

# When Do Partisans Cross the Party Line?

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November 16, 2020

## Abstract

Partisans rarely vote for opposition party candidates. In contrast to existing work on cross-party voting in developing countries, I argue that two critical constituency-level factors *jointly* shape a partisan's likelihood of voting for a candidate from the other party when desirous of more public infrastructure. The first is *partisan geography*: partisans have an incentive to vote for a similar or better opposition politician when they live side by side with her supporters in a community (i.e., partisan nonsegregated areas) because politicians cannot exclude them from the provided benefits. Second, voters only have an incentive to cross party lines in *competitive* electoral districts because their vote can be pivotal in selecting and sanctioning an opposition politician. I find support for my hypothesis and proposed explanation using data from a conjoint experiment alongside survey responses of citizens located in a stratified, representative sample of electoral districts in Ghana. The findings help explain seemingly contradictory results in the literature by showing that partisans are willing to cross party lines in specific electoral settings.

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# 1 Introduction

Partisanship is one of the critical determinants of vote choice in many electoral settings, including in newer democracies in Sub-Saharan Africa (Young, 2009; Bratton, Bhavnani and Chen, 2012; Weghorst and Lindberg, 2013; Hoffman and Long, 2013; Carlson, 2016). However, partisans – voters who feel close to one party over another (Brader and Tucker, 2001; Eggers et al., 2014) – sometimes cross party lines to select opposition candidates. Understanding *when* partisans cross party lines is important as such behavior may give politicians a greater incentive to serve citizens' interests (Fearon, 1999).

Partisans may support a non-copartisan candidate for instrumental reasons. In developing democracies the geographic distribution of public infrastructure rather than fiscal policy positions sways vote choice (Bleck and Van de Walle, 2013). Voters *often believe* that politicians direct public resources to copartisan communities (Bates, 1983; Posner, 2005).<sup>1</sup> Accordingly, partisans may vote for a viable opposition candidate from the majority partisan (or ethnic) group in their community to boost her chances of winning and, by extension, their community receiving public infrastructure (Ichino and Nathan, 2013).

Partisans may also switch when they have sufficient information on all candidates. Partisans are more likely to rely on party labels when they lack information on candidate features. Access to information on the quality and campaign promises of opposition candidates may help voters to moderate their views and choose better-qualified opponents (Casey, 2015; Conroy-Krutz and Moehler, 2015; Gottlieb, 2016; Brierley, Kramon and Ofosu, 2020).

Yet some scholarship suggests that neither voters' partisan-geography nor opposition information is sufficient to alter their copartisan preferences. Partisans may consistently vote for a particular party in an expression of their social identity or discount information about their candidate's relative lower quality or performance (i.e., engage in motivated reasoning) (Carlson, 2015; Adida et al., 2017).

I propose and test a new theory about when partisans are more likely to vote for opposition candidates. Focusing on parliamentary elections, I argue that emphasis must be placed on constituency characteristics. I theorize that two constituency-level factors *jointly* influence an individual's propensity to cross party lines. The first factor is *partisan geography*: partisans have more incentive to cross party

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<sup>1</sup>The important driver of voters' behavior is their *belief* that politicians favor their supporters (Posner, 2005). Whether politicians target their supporters is an empirical question (Harris and Posner, 2019) and the evidence is mixed (Kramon and Posner, 2013; Callen, Gulzar and Rezaee, 2020)(Miguel and Zaidi 2003; Lundgren 2013; Andrew and Mesple-Somps 2011).

lines when they live side-by-side with opposition supporters. In *partisan non-segregated electoral districts* officeholders cannot exclude opponents from locally provided public infrastructure (Kasara, 2006; Ichino and Nathan, 2013; Nathan, 2016). The second is *level of electoral competition*: partisans only have an incentive to cross party lines in *competitive electoral districts*. In competitive constituencies, voters can use their vote to elect a better opposition candidate or sanction her if she reneges on her electoral promises once in office (Fearon, 1999; Keefer and Vlaicu, 2005). Non-segregated partisan geography provides a non-exclusion assurance should the opposition politician provide the promised public good, while high competition provides the opportunity to redraw a potentially consequential vote should she fail.

In other electoral settings where these two conditions do not hold, partisans have minimal incentives to vote for an opposition-party candidate either because they do not expect to benefit from the goods that she will provide or they believe that their vote is not pivotal (or both). In contrast to existing work, my argument implies that partisan geography and electoral competition together shape the chances that partisans will vote for opponents. This theory differs from Ichino and Nathan (2013) whose model suggests that partisan switching will not occur when supporters of two competing parties are equally numerous within a neighborhood or constituency.

Testing the causal effect of constituency-level factors on voter behavior is challenging. Constituency types are not randomly assigned and may vary in important ways that influence voters' electoral choices. The research design I adopt allows me to make causal claims at the level of politicians' platforms and party identities and vote choice. I can not make definitive causal claims related to constituency type. Instead, I investigate whether voters' preferences for opposition versus copartisan candidates differs systematically by constituency types in the directions that I hypothesize. These hypotheses were pre-registered before I conducted the data analysis. I also use survey data to examine the observable implications of my theory, as well as alternative explanations. Finally, I investigate potential theoretically relevant ways in which these four types of constituencies could differ and find them to be similar along multiple dimensions. This exercise helps to mitigate concerns of alternative variables driving the results.

To test the causal effect of candidate's party ID and platform on vote choice, I use a forced-choice conjoint survey experiment in which respondents choose between pairs of hypothetical candidates

running to for parliament. Ghana is the setting of the study. Ghana is an appropriate setting as voters can easily obtain information on the partisan landscape of their community. This is because results are publicly announced at polling stations. Further, given the strong two-party system it is also easy for voters to observe competition: voters who reside in competitive constituencies are represented by MPs from each of the two main parties over successive elections. In the conjoint experiment, the campaign promise that I focus on is how each candidate plans to spend their Constituency Development Fund to provide public infrastructure, which many voters see as the most important role of an MP (Barkan et al., 2010). Similar to legislators in other countries, MPs in Ghana receive equal amounts in CDFs to provide benefits to constituents (Barkan and Mattes, 2014; Oforu, 2019).

To test my argument, I focus on two main *average combination effects (ACE)*.<sup>2</sup> First, I investigate whether for the *same* amounts of promised public goods, respondents were more or less likely to choose an opposition candidate over copartisan politician in each constituency type. If a respondent is more or equally likely to pick a copartisan as an opposition candidate at each level of promised public goods, I interpret this as evidence that respondents are willing to cross the party line. Second, I examine whether partisans are more or less likely to select a non-copartisan promising a *higher* amount public good compared to a copartisan candidate pledging a *lower* quantity. Again, if voters are more likely to select an opposition candidate promising more public goods relative to a copartisan aspirant, that would indicate an *instrumental partisan switch*. I estimate these ACEs in the full sample and in each constituency type.

In the full sample, I find that, under the same campaign promise, as expected, partisans prefer copartisan candidates over opposition candidates. Moreover, party supporters only become ambivalent between opposition and copartisan candidate when the former promises a high amount of public goods while the latter commits the minimum amount.

Disaggregating these results by constituency type, partisans are willing to vote for opposition candidates in partisan non-segregated constituencies that are also competitive consistent with my expectation. This is true both when copartisan and non-copartisan candidates promise the same amount of public goods, and when opponents promise relatively more public infrastructure. In the other three types

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<sup>2</sup>ACEs measure the causal effect of a combination of values of two or more attributes relative to a pre-specified baseline (Egami and Imai, 2019).

of constituencies, citizens continue to prefer copartisan candidates to opposition candidates irrespective of the promised amount of public goods.

To investigate the proposed mechanism, I use additional data from my survey to show that voters in nonsegregated/competitive constituencies are less concerned that a non-copartisan politician would exclude them from public infrastructure relative to voters in other types of constituencies. I also infer from the analysis that voters in these setting think their vote is pivotal in selecting better candidates. Finally, I use the survey data to rule out alternative mechanisms. For example, if the public infrastructure needs in competitive non-segregated districts are greater than that in other constituency types, this could motivate voters to prioritize public goods over partisanship. I do not find support for this claim. I also rule out that voters in nonsegregated/competitive constituencies have less intense partisan views compared to other partisans.

My findings help explain seemingly contradictory results in the literature regarding when voters cross party-ethnic lines in sub-Saharan Africa. Carlson (2015) and Adida et al. (2017) find evidence of coethnic (copartisan) intransigence among voters, whereas Ichino and Nathan (2013) suggest that voters sometimes cross party lines. My research shows that both of these conclusions may be correct: voters *are* willing to cross party lines, but only in certain electoral settings. Thus, this study contributes to the small, but growing, number of empirical studies that consider how voters' expectations about partisan or ethnic favoritism discourage or encourage them to cross party-ethnic lines (e.g., Arriola, Choi and Gichohi, 2016; Ichino and Nathan, 2013; Ferree and Horowitz, 2010; Ferree, 2006; i Miquel et al., 2007; Carlson, 2015).

My study also adds to the literature on parliamentary candidate selection. Others have shown that the provision of (or promise to supply) public goods influences the behavior of swing voters (Weghorst and Lindberg, 2013, 2011; Barkan, 1978; Lindberg and Morrison, 2008; Lindberg, 2010). My findings suggest that under certain conditions, even strong partisans can moderate the opinions and vote for opponents who promise more public goods. These findings add to other empirical work that displays evidence of partisan moderation such as studies by Conroy-Krutz and Moehler (2015), Platas and Raffler (2019), and Brierley, Kramon and Ofosu (2020).

Finally, recent empirical work has shown that local demography shapes where politicians distribute public goods (Ejdemyr, Kramon and Robinson, 2017; Harris and Posner, 2019). My research looks at the question from the side of the voter, and similar to Ichino and Nathan (2013), demonstrates that local demography shapes individual vote choice.

## **2 Crossing party lines: the dual importance of partisan geography and electoral competition**

Partisans rarely vote for opposition party candidates. A prominent view in the literature is that, in settings where distributive politics involves the geographic targeting of scarce public infrastructure, partisans do not switch because they believe they will not benefit should an opposition politician be elected (Posner, 2005). However, as Ichino and Nathan (2013) argue, this argument assumes that partisans live in separate communities (or regions) within an electoral district (or country). It also assumes (albeit implicitly) that elections are competitive. I argue that a partisan's voting calculus changes according to the partisan composition of local communities and the competitiveness of her electoral district.

I assume that voters and politicians belong to one of two political parties — Party A or B — competing in a single-member electoral district. Further, I assume that voters prefer candidates who deliver local public goods (i.e. schools, roads, streetlights, health clinics etc.) (Harding, 2015; Barkan et al., 2010; Lindberg, 2010; Weghorst and Lindberg, 2013). Partisans reside in electoral constituencies, defined by two main characteristics — partisan geography and level of electoral competition. Figure 1 displays four constituency types. Within each constituency type, each square represents a polling station catchment area. Column (1) of Figure 1 displays partisan segregated constituencies. In these constituencies, each polling station is dominated by supporters of either Party A ( $P_A$ ) or Party B ( $P_B$ ). Column (2) of Figure 1 displays partisan non-segregated constituencies where each polling station contains a mix of supporters from the two parties.

As regards competition, a constituency is competitive if voters are more or less equally divided between  $P_A$  and  $P_B$ . An electoral district is non-competitive if voters predominantly support one party. The level of electoral competition has implications for the partisan geographic configuration of a constituency's polling stations.

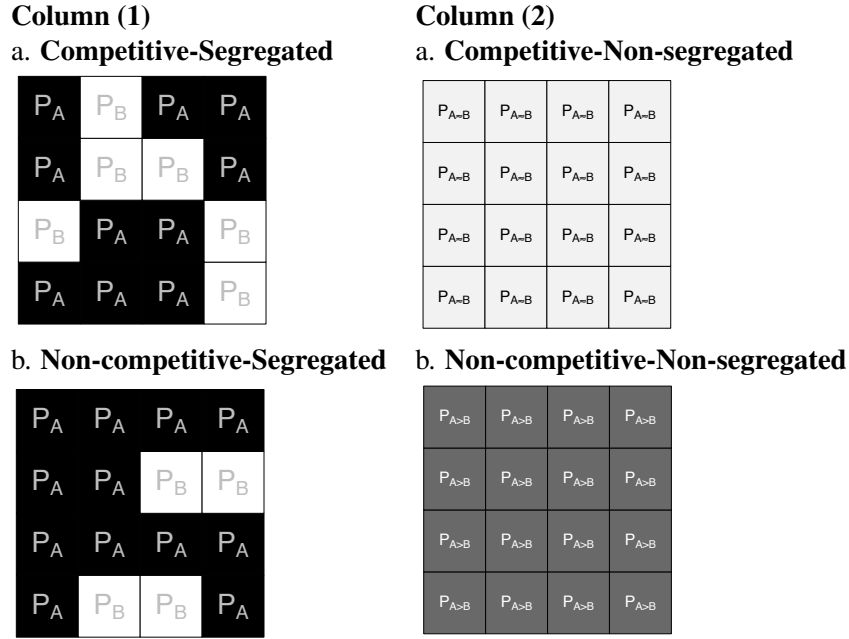


Figure 1: Four types of constituencies

In competitive, partisan-segregated constituencies, one party’s supporters, say  $P_A$ , will dominate about half of the distinct polling stations, and those of  $P_B$  will control the other half (Column (1a)). In non-competitive, partisan-segregated constituencies that are dominated by  $P_A$  ( $P_B$ ), its partisans will dominate, say, three-quarters of the polling stations; Party B’s (A’s) supporters will cluster in the remaining stations. Accordingly, in segregated constituencies, whether competitive or uncompetitive, partisans are more likely to live in their party-dominant community.

In partisan/non-segregated constituencies, each party’s supporters will be equally distributed across the polling stations. Accordingly, in competitive constituencies, each polling station will contain, on average, half each of  $P_A$  and  $P_B$  ( $P_{A \approx B}$ ) supporters (Column (2a)). In non-competitive, non-segregated constituencies dominated by Party A (B), its supporters will comprise, say, 75% of the voters in each polling station, on average, and those of Party B (A) will constitute the remaining 25% ( $P_{A > B}$ , Column (2b)).

I assume that voters know which party (A/B) supporters dominate their polling station/community and the electoral competitiveness of their constituency.

