Foreign Relief Aid and Political Support: Evidence from Sierra Leone during the Ebola Epidemic

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Abstract

How does relief spending affect support for an incumbent politician? This study, focusing on Sierra Leone during the Ebola epidemic, proposes the presence of the "patron" mechanism linking relief spending to political support. In contrast to previous work, this mechanism takes into account international donors' control over relief spending and the role of local governance structures. The mechanism posits a decline in popular support for the incumbent if citizens perceive a lack of cooperation between elected officials and local patrons. Using geo-referenced Afrobarometer survey data from 2012 and 2015, I implement a difference-in-differences research design. I find that community care centers, which were a central part of the international response to Ebola in Sierra Leone, reduce support for President Koroma by approximately 62.7 percentage points. The findings prompt a reconsideration of relief aid's political consequences and advocate for a nuanced understanding of its implementation dynamics.

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1 Introduction

Even though natural disasters, such as earthquakes, tornadoes and health crises, can be politically costly to incumbent governments in terms of electoral support (e.g., Achen and Bartels 2017), governments can compensate for these negative effects by responding effectively to the disaster, which can involve the promise and distribution of relief aid (e.g., Bechtel and Hainmueller 2011; Gasper and Reeves 2011; Healy and Malhotra 2009, 2010; Lazarev et al. 2014; Reeves 2011). Disaster relief aid can alleviate the economic hardships caused by disasters and produce public goods that are valued by citizens. In addition, the promise of disaster relief can be interpreted as a signal of a government's competence. These factors help to increase confidence in the government and improve the electoral fortunes of incumbent governments.

Existing studies generally presuppose citizens' direct attribution of disaster relief to the national government. However, in developing countries, where international donors — comprising international organizations, non-governmental organizations (NGOs), and government agencies of donor countries — often play a pivotal role in disaster relief efforts, such direct attribution is not universally applicable.[1] Notably, countries affected by the 2004 tsunami received an estimated $17.6 billion US dollars in aid (Jayasuriya and McCawley 2010), and donors contributed approximately $4.4 billion US dollars to Nepal's recovery after the 2015 earthquakes (Cook, Shrestha, and Htet 2018). This aid is not always directly channeled through national governments; instead, donors often collaborate with partner organizations to execute relief measures. For example, during the 2014-2016 Ebola epidemic in Sierra Leone, the UK government financed the construction of Ebola treatment units, which were subsequently operated by NGOs such as Save the Children. The goal of this study is to understand how control over disaster relief by international donors affects support for an incumbent government.

I posit that foreign relief aid[2] introduces a mechanism termed the *patron mechanism*. This

1. An exception is noted in the study by Gallego (2018), which acknowledges that, in the case of Colombia, the influx of aid reduced the budget constraint of the central government, directing relief aid according to a clientelism logic. Nevertheless, this paper still presupposes total governmental control over aid distribution.

2. The term "foreign relief aid" generally encompasses any disaster relief aid funded or implemented by international donors.

mechanism materializes in contexts where international donors undertake the construction of new infrastructure, such as health facilities. In such scenarios, donors must secure support from local leaders for the implementation of these infrastructures, potentially involving the circumvention of national governments. Building upon insights by Baldwin (2013, 2015), this circumvention may yield adverse consequences for elected officials in contexts where international donors collaborate with unelected *patrons*. Within such environments, constituents are vested in whether their elected officials can effectively collaborate with these unelected patrons to produce public goods. When international donors choose to bypass the national government for the implementation of foreign relief aid, it communicates to citizens a lack of confidence in the ability of elected officials to successfully engage with local patrons.

