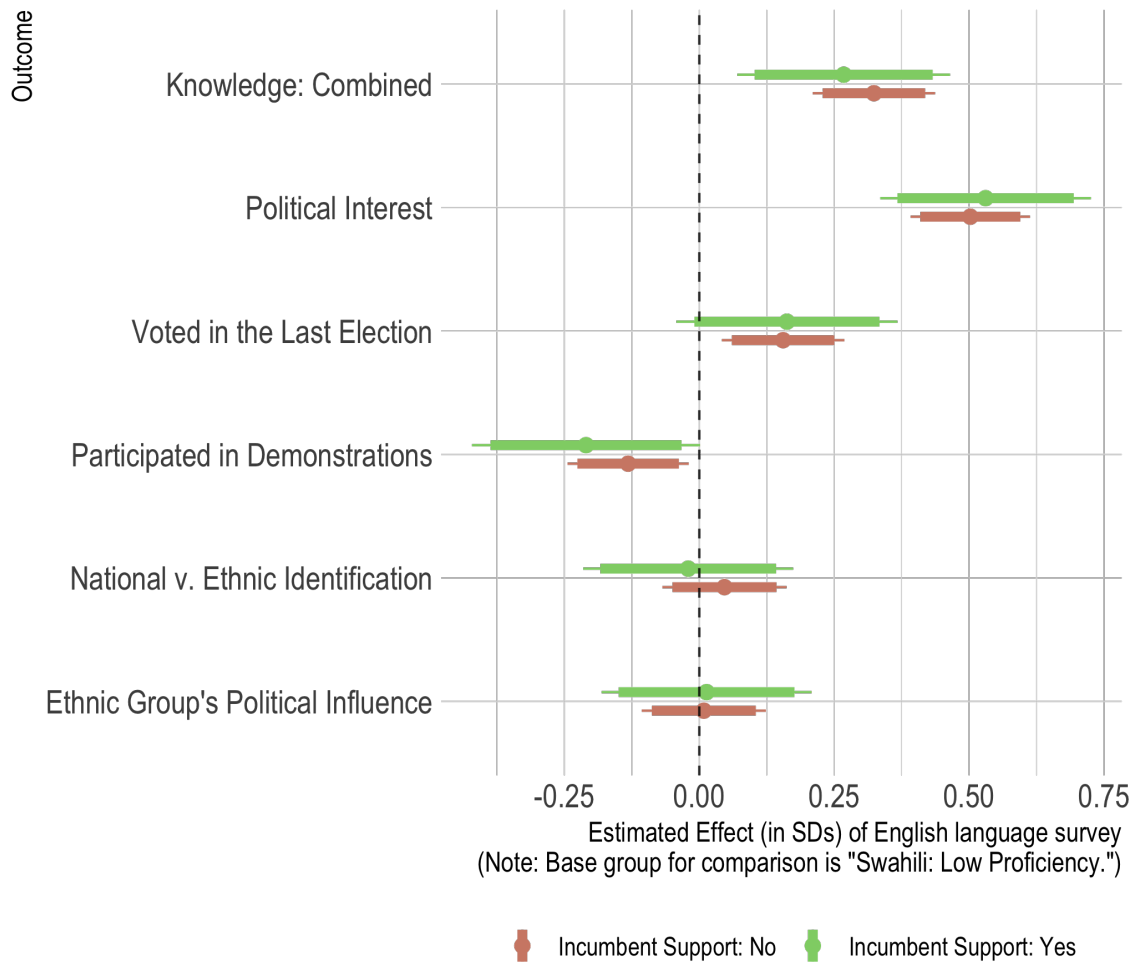


Figure 5: Impacts of English Language Survey on Survey Responses by Incumbent Support

Finally, a causal mediation analysis confirms that language effects are mostly direct rather than being mediated by some heightened sense of anxiety or other feelings.<sup>2</sup> Existing research suggests that language manipulation may induce strong emotions among subjects, which may mediate the language treatment effects (Baron and Kenny, 1986; Bullock and Ha, 2011; Pérez, 2016). Following Pérez (2016), we derive an average causal mediation effect (ACME) using the approach proposed by Imai et al. (2011). Table 1 reports the ACMEs, which can be interpreted as the change in an outcome due to a shift in the mediator while keeping