## 2.1 Theoretical expectations: crossing the party line for public goods

With these constituency types in mind, I examine when a voter,  $V$ , of Party A,  $V_A$ , will be persuaded to vote for an opposition candidate,  $C_B$ , who promises to provide high levels of public infrastructure. First, imagine that  $V_A$  lives in a partisan-segregated constituency (Figure 2 Column (1)). In such a setting,  $V_A$  should expect to receive fewer or no public infrastructure projects from a non-copartisan officeholder  $C_B$  because the partisan segregation of the constituency ensures that incumbents can target the communities that support them (Harris and Posner, 2019; Ejdeymyr, Kramon and Robinson, 2017).<sup>3</sup> Thus,  $V_A$  will not be persuaded by an opposition candidate  $C_B$ 's pledge to switch. Specifically, I argue that voters will be less likely to vote for a similar or better public-goods-promising opposition candidate (relative to a copartisan contestant) in a partisan-segregated constituency because they do not expect to benefit from such provision. Accordingly, I test the following hypothesis:

**Hypothesis H<sub>1</sub>:** *In partisan-segregated constituencies, partisans will be less likely to elect an opposition candidate over a copartisan aspirant promising similar or a higher level of public goods.*

However, the level of electoral competition may further shape  $V_A$ 's incentive to consider an opposition candidate's promise. In competitive electoral settings,  $V_A$  may be persuaded by aspirant  $C_B$ 's commitments because their vote can help elect such a public-goods-promising candidate and sanction them if they renege. In fact, high levels of electoral competition may encourage politicians to avoid discriminating among the electorate because they need to attract opposition voters (Kramer, 1983; Diaz-Cayeros, Estévez and Magaloni, 2016). That is, while incumbents *can* favor only their supporting communities in such partisan-segregated constituencies, the degree of competition implies that politicians may be forced to forgo their ability to discriminate between supporters and non-supporters. If true, this logic suggests that voters' preferences in competitive, partisan-segregated constituencies will be different from those found in segregated, non-competitive districts. My research design and data enable me to examine these alternative possibilities.

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<sup>3</sup>The findings of Harris and Posner (2019) and Ejdeymyr, Kramon and Robinson (2017) in Kenya and Malawi show that politicians can only target their supporters with public goods if they are spatially concentrated in distinct communities. Of course, some local public goods, such as roads and bridges, may help multiple communities that may not be the primary targets of the officeholders. Nonetheless, the primary beneficiaries are those in the catchment area of the polling station.



Second, imagine that  $V_A$  lives in a partisan/non-segregated electoral district (Figure 2 Column (2)) where supporters of both parties live side by side within the local communities. In such settings, candidate  $C_B$  will find it hard to exclude her non-copartisan  $V_A$  from using the public infrastructure she provides to any polling station or community (even if opponents are not her primary target) (Ichino and Nathan, 2013). Thus, citizens who reside in partisan non-segregated constituencies can expect to benefit from public goods provided by opposition officeholders equally. Accordingly, in *non-segregated electoral districts*, voters will equally prefer copartisan and non-copartisan candidates who promise to invest in local infrastructure because politicians cannot discriminate among voters. Yet this expectation may only hold in competitive settings, where voters expect that their vote can help elect a non-copartisan candidate who promises to deliver more local public goods.

In non-competitive settings, voters who are non-copartisans of a public-goods-promising candidate will downplay such a promise because it is not viable.<sup>4</sup> Moreover, voters cannot be excluded from the local public infrastructure that opposition incumbents provide.<sup>5</sup> Accordingly, I hypothesize that:

**Hypothesis H<sub>2</sub>:** *In competitive, partisan/non-segregated constituencies, partisans will be equally likely to select an opposition compared to copartisan candidate who promises a similar amount of public goods.*

**Hypothesis H<sub>3</sub>:** *In noncompetitive, partisan/non-segregated constituencies, partisans will be more likely to select a copartisan compared to non-copartisan aspirant promising a similar amount of public goods.*

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<sup>4</sup>A potential implication of this argument is that in non-competitive, partisan non-segregated settings, voters who belong to the minority group will be less likely to show up at the polls compared to those who align with the majority party. It is hard to test such a prediction using my forced-choice conjoint experiment. Moreover, examining the actual turnout rate for voters of the minority party in these settings may be misleading because presidential and parliamentary elections are held concurrently in Ghana. Accordingly, voters of the minority party may turn out to vote for the presidential candidate. In fact, I find similar reported turnout rates for minority and majority groups in partisan segregated non-competitive constituencies in my data. However, my argument is that, conditional on turning up, the promised public goods of a majority party's candidate will not sway a minority party's voter in such electoral setting.

<sup>5</sup>Indeed, partisans in the minority in uncompetitive/non-segregated settings can simply engage in a costly expressive voting.

### **3 Partisan voting and allocation of discretionary resources by MPs in Ghana**

Ghana's 25 years of stable democratic rule provides an ideal setting for this study. Ghanaians elect their MPs for four-year terms using plurality rule in single-member districts, which incentivizes legislators to provide constituency services to cultivate personal support (Cain, Ferejohn and Fiorina, 1987; Carey and Shugart, 1995). There are no term limits for MPs. Since the country's democratic transition in 1992, Ghana has held seven elections, which have been dominated by two parties — the National Democratic Congress (NDC) and New Patriotic Party (NPP) (Fridy, 2007; Gyimah-Boadi, 2009). While both parties have strongholds among the country's 275 constituencies that they have consistently won over time, the turnover rate among reelection-seeking incumbents is about 25% (Ofosu, 2019). About 63% of Ghanaians say that they feel close to a political party according to Afrobarometer data collected between 1999 and 2018 (R1 to R7).

The country's stable, competitive two-party system implies that citizens have reasonable expectations regarding partisan favoritism within their constituencies for at least two reasons. First, citizens cast their ballots at polling stations located within their communities. Election results are first announced at the polling station and then transferred to the Electoral Commission's district collation centers for aggregation. Thus, voters are reasonably aware of the level of support for each party in their community and across communities within the constituency. For example, through local radio reports and word of mouth, communities are labeled as pro-NPP (NDC) or mixed. I found this to be true through informal conversation with community residents during my fieldwork to pilot the survey.

Second, Ghana provides all MPs with equal amounts of individual CDFs, which are referred to as their "Common Fund." Similar to legislators in other developing countries, the country's MPs established these funds to deliver both private benefits and public goods (infrastructure) to address the gaps in public service delivery in their constituencies (Baskin, 2014). Ghanaian legislators have discretion over which individuals and communities benefit from their CDFs. Politicians often organize public events to announce beneficiaries, and public goods projects are embossed with signs indicating that the MP donated it from their CDF. Accordingly, citizens are aware of whether their communities have benefited, which allows them to assess whether they are likely to benefit in the future. Beyond the CDF, legislators, especially those who belong to the incumbent party, can influence where the president-appointed head

of their local government place projects in the constituency funded by the district assemblies' common fund.

Research on legislator–voter relationships in Ghana has provided significant insights into how MPs perceive their roles, how they respond to voters' expectations, and whether or not voters reward incumbents who offer private and public goods (Harding, 2015; Weghorst and Lindberg, 2013; Lindberg, 2010). Lindberg (2010) found that Ghanaian MPs believe voters are most likely to hold them accountable for personal assistance (e.g., school fees medical bills, start-up financing for small businesses or farms, building materials for personal homes) and community development projects (e.g., roads, schools, health clinics, toilets, and safe sewage). Ofose (2019) finds that MPs pay for a significant share of these demands using their CDFs.

However, we have limited knowledge about who (or which communities) MPs target with their CDFs during their terms in office. The small number of studies that have examined legislators' tactical allocation of resources suggest that under certain conditions, MPs may discriminate between supporters and opponents, but can be more inclusive in other circumstances (Asunka, 2017; Klaus and Paller, 2017). For example, Asunka (2017) finds that in constituencies where voters have a weak attachment to parties, legislators were more likely to forgo their discretion over the use of their CDFs to provide private benefits and public goods to win over weakly aligned voters. Klaus and Paller (2017) employ unique ethnographic data to explore why some Ghanaian MPs use inclusive campaign messages while others use exclusive appeals. They conclude that legislators are more likely to be inclusive when they need to reach out to non-coethnics in their constituencies to win. These studies imply that in competitive electoral settings, incumbents may be less likely to target their supporters with public goods and private transfers. Thus, citizens in competitive environments may equally prefer copartisan and non-copartisan aspirants who commit to providing local public goods.

In related studies on ethnic favoritism and voting behavior in Ghana's presidential elections, Ichino and Nathan (2013) and (Nathan, 2016) argue that citizens' expectations of ethnic bias in the allocation of public goods ensure that they consider the ethnic-partisan composition of their neighborhood in their vote choice. Specifically, voters who belong to a minority ethnic group may cross the ethnic-party line to vote for a presidential candidate from the majority group. Such tactical voting behavior ensures

that they benefit from the public infrastructure provided by the ethnic-majority incumbent. These findings suggest that the local partisan composition of constituencies may shape voters' expectations about whether they will benefit from an opposition candidate's pledge to provide public goods. Indeed, Briereley, Kramon and Ofori (2020) show that partisans were persuaded by the policy positions of candidates from their opposition in Ghana's 2016 parliamentary debates, but that such effects only held in competitive electoral areas over time. In contrast to these studies that focus on either partisan geography *or* electoral competition, I contend that both factors interact to shape voters' instrumental party voting behavior.

## **4 Research design**

To test my argument, I combined a three-step sampling procedure to select constituencies, communities, and respondents and a conjoint survey experiment to estimate the effect of a candidate's party ID and public goods promise on vote choice.

### **4.1 Sampling of constituencies, polling stations (communities), and respondents**

First, I took a stratified, nationally representative sample of twelve constituencies, grouping the country's 275 constituencies into competitive versus non-competitive and segregated versus non-segregated districts. I classified constituencies as competitive if MPs elected for 2013–2016 and 2016–2020 parliamentary terms won by a margin of 10% or less, and non-competitive otherwise (Ichino and Schündeln, 2012; Asunka et al., 2019). To assess a constituency's level of partisan segregation, I used an entropy index (Reardon and O'Sullivan, 2004).<sup>6</sup> The entropy index estimates the relative deviation from an even distribution of partisans (NPP and NDC supporters) across polling stations (communities) within a constituency. For example, if a party's candidate won, say, 51% or 20% of the constituency-level aggregate votes, but these votes were concentrated in distinct polling stations (communities), then such an electoral district is considered segregated (albeit competitive and non-competitive, respectively). However, if the candidate's share of votes (51% or 20%) were evenly spread across polling stations, it is deemed to be non-segregated (mixed or diverse) (again, competitive and non-competitive, respectively).

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<sup>6</sup>Details of the entropy measure are provided in Appendix E.

The entropy index ranges from 0 (the vote shares of party candidates in each polling station are, on average, equal to that for entire constituency) to 1 (a single party dominates each polling station in the constituency). Using polling station results for the 2016 parliamentary elections, I find that the entropy index ranges from 0.008 to 0.559 with a mean of 0.091. There are no set thresholds for classifying electoral districts as segregated. Therefore, I classified constituencies as (relatively) segregated if their entropy score was equal to or greater than the 90th percentile ( $\geq 0.172$ ) of the country's distribution. Because many of the constituencies in Ghana score relatively low on this measure, choosing such a threshold ensures sufficient conditions stipulated by theory in each constituency type.<sup>7</sup>

Table 1 shows the distribution of all 275 constituencies across the different electoral settings. I randomly selected three constituencies from each cell (further stratifying on the party affiliation of the incumbent MP).<sup>8</sup> Figure 2 displays examples of the distribution of support for NPP candidates in the 2016 election for segregated and non-segregated constituencies.

The second stage of my sampling process involved selecting polling stations (the primary sampling unit) within the sampled constituencies to conduct my interviews. In each constituency, I randomly picked ten polling stations. In segregated constituencies, because my argument concerns voters who live in their party strongholds, I focused on polling stations that either of the two major parties obtained 75% or more of the votes in the 2016 elections, a sufficiently party-dominant community. I randomly picked five NPP stronghold polling stations and five NDC strongholds to ensure I have partisan voters living in these different constituency areas. In non-segregated constituencies, I randomly selected ten polling stations from the list of all polling stations. Finally, following the Afrobarometer sampling protocol, my research assistants interviewed 17 citizens from each polling station. Overall, I sampled 2,040 respondents equally distributed across these cells, with about 510 residents in each stratum and approximately 170 respondents interviewed in each constituency.

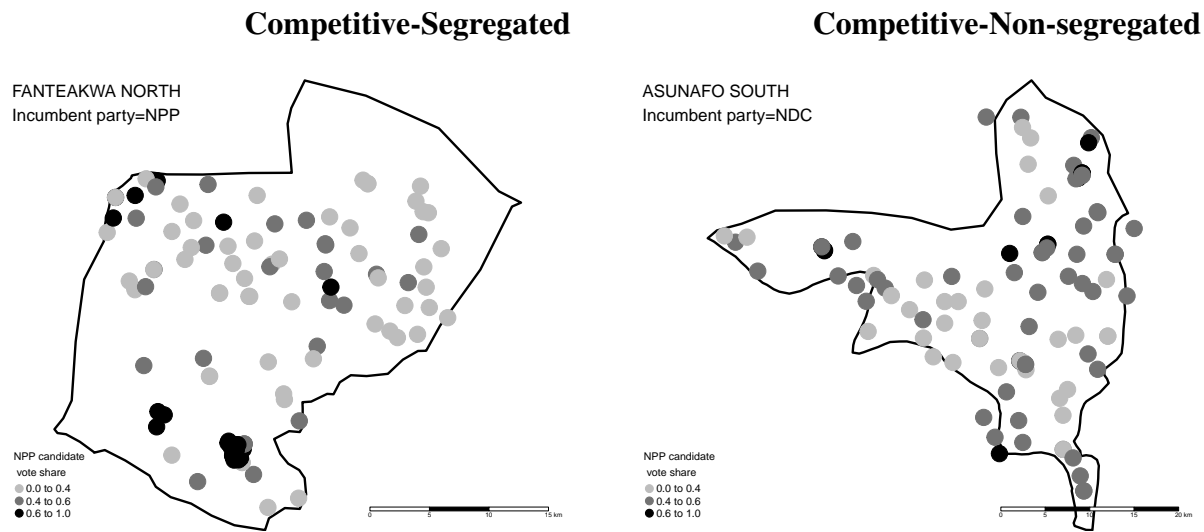
Table 1: Classification of constituencies

<b>Competition</b>	<b>Geographical distribution of NDC and NPP supporters</b>	
	Segregated	Non-segregated
Competitive	8	42
Non-competitive	20	205

<sup>7</sup>Appendix Figure E.1 shows the distribution of the entropy scores.

<sup>8</sup>Appendix Table E.1 displays the randomly selected constituencies in each cell with the names of the corresponding MPs and their party affiliations.

Figure 2: Spatial distribution of NPP candidates' polling station vote shares in illustrative sampled constituencies



*Notes:* Figure 2 shows the location of polling stations in a selection of sampled constituencies. The intensity of the color indicates the incumbent-party candidate's vote share in the 2016 election. Some points are slightly outside the constituency boundaries because of measurement error of the geocoordinates.