To empirically explore this mechanism, I have chosen the case of Sierra Leone during the Ebola epidemic spanning from 2014 to 2016. Sierra Leone was the most severely impacted country in the region, reporting approximately 14,100 confirmed and suspected Ebola virus disease (EVD) infections and 4,000 deaths attributed to the virus (WHO 2016a).[3] Sierra Leone serves as an ideal context for examining how foreign relief aid influences political attitudes, given its unique characteristics that facilitate the emergence of the patron mechanism. First, a substantial proportion of funding aimed at curtailing Ebola's spread originated from international actors, totaling around $780 million dollars, as reported by the UN Financial Tracking Service (Financial Tracking Service 2017). Second, a prominent utilization of foreign relief aid involved the construction of new health facilities to manage Ebola patients. Third, the involvement of unelected paramount chiefs in delivering public goods is a notable feature of Sierra Leone's governance structure (Acemoglu, Reed, and Robinson 2014), extending to the fight against Ebola (Richards 2016; Windt and Voors 2020). Lastly, international donors overseeing the construction of these facilities actively sought direct support from these paramount chiefs (Oosterhoff, Mokuwa, and Wilkinson 2015; Abramowitz et al. 2016), effectively bypassing the oversight of the national government.

I examine the impact of foreign relief aid using two successive rounds of the geo-referenced

3. Other significantly affected countries included Guinea and Liberia.

Afrobarometer survey (BenYishay et al. 2017), which I integrate with the locations of Community Care Centers (CCCs)—my primary metric for gauging the presence of foreign relief aid. CCCs are local treatment facilities constructed and managed by international organizations and local NGOs. Employing the geo-locations of enumeration areas, I establish connections between respondents and CCCs by calculating their travel distance by car to the nearest CCC. Respondents are categorized as part of the treatment group if their travel distance is less than or equal to 10 km. To tackle issues stemming from the non-random allocation of CCCs, I deploy a difference-in-differences estimator. This approach involves comparing the support for incumbent President Ernest Bai Koroma and his All People's Congress (APC) party among respondents living in close proximity to CCCs with those residing at greater distances from CCCs.

I observe a substantial decline in presidential approval among individuals residing in proximity to CCCs. I estimate that CCCs reduce support for President Koroma by approximately 62.7 percentage points. Alternative specifications, employing different control groups yield consistent evidence, with a slightly smaller effect of 29.6 percentage points. The findings are robust across various model specifications, encompassing alternative measures of both the dependent and treatment variables. Mechanism tests provide support for the hypothesized patron mechanism. Utilizing Ebola-specific questions from the Afrobarometer round 6 survey, I demonstrate that locations with CCCs exhibit a significantly higher likelihood of perceiving their local government as effective in controlling the Ebola outbreak. Conversely, respondents in treated areas perceive the national government as less effective, particularly in chiefdoms with less powerful chiefs. This implies that respondents credit the local government for CCC implementation but attribute blame to the national government, especially when paramount chiefs exhibit weaker leadership. This divergence aligns with the patron mechanism, illustrating citizens' inclination to hold elected officials accountable for a perceived failure to collaborate with local leaders. The results cannot be explained by potential negative externalities caused by CCCs and their impact on respondents' beliefs about the competence of the national government.

These findings contribute significantly to various research domains. First, it advances research

on the impact of disaster relief on political support by introducing the patron mechanism. Previous work emphasizes the positive effects of disaster relief spending on incumbents, either by increasing their support (Cole, Healy, and Werker 2012; Bechtel and Hainmueller 2011; Lazarev et al. 2014) or by expanding voter turnout among the incumbent's supporter group (Chen 2013). This article demonstrates that such results are not universal and highlights the importance of understanding who controls relief aid spending, how it is implemented, and the role of local governance structures.

This may explain the divergent findings between this study and that of Maffioli (2021). Maffioli's results suggest that the Liberian incumbent government improved its vote margin in Ebola-affected villages due to the placement of treatment facilities. A key distinction between Sierra Leone and Liberia was the involvement of local chiefs in the Ebola response. Unlike Sierra Leone, where paramount chiefs played a significant role (Richards 2016), patrons had a less prominent role in the fight against Ebola in Liberia (Franklin 2019). This difference may have weakened the incentives for international donors to bypass the national government in constructing CCCs.