<sup>2</sup>Need to add other feelings in the appendix.

the treatment constant. Similar to previous studies in different contexts (e.g., Pérez, 2016), we find that mediating influence of feeling such as anxiety on survey responses is generally weak and inconsistent. For all variables except for participation in demonstrations, we see no statistically significant ACMEs. Moreover, the proportion of the mediation effects is generally very small, ranging from 0.08% to 0.9% at most, suggesting language influences opinions largely in a direct way. While in the case of national versus ethnic identification as the main outcome, the feelings mediator channels some of the language's impact. But again, the extent of mediation here is very small (0.09%).

#### 4.1 Concluding Remarks

This paper provided strong causal evidence that survey language affect survey responses in the context of Kenya. By conducting an original survey experiment where we randomly administered the survey in either English or Swahili - the two official languages of the country, we found that respondents who randomly receive their surveys in English as opposed to Swahili are more likely to correctly answer a battery of political knowledge questions and report higher interest in politics more generally. Moreover, those who are in the English language treatment group are more likely to report experiences of participation in formal politics, such as voting and community gathering, but, at the same time, less likely to report experiences of participation in informal politics, such as protests and demonstrations. We also document evidence of social desirability bias, but only in dimensions relevant to the difference between the English and Swahili languages. Heterogeneous treatment effect analysis by language fluency shows that the effects of language on political knowledge, interests, and participation are driven mostly by priming effects and not by social desirability bias, and the subgroup analysis by incumbent president support showed that we are indeed capturing the effect of language – and not some other politically salient identity – on survey responses. Finally, the causal mediation analysis confirmed that language effects are mostly direct rather than being mediated by some heightened sense of anxiety or other feelings.

These results provide important implications for research using survey data, as language can independently exert influence on survey responses. Moreover, this issue most likely is more salient in developing countries, where multiple language use is more common. More

Table 1: Mediation of Languages Effects on Survey Opinion

	Estimate	95% CI Lower	95% CI Upper	p-value
<i>Knowledge: Combined</i>				
ACME	0.003	-0.004	0.011	0.396
ADE	0.308***	0.212	0.411	0
Total Effect	0.311***	0.214	0.412	0
Prop Mediated	0.008	-0.013	0.037	0.396
<i>Political Interests</i>				
ACME	0.002	-0.005	0.010	0.646
ADE	0.512***	0.415	0.615	0
Total Effect	0.513***	0.418	0.617	0
Prop Mediated	0.002	-0.011	0.020	0.646
<i>Voted in the Last Election</i>				
ACME	0.003	-0.003	0.012	0.302
ADE	0.158***	0.055	0.258	0.002
Total Effect	0.162***	0.058	0.259	0.002
Prop Mediated	0.019	-0.019	0.100	0.300
<i>Participated in Demonstrations</i>				
ACME	0.014***	0.003	0.029	0.008
ADE	-0.164***	-0.259	-0.063	0.002
Total Effect	-0.150***	-0.247	-0.047	0.004
Prop Mediated	-0.090**	-0.375	-0.016	0.012
<i>National v. Ethnic Identification</i>				
ACME	-0.001	-0.008	0.005	0.816
ADE	0.032	-0.067	0.126	0.528
Total Effect	0.031	-0.067	0.127	0.540
Prop Mediated	-0.005	-0.475	0.855	0.928
<i>Ethnic Group's Political Influence</i>				
ACME	-0.007*	-0.019	0.0004	0.068
ADE	0.012	-0.079	0.102	0.792
Total Effect	0.005	-0.086	0.099	0.910
Prop Mediated	-0.026	-2.385	2.561	0.922

Note: \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

broadly, the findings suggest that without taking into account the potential distortion of public preference representation stemming from the use of multiple languages in surveys, policymaking can be easily mistargeted, and considering that linguistic minority status is more often than not correlated with political and economic minority status, such misrepre-



sentation of public opinion would also likely hurt some of the most disadvantaged people.

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