## 4.2 Measuring partisanship

I used a survey measure similar to a “feeling thermometer” to code respondents’ partisanship (Brader and Tucker, 2001). I asked respondents to rate, on a scale of 0–7, how close they are to the country’s two major parties, the NPP and NDC. I then multiplied their rating of the NPP by  $-1$  and added it to their rating of the NDC to generate a continuous variable that ranges from  $-7$  to  $7$ . Respondents with higher negative values are closer to the NPP, and those scoring higher positive values are closer to the NDC. Using the distribution of this outcome on the entire sample of respondents, I classified respondents in the lower tercile (33<sup>rd</sup> percentile) as NPP supporters and those in the upper tercile (66<sup>th</sup> percentile) as NDC supporters; those between are considered moderates. In line with my hypotheses, I restrict my analyses to partisans of the two parties. To avoid priming, I asked these questions after respondents took a conjoint survey experiment (described below) that I use to measure my dependent variable.

To assess the validity of my classification, I use data that I gathered on participants’ reported vote records and intention. Table 2 shows a strong relationship between my measure and reported past vote choice and intended vote in the country’s parliamentary race, providing confidence in the classification.

My use of a feeling thermometer to measure partisanship also helps to avoid the use of actual votes, which may be endogenous to the strategic investment of parties (Larcinese, Snyder Jr and Testa, 2013).

Table 2: Relationship between respondents’ partisanship as classified and reported vote choice in prior (and future) parliamentary elections

Election year Vote choice	Classification of respondents into partisan groups											
	NPP	Moderate	NDC	NPP	Moderate	NDC	NPP	Moderate	NDC	NPP	Moderate	NDC
	2018 (intention)			2016			2012			2008		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
NDC	0.07	0.42	<b>0.93</b>	0.05	0.36	<b>0.87</b>	0.07	0.39	<b>0.90</b>	0.09	0.41	<b>0.89</b>
NPP	<b>0.88</b>	0.45	0.04	<b>0.95</b>	0.61	0.12	<b>0.93</b>	0.58	0.09	<b>0.90</b>	0.55	0.10
CPP	0.01	0.03	0.01	0.00	0.02	0.00	0.00	0.02	0.00	0.01	0.02	0.00
PPP	0.00	0.03	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other	0.03	0.07	0.01	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.01	0.00
Respondents	637	508	629	600	487	584	590	471	568	538	402	510

Note: Regarding vote choice in prior elections, respondents were asked which party’s candidate they voted for in the said elections whereas for vote choice for 2018 (intention) refers to respondents’ answers to the question: “which party’s parliamentary candidate would you vote for if the election were held [today].” Column (1) shows the options.

### 4.3 Conjoint survey experiment

To assess whether partisans are more or less likely to choose an opposition candidate promising a similar or more public goods as a copartisan politician in a given electoral setting, I use data from a forced-choice conjoint survey experiment. Survey respondents were asked to choose between two hypothetical MP candidates to represent their constituency with a set of attributes including their partisanship and how they plan to allocate their CDF to provide private and public goods. Because values of each attribute were randomized, I can simultaneously estimate the average marginal component effect (AMCE) of each attribute’s levels on vote choice (Hainmueller, Hopkins and Yamamoto, 2013).

Importantly, the forced-choice conjoint survey design also helps to estimate the *average combination effect (ACE)* of a combination of values of a subset of attributes relative to a pre-specified baseline (Egami and Imai, 2019). Thus, I can assess, for example, whether partisans are more or less likely to choose an opposition candidate with a high promised public goods compared to a copartisan aspirant committing to the same or a lower amount public goods.

To design the survey, I drew on a combination of qualitative and quantitative information on Ghanaian parliamentary aspirants. I assembled the profiles of all candidates who contested the 2016

general election from the website of the country’s Electoral Commission. The data contained each candidate’s name, party affiliation, gender, place and year of birth, level of education, and profession. I used this information to generate plausible levels of attributes regarding a candidate’s party, gender, profession, and place of birth, which increases the external validity of the survey design.<sup>9</sup>

Crucial to testing my hypotheses, in the conjoint survey, I used how a candidate’s promise to spend more of their CDF on public work influences the level of support from respondents. Specifically, I generated four potential allocations of an incumbent’s CDF between public and private goods ( $P_{\text{public}(\% \text{ CDF}),\text{private}(\% \text{ CDF})}$ ).<sup>10</sup> At the extreme ends, politicians promised to use their funds to provide mainly public goods ( $P_{\text{public}(90\% \text{ CDF}),\text{private}(10\% \text{ CDF})}$ ) or private goods ( $P_{\text{public}(10\% \text{ CDF}),\text{private}(90\% \text{ CDF})}$ ). In another treatment arm, they promised to divide their fund equally between each ( $P_{\text{public}(50\% \text{ CDF}),\text{private}(50\% \text{ CDF})}$ ). I use minimal spending on each type,  $P_{\text{public}(10\% \text{ CDF}),\text{private}(10\% \text{ CDF})}$ , as the baseline category, because some MPs spend very little of their funds.<sup>11</sup>

In addition to randomizing how candidates promise to spend their CDFs, I also included how often they pledge to help individuals navigate the government bureaucracy (i.e., casework), visit the constituency, meet and listen to constituents’ concerns, and attend or support social events (including attending funerals, religious services, and traditional festivals). The values for each of these attributes were randomly assigned. In this paper, I assess the impact of promised CDF allocations and party affiliation of candidates; I systematically analyze the other dimensions in a complementary paper.<sup>12</sup>

Columns (1) and (2) of Table 3 show the abridged set of attributes (i.e., partisanship and CDF spending) and the levels I used in the experiment.<sup>13</sup> Column (3) displays the probabilities assigned to each attribute. All respondents (“voters”) were presented with three “voting tasks” in which they

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<sup>9</sup>To reduce the cognitive burden on respondents, I did not include age or education in the survey.

<sup>10</sup>Oforu (2019) confirms that MPs use their CDFs to provide private benefits and local public goods. This study also shows significant variation in CDF utilization.

<sup>11</sup>Ideally, one would use no spending as the baseline. However, because voters may not consider CDF spending in their choice of MPs in the first place, choosing a 0% use of CDF could simply prime respondents rather than elicit a genuine response.

<sup>12</sup>Appendix Table C.1 shows the results of all the attributes in the full sample. Among the other factors considered in the conjoint survey, only the impact of the promise to organize regular community (at least once every six months or more) is as important as the pledge of local infrastructure from the CDF in determining respondents’ choice.

<sup>13</sup>Appendix Table B.1 shows the full set of characteristics and their levels. I piloted the survey in the following constituencies: Awutu Senya West (competitive and segregated), Sege (non-competitive and non-segregated), and Krowor (competitive and non-segregated) in August 2018.



were asked to choose between two hypothetical candidates competing for the next election in their constituency. Appendix Figure B.1 shows an example of one choice presented to a respondent. The profiles were presented side by side, each pair on a separate screen. Appendix Table A.3 shows that the order in which the profile appeared did not affect the results. The attributes were presented in a randomized order that was fixed across the three pairings for each respondent to ease the cognitive burden for respondents and minimize primacy and recency effects. Appendix Table A.2 shows that the randomization was successful. Controlling for a few variables that were not balanced across treatments, as expected by chance, does not change the results.

To estimate the intensity of voters’ preferences for various candidate profiles (and to encourage attentiveness to the narratives), I combined the conjoint survey design with a unique behavioral measure. Respondents were given GHC 2 and asked to donate GHC 0.5–2 to their preferred candidate to measure the intensity of this preference; survey participants were told that we would give the total amount raised in each constituency to the candidate with the set of attributes that most voters preferred.<sup>14</sup> Appendix B shows the interview procedure and the narrative presented to respondents.

Table 3: Values of candidates’ CDF promise and partisanship in the conjoint survey

Candidate attribute	Attribute levels	Probabilities
Political Party	Independent (IND)[1]	1/3
	New Patriotic Party (NPP)[2]	1/3
	National Democratic Congress (NDC)[3]	1/3
Use of MP’s Common Fund (CDF)	[Levels: (1) 10%; (2) 50%; (3) 90% ] of MP’s CDF to support the construction or renovation of community schools and clinics, repairs of roads and bridges, and other community self-help projects. [Levels: (1) 10%; (2) 50%; (3) 90% ] of MP’s CDF to pay school fees, medical bills, and apprenticeship fees for some individual constituents. [Use levels:	
	P <sub>10,10</sub> [1]	1/4
	P <sub>50,50</sub> [2]	1/4
	P <sub>10,90</sub> [3]	1/4
	P <sub>90,10</sub> [4]	1/4

## 5 Results

<sup>14</sup>It was not possible to donate research funds to political parties due to rules by the researcher’s funders. Instead, I used the money to co-sponsor a dissemination workshop with the Ghana Center for Democratic Development, a reputable civil society organization dedicated to the promotion of issue-based campaigns, to share the findings with parties, candidates, and the general public. The workshop was broadcast live on radio and TV. The state newspaper also published the results See: “CDD releases report on why people vote for MPs.” Naturally, the setup of conjoint surveys ensures that half of the profiles are selected by respondents, while the other half is not. Accordingly, 50% of the profiles received 0 GHC in donations. The modal donation to a preferred candidate profile was 1 GHC (43%). More than a third gave the minimum required donation of 0.5 GHC (33.7%). Appendix Figure B.2 shows these results.

## 5.1 Estimating the AMCE of candidates' pledged CDF allocations and Party ID

I start my analysis by estimating the AMCE of promised CDF allocation and party ID on respondents' vote choice, providing evidence that each factor has an independent causal effect on vote choice.<sup>15</sup> The analysis unit is a rated *profile*, and the dependent variable is coded 1 for the preferred candidate profile within a pair, and 0 otherwise.<sup>16</sup> The independent variables are all dummy variables for each of the nine attribute levels (although I focus on results for two attributes in this paper). Because respondents took three voting tasks and entered the dataset multiple times, I cluster standard errors at the respondent level to account for the non-independence of responses. Also, to ensure that I am comparing individuals within the same electoral district, I include constituency fixed effects.

Figure 3 shows how values of promised CDF allocations and party ID affect preferences for candidates in the full sample. The figure displays the AMCEs (points) and 95% confidence intervals (bars).<sup>17</sup> As expected, the results suggest that citizens prioritize the promise of public goods in their vote choice (relative to individual financial benefits). Regarding public goods, citizens are 12.5 percentage points (pp) and 13.5 pp more likely to prefer a candidate who promised to spend half ( $P_{\text{pub}(50\%),\text{priv}(50\%)}$ ) or almost all ( $P_{\text{pub}(90\%),\text{priv}(10\%)}$ ) of their CDF to provide public infrastructure, respectively, compared to those who promised to use only a small amount on private and public goods ( $P_{\text{pub}(10\%),\text{priv}(10\%)}$ ). These estimates are statistically significant at  $p < 0.01$ . The promise to use a lion's share of the CDF ( $P_{\text{pub}(10\%),\text{priv}(90\%)}$ ) to provide private financial benefits to constituents increases the probability of choosing a candidate by only 7 pp ( $p < 0.01$ ) relative to the baseline.

Accordingly, consistent with the findings from prior research, citizens prefer candidates who will use their CDFs to provide more, rather than less, private and public goods. Nonetheless, conditional on spending more of their CDFs, these results indicate that respondents prefer politicians who would use their funds to provide local public infrastructure rather than individual transfers. In Appendix Figure C.1, I show that these results are similar for the different partisan groups.

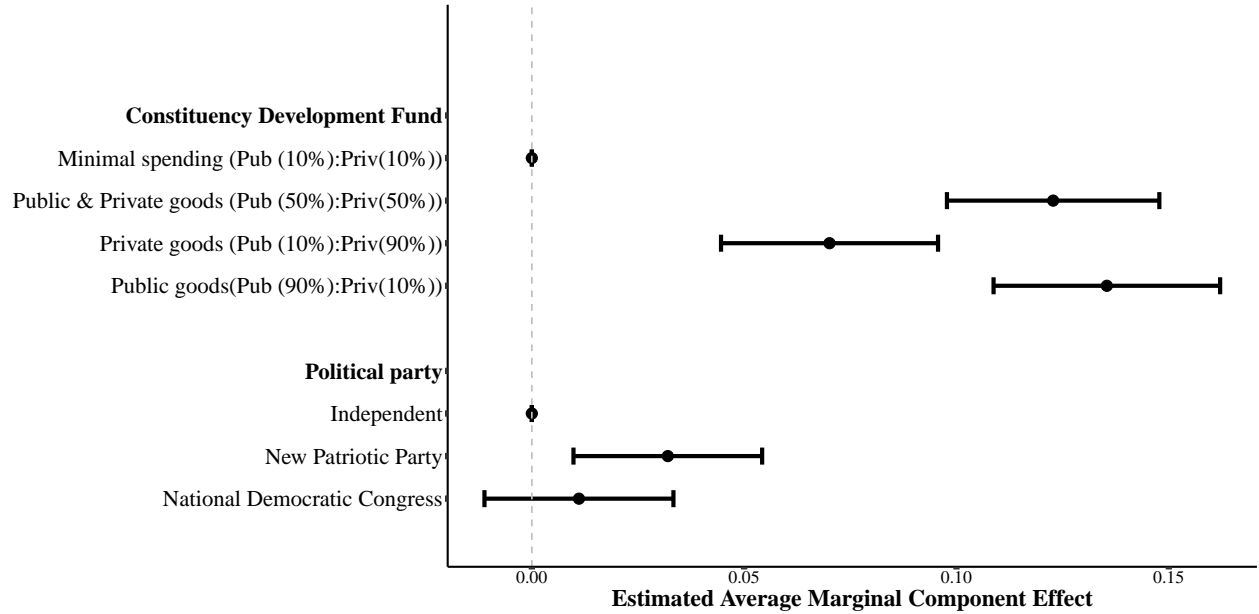
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<sup>15</sup>Abramson, Koçak and Magazinnik (2019) warns against interpreting the AMCE as “true preference of the majority.” I use “prefer” to indicate that respondents put more weight on a particular attribute value relative to the baseline (conditional on other randomized attributes) in their voting decision.

<sup>16</sup>Using respondents' donations to their chosen profiles as the dependent variable produces similar results (see Appendix C Table C.1, Columns (3) and (4)).

<sup>17</sup>Appendix C Table C.1, Columns (1) and (2), shows the full regression results.

Figure 3: Average marginal causal effect of a candidate’s promised CDF allocation on being preferred as an MP



Notes: Figure 3 shows estimates of the effects of randomly assigned candidate’s promised allocations of CDFs to private vs. public goods and party ID on respondents’ vote choices. These estimates are based on an ordinary least squares (OLS) model with standard errors clustered at the respondent level as shown in Appendix C Table C.1. The points without horizontal bars (95% confidence intervals) represent the reference category of the attribute.