Second, this study contributes to the ongoing discourse on the effect of foreign aid on political support. While existing studies offer varying perspectives, with some indicating that foreign aid can bolster support for incumbent politicians (Knutsen and Kotsadam 2020; Jablonski 2014; Springman 2022; Cruz and Schneider 2017) and others suggesting a decline in support (Briggs 2019; Baldwin and Winters 2020; Watkins 2022), recent endeavors aim to reconcile these discrepancies. These efforts delve into the role of politicians' credit claiming activities associated with foreign aid and the conditions under which such messages effectively sway citizens (Baldwin and Winters 2023; Springman 2022). This study extends this line of inquiry by emphasizing the significance of local governance structures. The negative effect of CCCs is attributed to Sierra Leone's reliance on paramount chiefs, suggesting that CCCs might yield different effects in countries where local leaders are also subject to regularly occurring political elections.

Third, it contributes to understanding the conditions under which citizens hold governments accountable when resources come from foreign aid or other external funding sources (Cuesta et al. 2021, 2022). Some scholars argue that foreign aid is a threat to government accountability,

either because citizens are not motivated to monitor their government if revenue comes from undeserved income sources, such as aid and oil (Paler 2013; Ross 2001), or because donors do not enforce aid conditionality effectively, allowing governments to disperse aid to the elites (Bräutigam and Knack 2004). This paper does not support this pessimistic view of aid on accountability. While it does not test whether citizens take actions against the government, it observes that based on their attitudes, they are not indifferent about how foreign relief aid is implemented, as it provides information about their elected leaders' capability to cooperate with local patrons.

2 Disasters, Political Support, and Foreign Relief Aid

Governments cannot control the occurrence of natural disasters, such as earthquakes, tornadoes, and epidemics. However, a government's response and level of preparedness to deal with a disaster are important factors in people's attribution of blame and credit for the disaster.[4] The reason is that a government's response to a disaster and its level of preparedness are directly linked to the way citizens perceive the performance and quality of the government (Gailmard and Patty 2019). In other words, if a government responds effectively to a disaster, then citizens perceive their government as more competent, and they may change their retrospective performance evaluation of the government.[5] This can have a positive effect on the government's electoral support.

Existing studies show that one effective strategy for governments to increase their public support is to provide disaster relief spending in the regions affected by a disaster.[6] Bechtel and Hainmueller (2011) find that in the context of Germany, the incumbent government was able to reap

4. There are other arguments that suggest that voters are myopic and inclined to punish the government for the occurrence of a disaster (e.g. Achen and Bartels 2017). However, as Gailmard and Patty (2019) show, this reaction is also compatible with theories based on hyper-rational and attentive voters.

5. Effectiveness of the response can mean many things and is subject to the personal perceptions of citizens. Some citizens may perceive effectiveness as the provision of relief aid. Others may just want to hear declarations of emergency.

6. In addition to disaster relief spending, governments can also exploit political signals and gestures to bolster their support. For instance, in the context of the US, Reeves (2011) and Healy and Malhotra (2009) find that unilateral presidential disaster declarations can increase the incumbent president's party's vote share after a disaster. Similarly, Cooperman (2022) finds that mayors in Brazil who declare droughts during an election year are more likely to win re-election. Lazarev et al. (2014) show that visits by high representatives of the government, such as the president, in areas affected by a disaster can also improve support.

electoral benefits in areas affected by floods due to massive disaster relief spending. Similarly, relief spending has been tied to support and positive electoral outcomes for incumbents in India (Cole, Healy, and Werker 2012), Russia (Lazarev et al. 2014), and the US (Healy and Malhotra 2009). Furthermore, Chen (2013) argues that relief aid can mobilize turn-out when voters identify with the ideology of the incumbent government and reduce voter turn-out by opposition voters. Investment in public goods is another way to mitigate hardships caused by disasters. For instance, Flückiger, Ludwig, and Sina Önder (2019) present results that during the Ebola epidemic in West Africa from 2014 to 2016, citizens living in areas most severely affected by Ebola expressed higher trust in their government than people living in less affected areas. They attribute this difference to the investment of the government in health facilities to contain the spread of the virus.