Nonetheless, Figure 3 also shows that, in line with the literature, respondents were 3 pp more likely to pick candidates who belonged to the ruling executive party (NPP) over independent (and opposition) aspirants (Vicente and Wantchekon, 2009; Bleck and van de Walle, 2018). Together, these results indicate that voters consider promises of public goods and the party ID of candidates when selecting MPs.

## 5.2 When do partisans cross cross party lines?

To test my hypotheses, I focus on two *average combination effects* (ACEs) – a noninteractive causal effect (Egami and Imai, 2019). First, I estimate the difference in means of selecting an opposition versus a copartisan candidate profile for the same amount of promised public goods. Specifically, I estimate:

$$\tau_{PC}(p_1, c_j, p_0, c_j) = E\{Y_i(p_1, c_j)\} - E\{Y_i(p_0, c_j)\}$$

where  $E\{Y_i(p_1, c_j)\}$  is the mean of selecting a profile  $i$  with a copartisan candidate,  $p_1$ , and a promised amount of public good,  $c = j$ , and  $E\{Y_i(p_0, c_j)\}$  represents that of a profile containing an opposition politician,  $p_0$ . I estimate these causal effects,  $\tau_{PC}(p_1, c_j, p_0, c_j)$ , in the full sample and in each constituency type.

Second, I estimate the ACEs of selecting a profile  $i$  with an opposition candidate,  $p_0$ , and a promised high amount of public good,  $c_j = \text{high}$  (i.e.,  $P_{\text{pub}(90\%),\text{priv}(10\%)}$ ) over a copartisan profile,  $p_1$ , with a minimal pledge of public goods,  $c_j = \text{low}$  (i.e.,  $P_{\text{pub}(10\%),\text{priv}(10\%)}$ ). Specifically, I calculate:

$$\tau_{PC}(p_0, c_{j=\text{high}}, p_1, c_{j=\text{low}}) = E\{Y_i(p_0, c_{j=\text{high}})\} - E\{Y_i(p_1, c_{j=\text{low}})\}$$

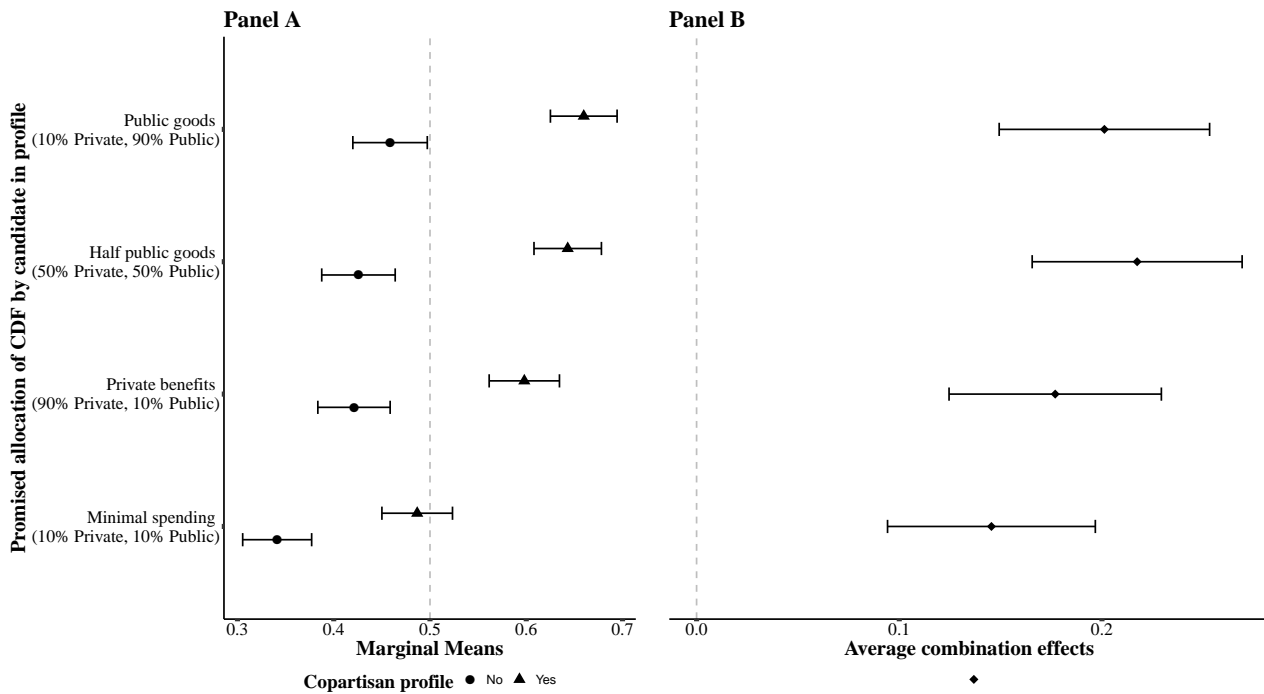
Again, I estimate  $\tau_{PC}(p_0, c_{j=\text{high}}, p_1, c_{j=\text{low}})$  for the full sample and in each constituency type. I also estimate  $\tau_{PC}(p_0, c_{j=\text{high}}, p_1, c_{j=\text{low}})$  with  $P_{\text{pub}(10\%),\text{priv}(90\%)}$  as the reference category to assess whether partisan switches are driven more by the desire for public goods.

### 5.2.1 Are voters more or less likely to select an opposition relative to a copartisan candidate promising the *same* amount of public goods?

Figure 4 displays the marginal means of selecting a candidate at the different values of promised CDF allocation by shared partisanship (Panel A) and the corresponding ACEs (Panel B) in the full sample. The results in Figure 4 show that, for the same amount of promised public infrastructure, respondents were more likely to pick a copartisan over an opposition politician. For example, voters were 14.5 pp (se 2.6,  $p < 0.01$ ) more likely to select a copartisan (48.7%), compared to a non-copartisan (34.1%), aspirant's profile when she promised to use only a minimal amount of their CDF to provide private and public benefits ( $P_{\text{pub}(10\%),\text{priv}(10\%)}$ ). Similarly, participants were 20 pp (se 2.6,  $p < 0.01$ ) more likely to select a copartisan candidate (66%) compared to a non-copartisan aspirant (45.9%) for the same commitment to spend 90% of CDF on public works ( $P_{\text{pub}(90\%),\text{priv}(10\%)}$ ). Indeed, at each level of promised public goods from the CDF, respondents were significantly more likely to select a copartisan over a non-copartisan politician.

Figure 5 disaggregates these results by constituency type. Consistent with my hypothesis, the results in Figure 5 Panel B show that voters were more likely to select a copartisan candidate for a

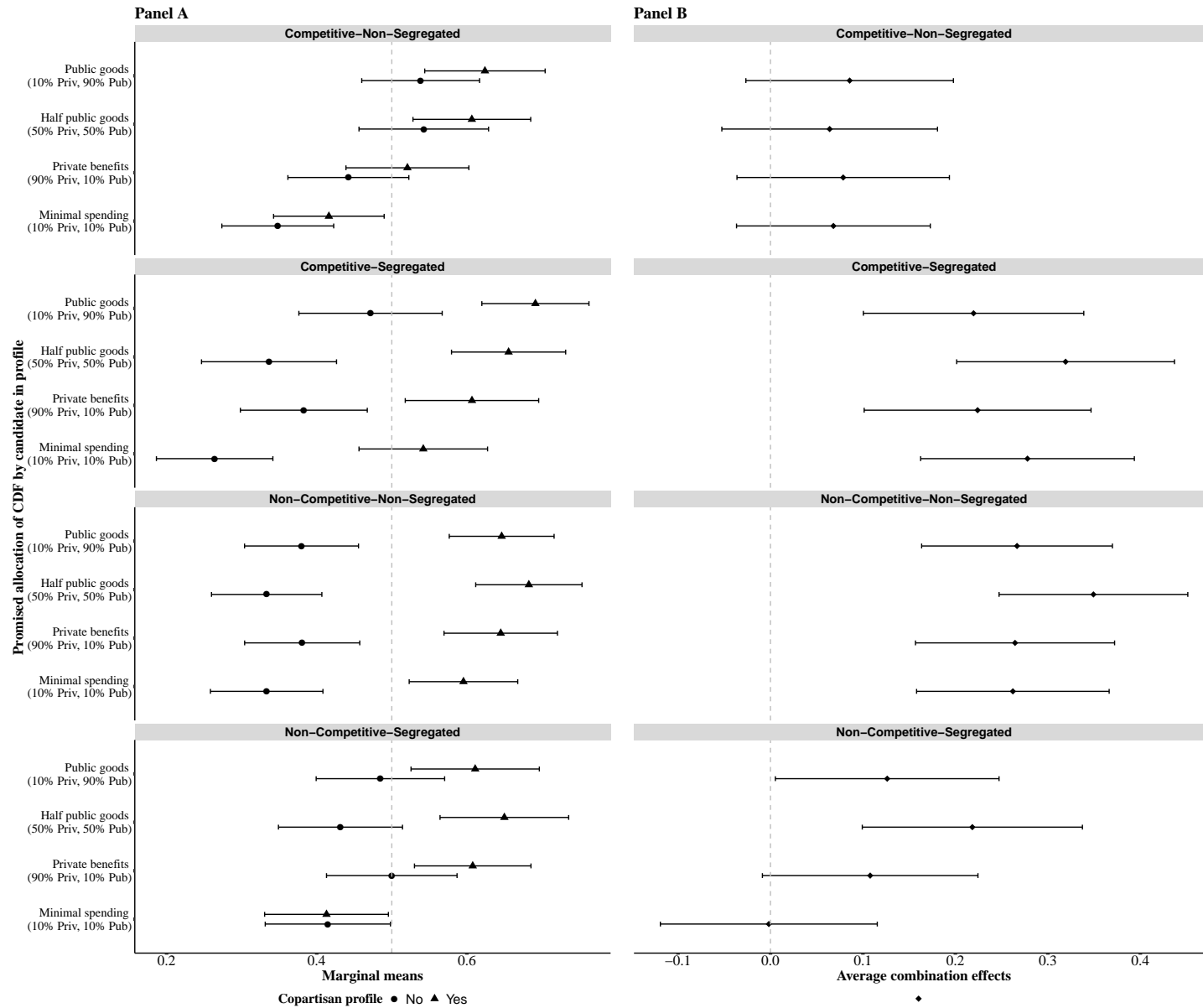
Figure 4: ACE of choosing copartisan over an opposition politician with the same amount of promised public goods



Notes: Figure 4 Panel A shows the means of selecting a profile with randomly assigned promised CDF allocations and party ID of hypothetical candidates. The means for copartisan aspirants are represented by triangle and that of non-copartisan candidates by the solid circles. The vertical bars represents 95% confidence intervals. Panel B shows the corresponding average combination effect with 95% confidence intervals.

similar amount of promised public goods than an opposition candidate in all electoral settings except for partisan-nonsegregated constituencies that were competitive. In nonsegregated/competitive electoral districts, partisans were equally likely to select a copartisan versus an opposition politician with the same amount of promised public goods. Recall that these are the settings where (1) an opposition incumbent cannot exclude non-supporters from using provided public infrastructure in a community and (2) where partisans' votes can be pivotal in selecting a similar or better opposition candidate.

Figure 5: ACE of choosing copartisan over an opposition politician with a similar amount of public goods by constituency type



Notes: Figure 5 Panel A shows the means of selecting a profile with randomly assigned promised CDF allocations and party ID of hypothetical candidates. The means for copartisan aspirants are represented by triangle and that of non-copartisan candidates by the solid circles. The vertical bars represents 95% confidence intervals. Panel B shows the corresponding average combination effect with 95% confidence intervals.

### 5.2.2 Are partisans more or less likely to select an opposition candidate promising *more* public goods relative to a copartisan pledging a minimal amount?

Figure 6 shows the estimated ACEs of selecting an opposition aspirant with a higher promise of public goods over to copartisan with a pledged minimal supply of public good (i.e.,  $\tau_{PC}(p_0, c_{j=\text{high}}, p_1, c_{j=\text{low}})$ ) in the full sample and by constituency type. In the full sample, the results indicate that partisans were equally likely to pick an opposition candidate pledging a high amount of public goods compared to a copartisan aspirant promising a minimal spending on public goods (and private benefits). Thus, in the full sample, partisans were more likely to pick a copartisan when the amount of promise public goods from the opposition is the same, and only equally likely to pick either when the non-copartisan politician pledge a high quantity of public works.

Disaggregating these results by constituency type, I find that partisans in competitive/nonsegregated electoral districts were 12 pp (se 5.49) more likely to cross party lines to elect an opposition candidate promising more public goods relative to a copartisan aspirant pledging a minimum amount. In other electoral settings, partisans were either equally likely or even less likely to pick a non-copartisan candidate. Specifically, in competitive/segregated electoral constituencies, partisans were 7 pp (6.54) less likely to choose such an opposition candidate, but this estimate is not significant, suggesting an equal likelihood. In noncompetitive/nonsegregated constituencies, partisans were about 22pp (5.35) less likely to select such non-copartisan politicians. In noncompetitive/segregated constituencies, voters were about 7 pp (6.06) more likely to choose the better opposition, but, again, this increase is not statistically significant.

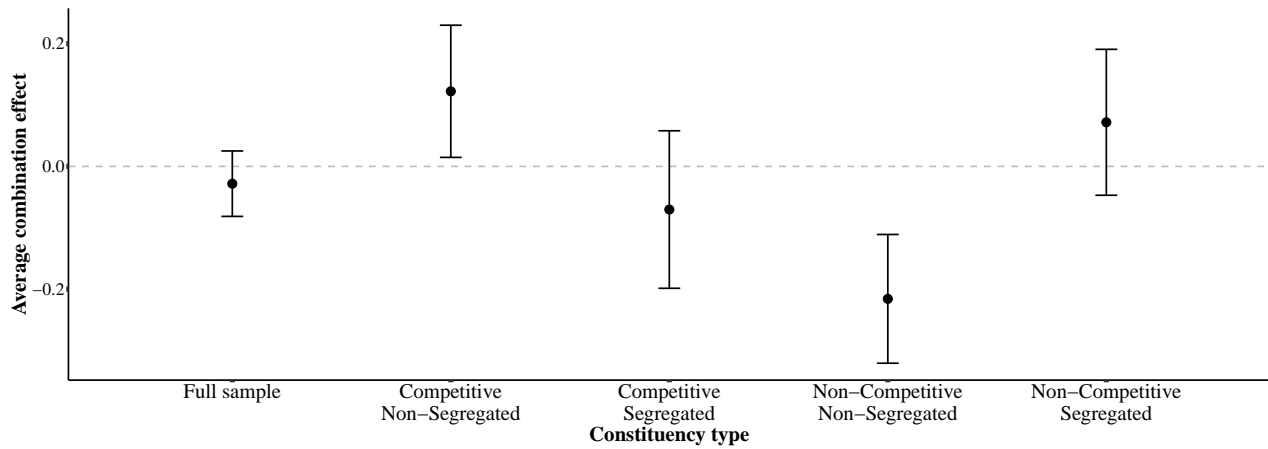


Figure 6: ACE of choosing an opposition promising a higher amount of public infrastructure relative to a copartisan pledging a minimal amount of public goods in full sample and by constituency type

Of course, the baseline I chose for my comparison is for when a copartisan had pledged less of both private and public goods,  $P_{\text{pub}(10\%),\text{priv}(10\%)}$ . However, with a pledge of minimal public goods, copartisan may commit to allocate more of their funds to private benefits,  $P_{\text{pub}(10\%),\text{priv}(90\%)}$ . Figure 7 shows the estimated ACEs for when a copartisan makes such a commitment (as my reference category). The estimates indicate that when a copartisan pledged a minimal amount of public goods but a high amount of personal benefits, partisans were significantly less likely to vote for an opposition candidate across electoral settings except competitive/non-segregated constituencies. In competitive/non-segregated constituencies, partisans were equally likely to choose a copartisan or a non-copartisan politician, suggesting that voters were willing to substitute a more public-goods-promising opposition candidate for a greater-private-benefits-promising copartisan.



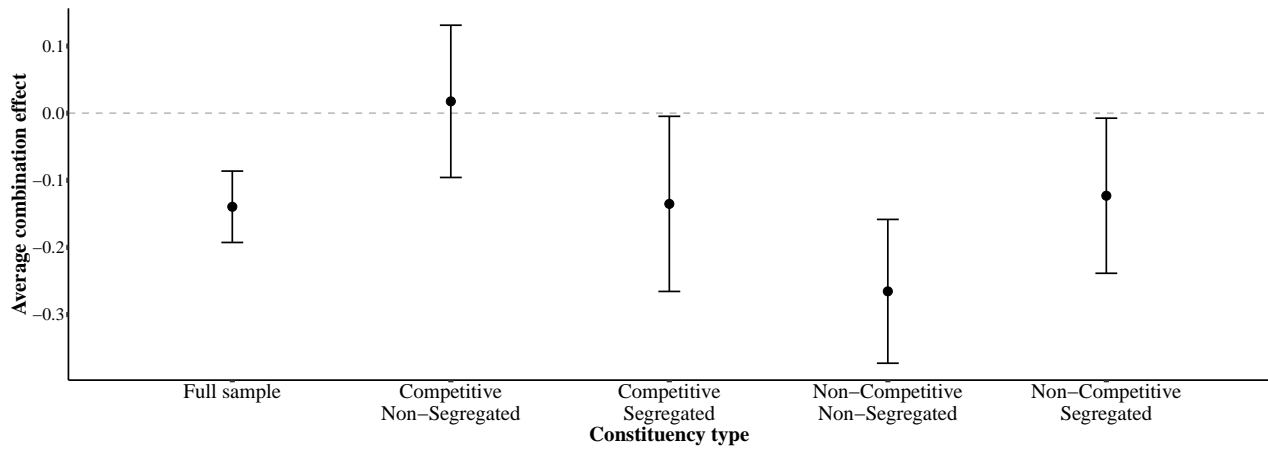


Figure 7: ACE of choosing an opposition promising a higher amount of public infrastructure relative to a copartisan pledging a minimal amount of public goods but high private benefits in full sample and by constituency type

In summary, my results suggest that, for the same amount of promised public goods, partisans are willing to substitute opposition for copartisan aspirants in competitive/non-segregated constituencies. Partisans are more likely to choose an opposition politician when they pledge more public infrastructure relative to a copartisan aspirant in competitive/non-segregated electoral districts. In other constituency types, voters are more likely to select a copartisan over an opposition politician promising equal or even more public works.

## 6 Mechanisms and alternative explanations

I argue that partisans are more likely to cross party lines when they believe that (1) they will benefit from the public goods provided by an opposition politician and that (2) their vote will be pivotal. I suggested that residing in a non-segregated, competitive electoral districts can provide this double assurance. An observable implication of my proposed theory is that partisans living in non-segregated constituencies are likely to equally believe that a copartisan or an opposition politician will deliver public goods to their community. In contrast, party supporters living in segregated districts are more likely to expect public goods from a copartisan for their community than from a non-copartisan politician. I draw on survey data that I collected immediately after respondents took the conjoint experiment to assess these implications.

In the survey, I asked respondents if they expect their incumbent MP to deliver public infrastructure to their community before the end of their current term.<sup>18</sup> Figure 8 displays the proportion of copartisans and non-copartisans of the MP who expect to receive public infrastructure. I display the results in both the full sample and disaggregated among the four constituency types. Appendix D Table D.1 shows the OLS regression estimating the difference in proportions.

In the full sample, copartisans of a sitting legislator were 32 pp more likely to say that they expect him to provide public infrastructure for their community compared to his non-copartisans. This finding is in line with Nathan (2016) who uses a survey experiment to show that (urban) voters expect favoritism from a coethnic party relative to a non-coethnic party.

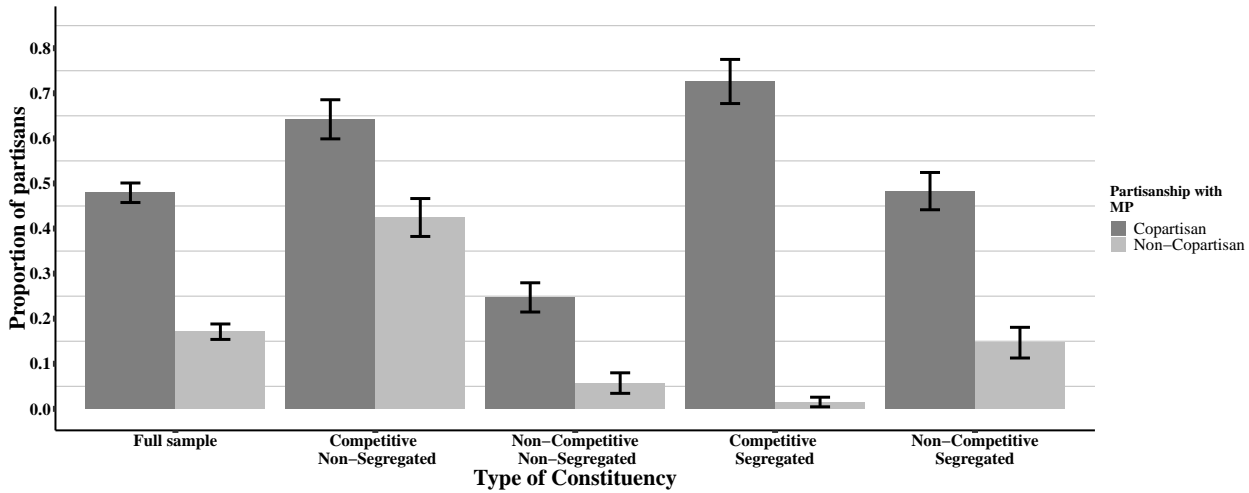
Consistent with my theory, when I disaggregate these results by constituency type, officeholders' expected partisan bias among party supporters is much lower in non-segregated constituencies than segregated constituencies. Specifically, in non-segregated, competitive constituencies, copartisans of the MP are 17 pp more likely to expect infrastructure than his non-copartisans, and, similarly, 15pp in non-segregated, non-competitive constituencies. This is compared to 70 pp ( $p < 0.05$ ) and 31 pp ( $p < 0.01$ ) differences in segregated/competitive constituencies and segregated/non-competitive districts, respectively. Appendix D Table D.2 shows the corresponding results for reported – as opposed to expected – receipt of public infrastructure from the MP during the current term. The results are similar to that of public goods expectations, displaying much larger differences in segregated constituencies.

I note that there are still statistically significant differences in expectations to receive public goods from a copartisan versus non-copartisan MP in nonsegregated constituencies. But these differences may represent partisan bias in the responses (Carlson, 2016). However, what is essential for my argument is that the differences are significantly lower than in segregated places, not that there is no difference at all.

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<sup>18</sup>The survey was conducted roughly two years before the next parliamentary election.

Figure 8: Voters' perceptions of MP's partisan favoritism in the allocation of public infrastructure by constituency type, by the theorized constituency types



The results in Figure 8 also show that the differences in public goods' expectations are similar in nonsegregated/competitive and nonsegregated/non-competitive districts. These results, combined with the conjoint experiment results, highlight the key role that competition plays in influencing vote choice. Together they suggest that even though perceptions of partisan favoritism is relatively muted in all non-segregated districts, opponents are only able to win over supporters of the opposition in districts that are also competitive.

Finally, I consider three alternative explanations of the results I find. First, we may observe instrumental partisan switching in nonsegregated/competitive electoral districts because party supporters are more concerned about infrastructure development in these areas – perhaps, because of a deficit – than partisan loyalty relative to those in other constituencies. Table 4 demonstrates overall similarity in the sample communities in terms of infrastructure provision. Communities in nonsegregated/competitive constituencies are either equally or more endowed with piped water, cell phone services, post offices, schools, police stations, and clinics. They are, however, less endowed with paved roads. Further, I asked respondents why they voted for a candidate in the previous (2016) elections, partisans in nonsegregated/competitive constituencies were significantly less likely to say they voted because a candidate promised to bring infrastructure compared to other settings (Figure 9). Instead, they were more likely to say that the person they chose was a “good person” or promised individual benefits. These results suggest

that partisans in nonsegregated/competitive constituencies were not likely to switch because they were *overly* concerned with the need for infrastructure compared to party supporters elsewhere.

Table 4: Summary statistics of polling station characteristics by constituency types

	Competitive		Non-competitive		P-value (F-statistics)
	Non-segregated	Segregated	Non-segregated	Segregated	
Electricity	0.867 (0.346)	0.833 (0.379)	0.893 (0.315)	0.933 (0.254)	0.683
Pipe water	0.667 (0.479)	0.433 (0.504)	0.308 (0.471)	0.414 (0.501)	0.047
Mobile service	1 (0)	0.867 (0.346)	0.857 (0.356)	0.900 (0.305)	0.218
Post office	0.133 (0.346)	0.143 (0.356)	0 (0)	0.069 (0.258)	0.199
School	0.967 (0.183)	0.833 (0.379)	0.964 (0.189)	0.967 (0.183)	0.102
Police station	0.233 (0.430)	0.133 (0.346)	0.214 (0.418)	0.267 (0.450)	0.639
Clinic	0.500 (0.509)	0.517 (0.509)	0.607 (0.497)	0.667 (0.479)	0.535
Bank	0.233 (0.430)	0.167 (0.379)	0.037 (0.192)	0.333 (0.479)	0.039
Paved road in village	0 (0)	0.067 (0.254)	0.071 (0.262)	0.367 (0.490)	0.00004
Paved roads 5km to village	0 (0)	0.200 (0.407)	0.143 (0.356)	0.367 (0.490)	0.002
Road condition in village (very)good	0.267 (0.450)	0.433 (0.504)	0.393 (0.497)	0.300 (0.466)	0.504

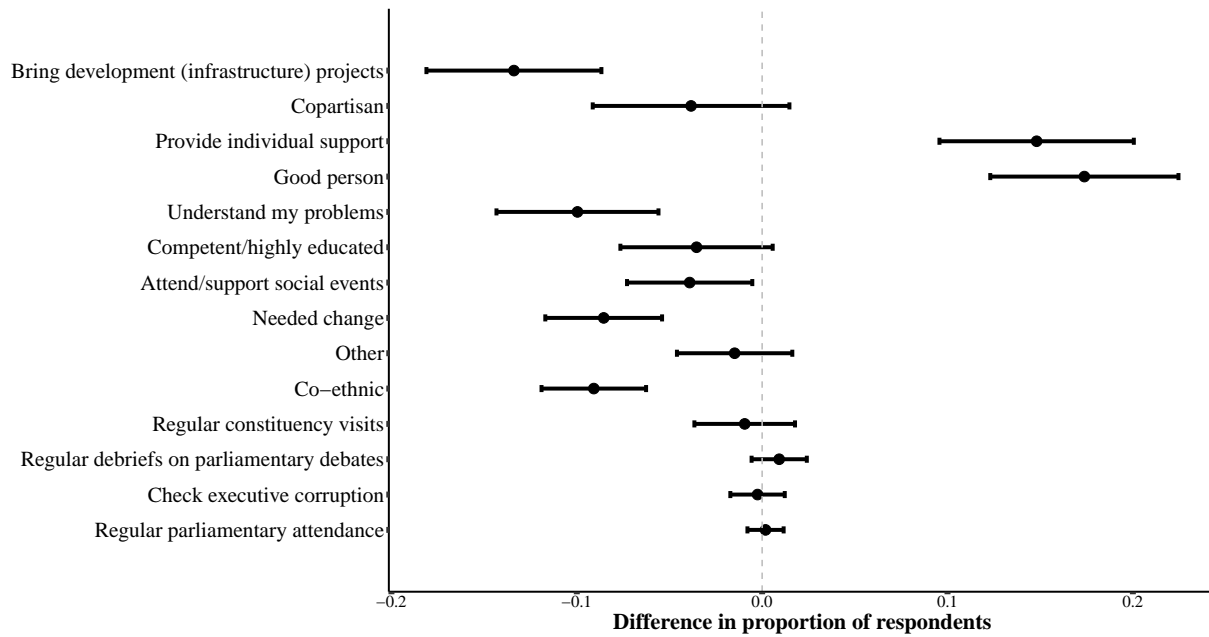


Figure 9: Differences in the top three reasons why partisanship was chosen as a top reason for voting in the 2016 parliamentary race in nonsegregated/competitive versus other constituency types

Second, I do not find support for the argument that partisanship is weaker in nonsegregated/competitive constituencies. Partisans in nonsegregated/competitive areas, compared to other constituency types, were equally likely to mention partisanship as one of the top three reasons they voted for a particular candidate, suggesting they were no less partisan. Further, Figure 10 shows that respondents in nonsegregated/competitive constituencies were in fact *more* likely to say they felt closer to a political party than in other types of constituencies.

Finally, the causal estimates in each electoral setting are independent of individual characteristics, on average. However, sampled participants may differ in theoretically important ways across these constituency types. Figure 10 shows that an equal proportion of males and females were interviewed across settings, suggesting gender cannot explain the results. Participants were equally knowledgeable across locations. Specifically, respondents were similarly likely to obtain their information from radio, know the MP's name, and reported to have voted in the 2016 elections.

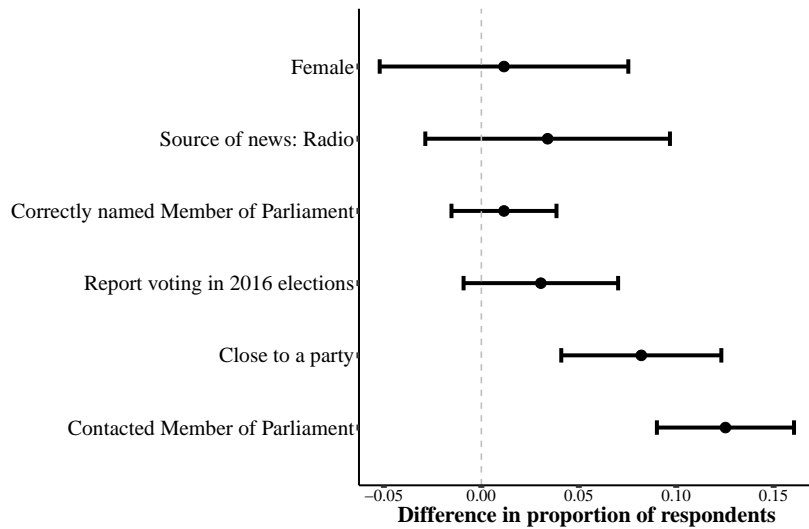


Figure 10: Differences in reported characteristics and political behavior of partisans in nonsegregated/competitive versus other constituency types

## 7 Conclusion

In this article, I combine data from a conjoint experiment and survey responses from citizens sampled from a stratified, nationally representative sample of constituencies in Ghana to examine when partisans are likely to cross party lines to elect opposition politicians. Drawing on theories of instrumental partisan-ethnic voting and electoral accountability, I argue that two constituency-level factors jointly shape a voter’s incentive to cross party lines: the partisan geography and level of electoral competition of their district. Using qualitative and experimental data, I first show that citizens prefer politicians who will provide local public goods (i.e., bring development to their community). However, scholarly work suggests that because voters often assume that politicians will only target their supporting communities when distributing the resources under their control, they are unlikely to cross party lines even if there is a similar or better opposition candidate who will provide more of such benefits.

These instrumental theories of voting, which are often premised on presidential elections, assume that supporters of competing parties are clustered in distinct communities or regions. Prior empirical tests of these theories have also held the level of electoral competition fixed. This paper provides a unified theory of instrumental voting by relaxing these assumptions and considering how different configurations of

partisan geography and electoral competition of constituencies shape the voting calculus of voters who desire public goods. I argue and show that voters are only likely to cross party lines in constituencies when the risk of being excluded from public goods provided by an opposition incumbent is minimal – i.e., in partisan non-segregated constituencies where supporters of multiple parties are intermixed in constituent communities. However, I show that this result only holds in partisan non-segregated constituencies that are also competitive, suggesting that voters only cross party lines when their votes can be pivotal in selecting a competent opposition politician or sanctioning her should she renege. Together, these results show that voters only have an incentive to cross party lines in electoral settings where an opposition incumbent cannot exclude them from provided public goods, and their votes can be essential in electing and holding an opponent politician accountable. In other contexts, voters either fear their non-copartisan officeholder will target only their supporting communities with public infrastructure, or that they cannot help elect (or sanction) a desirable opposition candidate.

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# Online Appendix

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## A Summary statistics of sample constituencies and respondents

Table A.1: Summary statistics of respondents' characteristics

Statistic	N	Mean	St. Dev.	Min	Max
Age	2,016	38.937	14.730	18	95
Job with cash income	2,022	0.572	0.495	0	1
Gender(Female=1)	2,022	0.496	0.500	0	1
Employed (full time)	1,157	0.917	0.276	0	1
Own a mobile phone	2,022	0.752	0.432	0	1
Own a radio	2,022	0.469	0.499	0	1
Own a TV	2,022	0.456	0.498	0	1
Own a blender	2,022	0.065	0.246	0	1
Own a car	2,022	0.015	0.121	0	1
Total assets (out of 5)	2,022	1.758	1.131	0	5
Turnout (2016 election)	2,022	0.863	0.344	0	1
Feel close to a political party	2,022	0.740	0.439	0	1
Close to the incumbent party (NPP)	1,497	0.555	0.497	0	1
Closeness to the opposition party (NDC)[0-7]	1,969	3.415	2.838	0	7
Closeness to opposition party (NPP)[0-7]	1,973	3.878	2.840	0	7
Voted for the incumbent party's MP candidate in 2016	1,744	0.541	0.498	0	1
Will vote for incumbent party's MP candidate tomorrow	2,022	0.407	0.491	0	1
Report to know MP's name	2,022	0.750	0.433	0	1
Correctly names MP	1,517	0.957	0.203	0	1
Gone without food in past year	2,022	0.192	0.394	0	1
Gone without clean water in past year	2,022	0.258	0.438	0	1
Gone without medicine	2,022	0.245	0.430	0	1
Gone without cooking fuel	2,022	0.166	0.372	0	1
Gone without cash income	2,022	0.613	0.487	0	1
Lives in a hut/shack	2,015	0.454	0.498	0	1
Poverty index	2,015	1.928	1.538	0	6
Often get news from radio	2,022	0.577	0.494	0	1
Often get news from TV	2,022	0.458	0.498	0	1
Often get news from newspaper	2,022	0.011	0.106	0	1
Often gets news from internet	2,022	0.094	0.293	0	1
Often get news from social media	2,022	0.105	0.307	0	1

Table A.2: Randomization Check

	<i>Dependent variable:</i>									
	Age	Closeness incumbent party	Turnout (2016)	Education	Employed	Akan	Ewe	Kokomba	Correctly names MP	Total assets
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<b>Constituency Development Fund:</b>										
Public,50:Private,50	0.311 (0.366)	0.003 (0.015)	0.004 (0.009)	-0.026 (0.053)	-0.002 (0.012)	-0.007 (0.011)	0.005 (0.007)	-0.0004 (0.008)	-0.003 (0.006)	-0.0004 (0.028)
Public,10:Private,90	0.309 (0.393)	-0.003 (0.015)	-0.001 (0.009)	-0.016 (0.055)	0.0003 (0.013)	-0.017 (0.012)	0.005 (0.007)	0.002 (0.008)	0.009* (0.005)	-0.043 (0.030)
Public,90:Private,10	0.167 (0.372)	0.020 (0.015)	0.006 (0.009)	-0.019 (0.056)	0.023* (0.013)	0.003 (0.012)	-0.0002 (0.007)	0.013 (0.009)	-0.001 (0.005)	-0.050* (0.029)
<b>Time in Constituency vs. Capital</b>										
Const.:50-capital:50	0.091 (0.338)	-0.012 (0.013)	0.010 (0.007)	0.052 (0.045)	0.015 (0.011)	0.017* (0.010)	0.006 (0.006)	-0.001 (0.007)	-0.005 (0.006)	0.021 (0.024)
Const.:75-capital:25	0.365 (0.365)	-0.025* (0.014)	0.003 (0.009)	0.052 (0.052)	-0.006 (0.012)	0.0003 (0.011)	0.004 (0.007)	-0.007 (0.008)	0.001 (0.005)	0.042 (0.028)
<b>Community meeting</b>										
Monthly	0.303 (0.435)	-0.002 (0.017)	-0.007 (0.010)	-0.048 (0.059)	-0.021 (0.015)	0.011 (0.013)	-0.003 (0.008)	-0.010 (0.010)	-0.007 (0.006)	0.004 (0.033)
Every three months	0.204 (0.432)	-0.007 (0.016)	0.007 (0.010)	-0.079 (0.057)	-0.025* (0.014)	-0.004 (0.013)	-0.006 (0.008)	-0.005 (0.010)	-0.0002 (0.007)	0.013 (0.032)
Every six months	-0.471 (0.430)	0.008 (0.016)	-0.007 (0.010)	-0.057 (0.061)	-0.012 (0.013)	0.010 (0.013)	0.0003 (0.008)	-0.008 (0.010)	-0.008 (0.007)	-0.043 (0.032)
Yearly	0.009 (0.437)	0.002 (0.017)	-0.005 (0.010)	-0.117* (0.060)	-0.015 (0.014)	0.024* (0.013)	-0.003 (0.008)	-0.0004 (0.010)	-0.006 (0.006)	-0.021 (0.033)
<b>Social event</b>										
Sometimes	-0.373 (0.333)	0.018 (0.013)	-0.008 (0.008)	-0.005 (0.046)	0.006 (0.011)	0.032*** (0.010)	-0.006 (0.006)	-0.009 (0.008)	0.007 (0.006)	0.043* (0.025)
Always	0.027 (0.326)	0.006 (0.013)	-0.003 (0.008)	-0.075 (0.047)	0.011 (0.011)	0.009 (0.010)	0.0004 (0.006)	-0.011 (0.007)	0.009** (0.005)	0.002 (0.026)
<b>Personal assistance (casework)</b>										
Sometimes	-0.262 (0.327)	-0.005 (0.013)	0.008 (0.007)	0.012 (0.045)	-0.008 (0.011)	-0.012 (0.010)	-0.001 (0.006)	-0.003 (0.008)	0.002 (0.004)	0.014 (0.025)
Always	-0.151 (0.325)	-0.010 (0.013)	-0.004 (0.008)	0.027 (0.047)	-0.005 (0.011)	-0.021** (0.010)	-0.001 (0.006)	0.015** (0.007)	-0.001 (0.005)	-0.010 (0.025)
<b>Profession</b>										
Lawyer	-0.426 (0.434)	0.034* (0.018)	-0.011 (0.010)	0.026 (0.063)	-0.002 (0.015)	-0.011 (0.014)	-0.008 (0.008)	-0.0002 (0.010)	-0.011 (0.007)	-0.006 (0.035)
Educationist/teacher	0.021 (0.447)	0.002 (0.018)	-0.025** (0.011)	-0.004 (0.065)	-0.010 (0.015)	0.007 (0.014)	0.0001 (0.009)	0.008 (0.010)	-0.014** (0.007)	-0.015 (0.035)
Business person	-0.197 (0.457)	0.005 (0.018)	-0.005 (0.010)	-0.008 (0.066)	0.012 (0.016)	0.003 (0.014)	-0.001 (0.008)	-0.007 (0.010)	-0.003 (0.006)	0.022 (0.035)
Accountant	0.076 (0.465)	0.012 (0.018)	-0.009 (0.010)	-0.065 (0.063)	-0.006 (0.015)	0.006 (0.014)	-0.001 (0.009)	-0.003 (0.010)	-0.006 (0.006)	0.042 (0.035)
Architect	-0.295 (0.485)	0.022 (0.019)	-0.001 (0.011)	0.057 (0.067)	0.0003 (0.016)	0.011 (0.015)	-0.002 (0.009)	0.010 (0.011)	-0.005 (0.007)	0.018 (0.036)
<b>Gender</b>										
Male	0.721** (0.339)	0.005 (0.013)	-0.003 (0.008)	-0.147*** (0.049)	-0.013 (0.011)	-0.005 (0.010)	0.006 (0.006)	0.011 (0.007)	-0.005 (0.006)	-0.036 (0.025)
<b>Political party</b>										
New Patriotic Party	-0.310 (0.328)	0.004 (0.013)	-0.018** (0.008)	-0.027 (0.045)	0.014 (0.011)	0.002 (0.010)	0.007 (0.006)	-0.012* (0.007)	-0.002 (0.005)	-0.034 (0.026)
National Democratic Congress	-0.242 (0.319)	-0.037*** (0.013)	0.0002 (0.007)	-0.049 (0.046)	0.006 (0.011)	0.007 (0.010)	0.004 (0.006)	-0.003 (0.007)	0.005 (0.005)	-0.028 (0.025)
<b>Hometown</b>										
Does not hail but resident in constituency	-0.104 (0.326)	0.012 (0.013)	-0.009 (0.007)	-0.013 (0.047)	-0.015 (0.011)	-0.017* (0.010)	-0.006 (0.006)	0.009 (0.007)	0.003 (0.005)	0.023 (0.025)
Hails from but not resident	-0.134 (0.328)	0.026** (0.013)	0.008 (0.007)	-0.061 (0.047)	-0.011 (0.011)	-0.013 (0.010)	0.003 (0.006)	0.017** (0.007)	0.003 (0.006)	0.029 (0.024)
Constant	38.671*** (0.765)	0.541*** (0.029)	0.878*** (0.017)	3.629*** (0.109)	0.589*** (0.025)	0.283*** (0.022)	0.076*** (0.014)	0.117*** (0.017)	0.964*** (0.010)	1.776*** (0.057)
Observations (rated profiles)	12,096	8,982	12,132	12,030	12,132	12,132	12,132	12,132	9,102	12,132
R <sup>2</sup>	0.001	0.003	0.002	0.002	0.002	0.003	0.001	0.002	0.002	0.002
Adjusted R <sup>2</sup>	-0.001	0.001	0.0005	0.0003	-0.0003	0.001	-0.001	0.0005	-0.0002	0.0001
<b>Prob &gt;F (23 attributes)</b>	<b>0.841</b>	<b>0.121</b>	<b>0.199</b>	<b>0.275</b>	<b>0.672</b>	<b>0.049</b>	<b>0.991</b>	<b>0.193</b>	<b>0.561</b>	<b>0.381</b>

Notes: Standard errors are clustered at the individual level. \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

Table A.3: The profile order of the three “voting task” has no effect of the effect of attributes

	<i>Dependent variable</i>		
	<i>Variable coefficient</i>	<i>Preferred candidate profile</i>	
		<i>Interaction effect (*Second profile)</i>	<i>Interaction effect (*Third profile)</i>
Second profile	-0.036 (0.056)		
Third profile	-0.056 (0.056)		
<b>Constituency Development Fund</b>			
Public (90%):Private (10%)	0.126*** (0.023)	0.027 (0.032)	-0.001 (0.032)
Public (50%):Private (50%)	0.096*** (0.022)	0.054* (0.030)	0.025 (0.031)
Public (10%):Private (90%)	0.049** (0.022)	0.031 (0.031)	0.031 (0.030)
<b>Time in Constituency vs. Capital</b>			
Const.:50-capital:50	-0.002 (0.018)	0.038 (0.026)	-0.003 (0.028)
Const.:75-capital:25	0.009 (0.020)	0.057** (0.026)	0.021 (0.028)
<b>Community meeting</b>			
Monthly	0.139*** (0.024)	-0.018 (0.033)	-0.001 (0.034)
Every three months	0.149*** (0.025)	-0.051 (0.035)	0.007 (0.035)
Every six months	0.095*** (0.024)	-0.0005 (0.035)	0.064* (0.035)
Yearly	0.035 (0.024)	0.027 (0.035)	0.046 (0.033)
<b>Social event</b>			
Sometimes	0.033* (0.019)	0.018 (0.027)	0.011 (0.027)
Always	0.089*** (0.019)	-0.019 (0.027)	-0.013 (0.026)
<b>Personal assistance (casework)</b>			
Sometimes	0.079*** (0.019)	0.011 (0.027)	-0.032 (0.027)
Always	0.109*** (0.019)	0.001 (0.026)	-0.020 (0.026)
<b>Profession</b>			
Lawyer	-0.031 (0.026)	0.031 (0.038)	0.035 (0.038)
Educationist/teacher	0.032 (0.026)	-0.005 (0.037)	0.013 (0.038)
Business person	-0.012 (0.027)	0.041 (0.038)	-0.013 (0.038)
Accountant	0.019 (0.027)	-0.001 (0.038)	-0.033 (0.038)
Architect	0.003 (0.028)	0.038 (0.040)	-0.007 (0.039)
<b>Gender</b>			
Male	0.014 (0.019)	-0.040 (0.027)	0.004 (0.027)
<b>Political party</b>			
New Patriotic Party	0.049*** (0.019)	-0.020 (0.026)	-0.030 (0.026)
National Democratic Congress	0.029 (0.019)	-0.024 (0.026)	-0.024 (0.027)
<b>Hometown</b>			
Does not hail but resident in constituency	-0.063*** (0.019)	0.060** (0.027)	0.066** (0.027)
Hails from but not resident	-0.051*** (0.019)	0.025 (0.027)	0.016 (0.027)
Constant	0.241*** (0.040)		
Observations (Rated Profiles)	12,132		

Notes: Standard errors are clustered at the individual level. \*p<0.1; \*\*p<0.05; \*\*\*p<0.01



## **B Conjoint design: narratives**

I trained twelve experienced research assistants to conduct the in-person interviews across the selected constituencies.<sup>19</sup> After introducing the conjoint and instruction, enumerators read (narrated) the attributes and values of the conjoint survey as “campaign promises” of hypothetical candidates (i.e., what a particular candidate will do when elected to office). Enumerators started the conjoint surveys as follows:

1. As you may know, during elections, candidates with different qualifications and characteristics compete to represent your constituency as a Member of Parliament (MP). These candidates also make promises as to what they would do to serve you and your constituency when you elect them as your MP. There could be only one MP. Let us say two people are standing for elections in your constituency for the 2020 parliamentary elections. I am going to tell you a little bit about these two people and then ask your opinion about them.
2. After describing these candidates, I will also like you to take this GHC 2. You cannot keep all the amount for yourself. However, you can give any amount between GHC .50 and GHC 2 to your preferred candidate. We will donate the total amount collected to the aspirant similar to the candidate most preferred by respondents in this constituency during the 2020 parliamentary elections.
3. Should I repeat these instructions?

My RAs then narrated the attributes and their corresponding values of two hypothetical candidates in pairwise comparison. They then asked respondents whether they should repeat the attributes and its values. Respondents were then asked the following questions:

### **Questions:**

1. Which of these two candidates would you vote for?

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<sup>19</sup>While each constituency was assigned to an enumerator, in some cases pairs of RAs helped each other to survey their constituency. As a robustness check, I will include enumerator fixed effects.

Table B.1: Values of candidates' promises and characteristics in the conjoint survey

Candidate Attribute	Attribute levels	Probabilities
Political Party	Independent (IND)[1]	1/3
	New Patriotic Party (NPP)[2]	1/3
	National Democratic Congress (NDC)[3]	1/3
Hometown	Hails from and resident in constituency [1]	1/3
	Does not hail but resident in constituency [2]	1/3
	Hails from but not resident [3]	1/3
Profession	Farmer/Agriculturalist (1)	1/6
	Lawyer (2)	1/6
	Educationist/teacher (3)	1/6
	Business person (4)	1/6
	Accountant (5)	1/6
	Architect (6)	1/6
Gender	Female [0]	1/5
	Male [1]	4/5
Use of MP's Common Fund (CDF)	[Levels: 1) Ten (10) percent; 2) 50 percent; 3) 90 percent ] of MPCF to support the construction or renovation of community school and clinics, repairs of roads and bridges, and other community self-help projects. [Levels: 1) Ten (10) percent; 2) 50 percent; 3) 90 percent] of MPCF to pay school fees, medical bills, and apprenticeship fee for some individual members of this constituency. [Use levels:	
	P <sub>10,10</sub> [1]	1/4
	P <sub>50,50</sub> [2]	1/4
	P <sub>10,90</sub> [3]	1/4
	P <sub>90,10</sub> [4]	1/4
Time in constituency versus capital	Constituency (C): [25, 50, 75 ] percent; Accra (A):[25, 50, 75] percent [Use levels (T <sub>C,A</sub> ):	
	T <sub>25,75</sub> [1]	1/3
	T <sub>50,50</sub> [2]	1/3
	T <sub>75,25</sub> [3]	1/3
Personal assistance	[Levels: Hardly (1/10)[1], Sometimes (5/10)[2], Always (10/10)[3]] support constituents who need help to obtain government services such as business license, passport, birth certificate, facilitate loans or get government jobs	
	Hardly (1/10)[1]	1/3
	Sometimes (5/10)[2]	1/3
	Always (10/10)[3]	1/3
Community meetings	Never [1]	1/5
	Monthly [2]	1/5
	Every three months [3]	1/5
	Every six months [4]	1/5
	Yearly [5]	1/5
Social events	[Levels: Hardly (1/10)[1], Sometimes (5/10)[2], Always (10/10)[3]]: attend or contribute to social events such as funerals, church/mosque activities, and traditional festivals.	
	Hardly (1/10)[1]	1/3
	Sometimes (5/10)[2]	1/3
	Always (10/10)[3]	1/3

Candidate A

Candidate B

2. Please choose the amount of you would like to donate to your preferred candidate.

GHC 0.50

GHC 1.00

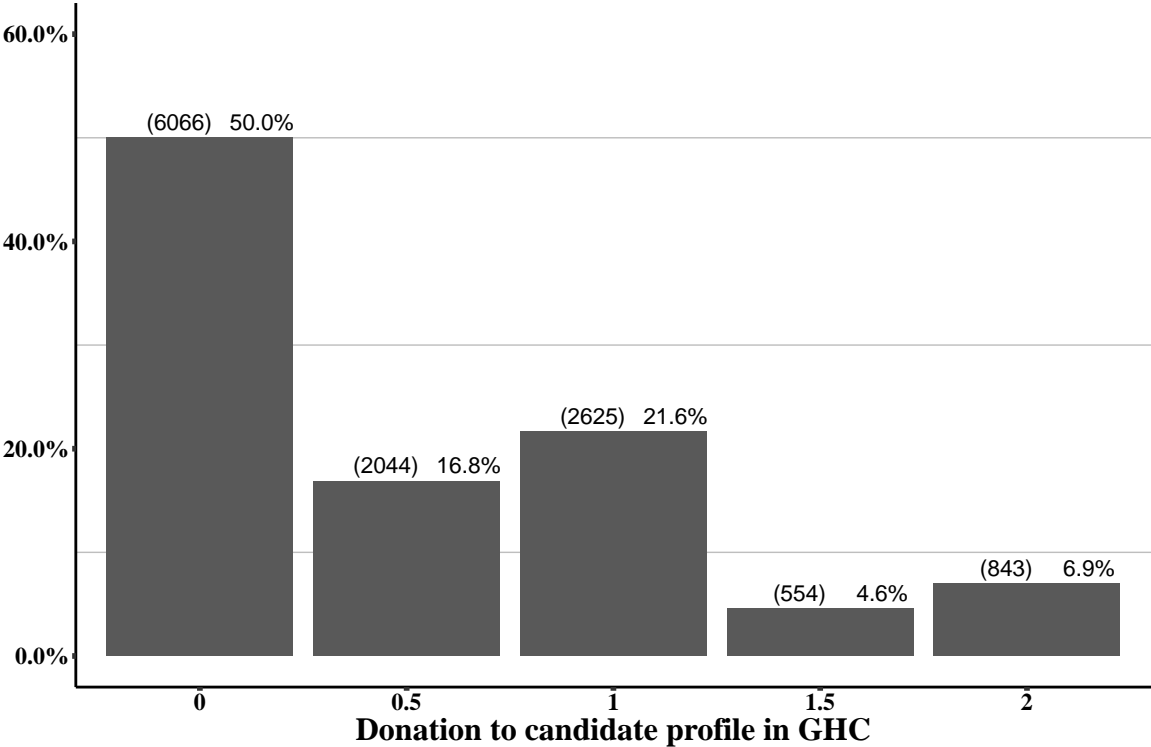
GHC 1.50

GHC 2.00

Figure B.1: An example of candidates' profiles respondents saw

Voting Game > Rounds 1 to 3 (3) <span style="float: right;">↶ Go to</span>	
A	B
<b>Gender</b>	
Male	Female
<b>Profession</b>	
Lawyer	Accountant
<b>Social Events</b>	
Sometimes (5/10) attend or contribute to social events such as funerals, church/mosque activities, and traditional festivals	Hardly (1/10) attend or contribute to social events such as funerals, church/mosque activities, and traditional festivals
<b>Time in Constituency vs. Capital</b>	
Constituency: 50 percent; Capital: 50 percent	Constituency: 25 percent; Capital: 75 percent
<b>Hometown</b>	
Hails from but not resident	Does not hail but resident in constituency
<b>Community meetings</b>	
Yearly	Monthly
<b>Use of MP Common Fund</b>	
50 percent of MPCF to support the construction or renovation of community school and clinics, repairs of roads and bridges, and other community self-help projects. 50 percent of MPCF to pay school fees, medical bills, and apprenticeship fee for some individual members of this constituency.	50 percent of MPCF to support the construction or renovation of community school and clinics, repairs of roads and bridges, and other community self-help projects. 50 percent of MPCF to pay school fees, medical bills, and apprenticeship fee for some individual members of this constituency.
<b>Political party</b>	
New Patriotic Party (NPP) 	National Democratic Congress (NDC) 
<b>Personal assistance (case work)</b>	
Always (10/10): support constituents who need help to obtain government services such as business license, passport, birth certificate, facilitate loans or get government jobs	Sometimes (5/10): support constituents who need help to obtain government services such as business license, passport, birth certificate, facilitate loans or get government jobs

Figure B.2: Distribution of the amount donated by respondents to their preferred candidate profile



**C Main results tables**

Table C.1: Effects of candidate attributes on the probability of being selected as Member of Parliament

	<i>Dependent variable:</i>			
	Preferred candidate profile		Donation to preferred candidate profile	
	(1)	(2)	(3)	(4)
<b>Constituency Development Fund</b>				
Public (50%):Private (50%)	0.123*** (0.013)	0.123*** (0.013)	0.131*** (0.015)	0.132*** (0.015)
Public (10%):Private (90%)	0.070*** (0.013)	0.070*** (0.013)	0.080*** (0.016)	0.081*** (0.016)
Public (90%):Private(10%)	0.135*** (0.014)	0.136*** (0.014)	0.144*** (0.017)	0.145*** (0.017)
<b>Time in Constituency vs. Capital</b>				
Constituency (50%) : Capital (50%)	0.030*** (0.011)	0.031*** (0.011)	0.041*** (0.013)	0.042*** (0.013)
Constituency (75%) : Capital (25%)	0.015 (0.012)	0.016 (0.012)	0.040*** (0.015)	0.042*** (0.015)
<b>Community meeting</b>				
Monthly	0.135*** (0.014)	0.134*** (0.014)	0.155*** (0.017)	0.156*** (0.018)
Every three months	0.134*** (0.014)	0.133*** (0.014)	0.162*** (0.017)	0.162*** (0.017)
Every six months	0.117*** (0.014)	0.117*** (0.014)	0.130*** (0.017)	0.131*** (0.017)
Yearly	0.062*** (0.014)	0.060*** (0.014)	0.065*** (0.016)	0.065*** (0.016)
<b>Social event</b>				
Sometimes	0.042*** (0.011)	0.043*** (0.011)	0.041*** (0.014)	0.043*** (0.014)
Always	0.078*** (0.011)	0.079*** (0.011)	0.083*** (0.014)	0.084*** (0.014)
<b>Personal assistance (casework)</b>				
Sometimes	0.072*** (0.011)	0.073*** (0.011)	0.076*** (0.014)	0.075*** (0.014)
Always	0.102*** (0.011)	0.104*** (0.011)	0.107*** (0.014)	0.109*** (0.014)
<b>Profession</b>				
Lawyer	-0.009 (0.016)	-0.008 (0.016)	-0.006 (0.019)	-0.005 (0.019)
Educationist/teacher	0.035** (0.015)	0.033** (0.015)	0.037** (0.019)	0.036* (0.019)
Business person	-0.003 (0.016)	-0.003 (0.016)	-0.009 (0.020)	-0.008 (0.020)
Accountant	0.007 (0.015)	0.004 (0.015)	-0.005 (0.019)	-0.009 (0.019)
Architect	0.014 (0.017)	0.013 (0.017)	0.018 (0.020)	0.017 (0.020)
<b>Gender</b>				
Male	0.001 (0.011)	0.0003 (0.011)	-0.013 (0.014)	-0.012 (0.014)
<b>Political party</b>				
New Patriotic Party (incumbent)	0.032*** (0.011)	0.031*** (0.011)	0.031** (0.014)	0.030** (0.014)
National Democratic Congress (opposition)	0.011 (0.011)	0.010 (0.011)	0.003 (0.014)	0.001 (0.014)
<b>Hometown</b>				
Does not hail but resident in constituency	-0.021* (0.011)	-0.023** (0.011)	-0.017 (0.014)	-0.019 (0.014)
Hails from but not resident	-0.038*** (0.011)	-0.036*** (0.011)	-0.038*** (0.013)	-0.036*** (0.013)
<b>Controls</b>				
	No	Yes	No	Yes
Constant	0.210*** (0.023)	0.210*** (0.024)	0.282*** (0.034)	0.296*** (0.042)
Observations	12,132	11,994	12,132	11,994
R <sup>2</sup>	0.037	0.037	0.044	0.046
Adjusted R <sup>2</sup>	0.034	0.034	0.041	0.042

Notes: Table C.1 shows estimates of the effects of randomly assigned parliamentary candidate attribute values on the probability of being preferred as Member of Parliament in the next election. Estimates are based on an OLS model with standard errors clustered by reponent. The model also includes constituency fixed effects to ensure within constituency comparison. \*p<0.1; \*\*p<0.05; \*\*\*p<0.01.

Figure C.1: Marginal means of selecting a candidate with a profile that includes a randomize CDF allocation value, by voter partisanship

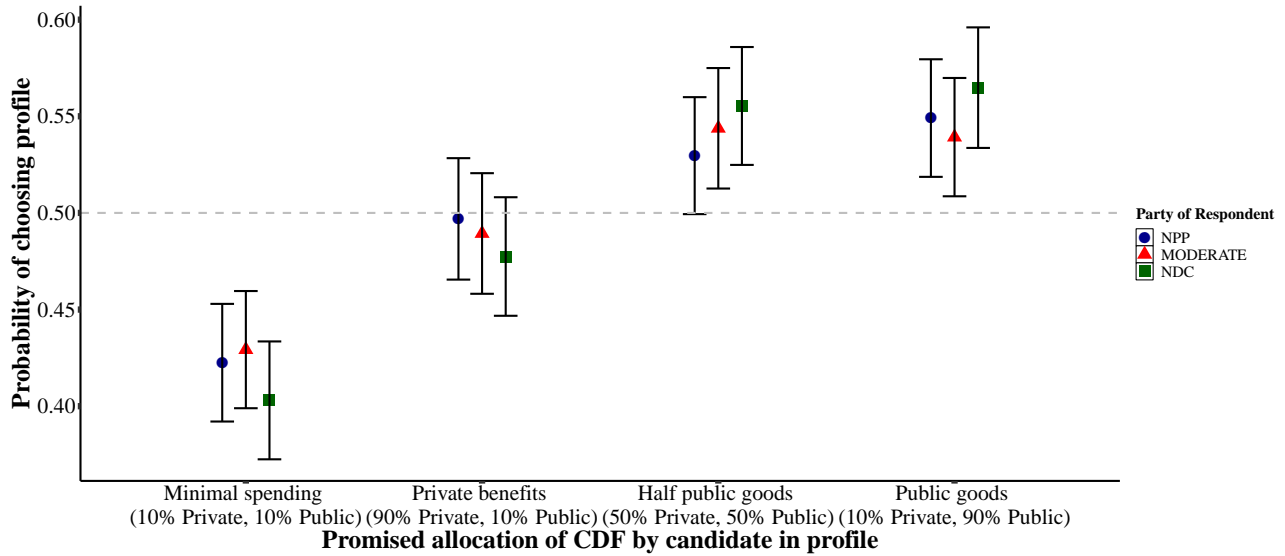


Table C.2: Effects of candidate attribute on the probability of being preferred as an MP, by partisanship and constituency type

	<i>Dependent variable:</i>							
	Will vote for candidate							
	Segregated				Non-Segregated			
	Competitive		Non-Competitive		Competitive		Non-Competitive	
<i>Copartisan</i>	<i>Non-copartisan</i>	<i>Copartisan</i>	<i>Non-copartisan</i>	<i>Copartisan</i>	<i>Non-copartisan</i>	<i>Copartisan</i>	<i>Non-copartisan</i>	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
<b>Constituency Development Fund</b>								
Public (90%):Private (10%)	0.179*** (0.062)	0.187** (0.073)	0.189*** (0.063)	0.037 (0.064)	0.237*** (0.059)	0.221*** (0.062)	0.054 (0.054)	0.055 (0.057)
Public (50%):Private (50%)	0.109* (0.063)	0.075 (0.063)	0.221*** (0.062)	0.034 (0.059)	0.194*** (0.057)	0.200*** (0.057)	0.085 (0.054)	0.001 (0.054)
Public (10%):Private (90%)	0.077 (0.067)	0.131** (0.058)	0.163*** (0.054)	0.087 (0.064)	0.127** (0.061)	0.112** (0.056)	0.039 (0.054)	0.024 (0.057)
Constant	0.471*** (0.117)	0.124 (0.112)	0.421*** (0.110)	0.037 (0.101)	0.405*** (0.101)	0.062 (0.099)	0.330*** (0.092)	0.323*** (0.088)
Observations	561	466	537	534	608	590	681	625
R <sup>2</sup>	0.044	0.072	0.104	0.090	0.098	0.089	0.047	0.086
Adjusted R <sup>2</sup>	0.003	0.024	0.063	0.049	0.062	0.052	0.013	0.051

Note: Table C.2 shows estimates of the effects of randomly assigned parliamentary candidate attribute values on a candidate being preferred as an MP in the next election by partisanship and constituency type. All the models include all randomly assigned attributes. Estimates are based on an OLS model with standard errors clustered at the respondent level. The models also include constituency fixed effects. \*p<0.1; \*\*p<0.05; \*\*\*p<0.01.

## D Mechanisms

Table D.1: Association between copartisanship with incumbent MP and expectation that your community will receive local public infrastructure

	<i>Dependent variable:</i>				
	Expect community to receive public infrastructure				
	Full sample	Segregated		Non-Segregated	
		Competitive	Non-Competitive	Competitive	Non-Competitive
(1)	(2)	(3)	(4)	(5)	
<b>Binary</b>					
Copartisan with incumbent MP	0.317*** (0.081)	0.699*** (0.114)	0.314*** (0.073)	0.169*** (0.012)	0.153* (0.087)
Constant	0.110*** (0.037)	-0.102** (0.044)	0.079 (0.049)	0.179*** (0.006)	0.085 (0.070)
Observations	1,017	216	256	262	283
R <sup>2</sup>	0.382	0.614	0.186	0.540	0.149
Adjusted R <sup>2</sup>	0.375	0.608	0.176	0.535	0.140
<b>Likert scale (0-10)</b>					
Copartisan with incumbent MP	3.093*** (0.674)	6.393*** (0.888)	3.094*** (0.844)	1.754*** (0.189)	1.715*** (0.295)
Constant	1.649*** (0.311)	-0.470 (0.346)	1.615*** (0.563)	2.267*** (0.087)	1.048*** (0.239)
Observations	1,017	216	256	262	283
R <sup>2</sup>	0.429	0.716	0.273	0.536	0.253
Adjusted R <sup>2</sup>	0.422	0.712	0.265	0.530	0.245

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

Table D.2: Association between copartisanship with incumbent MP and report that your community has received local public infrastructure

	<i>Dependent variable:</i>				
	Community has received public infrastructure				
	Full sample	Segregated		Non-Segregated	
		Competitive	Non-Competitive	Competitive	Non-Competitive
(1)	(2)	(3)	(4)	(5)	
Copartisan with incumbent MP	0.186*** (0.063)	0.399** (0.194)	0.208* (0.117)	0.150*** (0.035)	0.037 (0.052)
Constant	0.141*** (0.030)	-0.101 (0.084)	-0.005 (0.078)	0.159*** (0.017)	0.021 (0.042)
Observations	1,096	228	254	302	312
R <sup>2</sup>	0.349	0.380	0.094	0.370	0.331
Adjusted R <sup>2</sup>	0.342	0.372	0.083	0.363	0.324

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



Table D.3: Top three reasons why respondents voted for a parliamentary candidate in the 2016 elections

	Full sample	Non-segregated		Segregated	
		Competitive	Non-competitive	Competitive	Non-competitive
Was a good person	0.330 (0.011)	0.461 (0.024)	0.153 (0.017)	0.438 (0.024)	0.269 (0.021)
Belonged to your [my] party	0.380 (0.012)	0.351 (0.023)	0.337 (0.023)	0.470 (0.024)	0.359 (0.023)
Was most competent educated	0.170 (0.009)	0.144 (0.017)	0.073 (0.012)	0.094 (0.014)	0.372 (0.023)
Understand the problem of people like me	0.202 (0.010)	0.127 (0.016)	0.214 (0.020)	0.299 (0.022)	0.166 (0.018)
Regularly visited your [my] constituency	0.066 (0.006)	0.059 (0.011)	0.052 (0.011)	0.031 (0.008)	0.122 (0.016)
Regularly attended parliamentary meeting	0.008 (0.002)	0.009 (0.005)	0.021 (0.007)	0 (0)	0.002 (0.002)
Organized meetings to debrief on discussions in parliament	0.019 (0.003)	0.026 (0.008)	0.025 (0.007)	0.022 (0.007)	0.002 (0.002)
Promised to regularly voice corruption by the executive	0.018 (0.003)	0.016 (0.006)	0.032 (0.008)	0.013 (0.005)	0.011 (0.005)
Regularly attended community events (funerals, traditional festivals, religious events)	0.107 (0.007)	0.078 (0.013)	0.244 (0.021)	0.072 (0.012)	0.034 (0.009)
Co-ethnic	0.073 (0.006)	0.005 (0.003)	0.059 (0.011)	0.160 (0.017)	0.067 (0.012)
Just needed a change	0.093 (0.007)	0.028 (0.008)	0.071 (0.012)	0.175 (0.018)	0.094 (0.014)
Promised to bring development projects to constituency	0.746 (0.010)	0.645 (0.023)	0.852 (0.017)	0.724 (0.021)	0.761 (0.020)
Was very helpful with requests for personal assistance	0.373 (0.012)	0.485 (0.024)	0.499 (0.024)	0.213 (0.019)	0.299 (0.022)
Other [specify]	0.089 (0.007)	0.078 (0.013)	0.055 (0.011)	0.070 (0.012)	0.154 (0.017)

## E Spatial segregation of partisans within constituencies

To measure the level of partisan segregation of each constituency, I adopt White (1986)'s entropy index ( $Segregation_J$ ) for an entire electoral district. For Constituency  $J$ , consisting of  $N_j$  polling stations indexed by  $i$ , White (1986)'s entropy index for spatial segregation of partisans is given by

$$Segregation_J = \frac{\hat{H}_J - \sum_{i=1}^{N_j} \frac{n_i}{n_j} * h_i}{\hat{H}_J}$$

where  $Segregation_J$  is the level of segregation for Constituency  $J$ ,  $n_i$  and  $n_j$  are the populations of polling station  $i$  and Constituency  $J$ , and  $\hat{H}_J$  and  $h_i$  are the entropy of Constituency  $J$  and polling station  $i$ , respectively.  $\hat{H}_J$  at the constituency-level is calculated as follows:

$$H_J = - \sum_k p_{j,k} \ln(p_{j,k})$$

where  $p_{j,k}$  is the proportion of each partisan group  $k$  in Constituency  $J$ . Likewise, entropy at the polling station-level ( $h_i$ ) is given by:

$$h_i = - \sum_k p_{i,k} \ln(p_{i,k})$$

where  $p_{i,k}$  is the proportion of each partisan group  $k$  in polling station  $i$ .

The maximum value of  $Segregation_J$  is 1, when each polling station contains only one partisan group ( $\sum_{i=1}^{N_j} \frac{n_i}{n_j} * h_i = 0$ ). The minimum value of  $Segregation_J$  is 0, when every polling station has the same composition as the constituency ( $\sum_{i=1}^{N_j} \frac{n_i}{n_j} * h_i = \hat{H}_J$ ). Simply, constituencies with higher values of  $Segregation_J$  have *less* uniform partisan distributions while those with lower values of  $Segregation_J$  have *more* uniform partisan distributions.

I use the 2016 parliamentary election results at the polling station level for candidates of the two major parties (NPP and NDC) to compute the level of segregation for each constituency. The minimum and maximum values of  $Segregation_J$  for the 275 constituencies in Ghana are 0.008 and 0.559, respectively with a mean of 0.091. Figure E.1 shows the distribution. To simplify my sampling, I classify constituency above the 90th percentile ( $\geq 0.172$ ) the  $Segregation_J$  distribution as segregated and non-segregated otherwise.

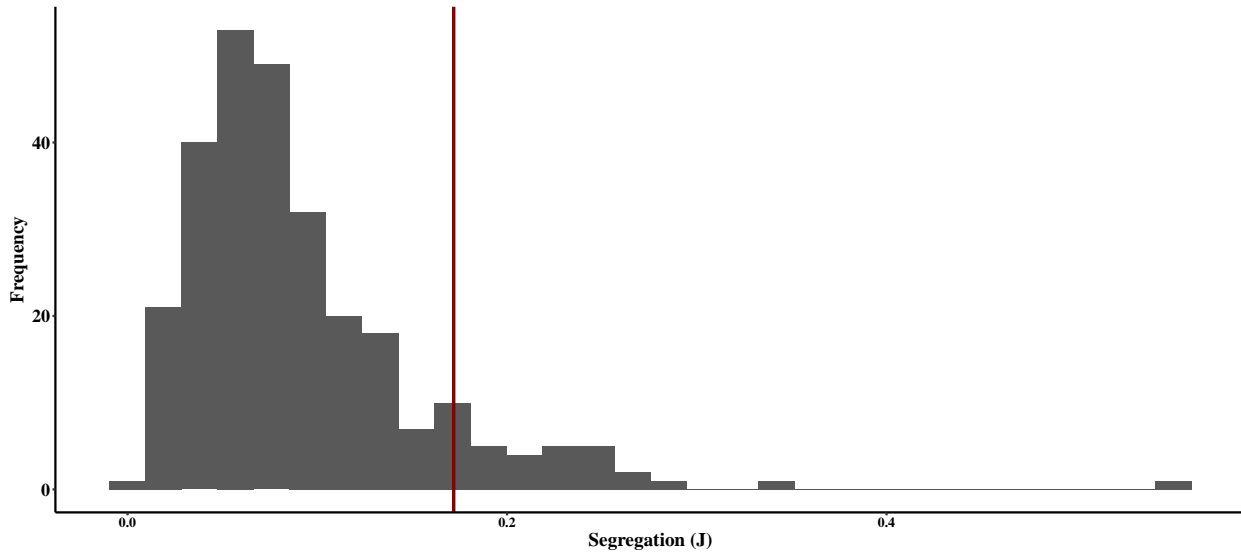


Figure E.1: Distribution of Constituency-level Segregation

Table E.1: Characteristics of sampled constituencies

Constituency	Competition	Segregation	MP name	Party
Asunafo South	Competitive	Non-Segregated	Eric Opoku	NDC
Bunkpurugu	Competitive	Non-Segregated	Solomon Namliit Boar	NPP
Suhum	Competitive	Non-Segregated	Drederick Opare-Ansah	NPP
Bawku Central	Competitive	Segregated	Mahama Ayariga	NDC
Fanteakwa North	Competitive	Segregated	Kwabena Amankwa Asiamah	NPP
Zabzugu	Competitive	Segregated	Alhassan Umar	NDC
Manso Nkwanta	Non-Competitive	Non-Segregated	Joseph Albert Quarm	NPP
Nabdum	Non-Competitive	Non-Segregated	Mark Kurt Nawaane	NDC
Saboba	Non-Competitive	Non-Segregated	Charles Binipom Bintin	NPP
Kwabre East	Non-Competitive	Segregated	Francisca Mensah Oteng	NPP
Mpraeso	Non-Competitive	Segregated	Seth Kwame Acheampong	NPP
Nkwanta South	Non-Competitive	Segregated	Geoffrey Kini	NDC