A major short-coming within this literature is that most studies assume that the domestic government is in full control of the relief efforts. This means that the domestic government distributes and implements disaster relief. For instance, in the US context, the Federal Emergency Management Agency (FEMA) is the main federal body that provides disaster relief to localities negatively affected by natural disasters. The FEMA is part of the US federal government and therefore its funding is determined by the US Congress. As a consequence, FEMA is monitored by elected officials and receives its money from tax dollars.

In many settings, this assumption that a domestic government is in control of the use of relief aid is not valid. In particular, developing countries often lack the capacity and financial resources to react to disasters on their own. Therefore, in the aftermath of a disaster, developing countries experience a large influx of foreign relief aid. International donors, such as NGOs, international organizations, and government agencies of donor countries, commit to providing relief aid to disaster-stricken countries. The sums of foreign relief aid flowing into countries affected by disasters can be significant. For instance, foreign relief aid worth 4.4 billion US dollars was disbursed in Nepal after the 2015 Earthquakes by international donors (Cook, Shrestha, and Htet 2018). The 2004 Tsunami in Southeast Asia resulted in the disbursement of 17.6 billion US dollars in foreign relief aid to the affected countries (Jayasuriya and McCawley 2010). More recently,

large sums of foreign relief aid were promised to developing countries to address the economic and social consequences caused by the COVID-19 pandemic. The World Bank, for instance, has made 160 billion US dollars in financing available to its member states (World Bank 2020). In addition to the financial contribution, international donors are also involved in the implementation of relief measures. For example, India and China sent military and medical personnel to Nepal in response to the earthquake (Chand 2017). The UK also sent troops to Sierra Leone during the Ebola epidemic and helped construct Ebola treatment units (Ross, Welch, and Angelides 2017).

The distinction between foreign and domestic relief aid matters for understanding the effect of relief aid on political support because it affects the attribution process of citizens. With domestic relief aid, citizens can make a direct link to their own government because the government is the main provider of this relief package. This relationship becomes more complicated when considering foreign relief aid since it introduces an external actor into the attribution process. The presence of foreign relief aid does not mean that the domestic government is released from any responsibility for responding to a disaster. The protection of its citizens from natural disasters is a core function of a government (Loewe, Zintl, and Houdret 2021). Furthermore, there is empirical evidence that citizens connect foreign aid with their government's performance (Dietrich, Mahmud, and Winters 2018; Winters, Dietrich, and Mahmud 2018) and that people have pre-existing beliefs that the government has some role in foreign aid projects (Baldwin and Winters 2020). However, foreign relief aid opens up new pathways for how relief aid affects electoral support for the incumbent government.

Previous work on foreign aid highlights two different pathways by which foreign relief aid could affect domestic support for an incumbent. First, the attraction of foreign relief aid can serve as a signal of competence. People may perceive attracting assistance from foreign donors as a challenging task and thus, perceive their government as more competent (Winters, Dietrich, and Mahmud 2018). This effect may be further amplified by government officials claiming credit for bringing in new aid flows (Cruz and Schneider 2017; Guiteras and Mobarak 2015; Lyall, Zhou,

and Imai 2020; Springman 2022).[7] Foreign relief aid can also reduce an incumbent government's perceived competence if people conclude that their government does not deliver on its obligations, as stated in the social contract between the government and the citizens (Blair and Winters 2020).[8]

Second, there is evidence that foreign relief aid has varying distributive consequences. An influx of foreign relief aid can lead to an increase in investment and an expansion of public goods, which may bolster support for the incumbent. For instance, Flückiger, Ludwig, and Sina Önder (2019) and Maffioli (2021) find that these types of investments in the context of the Ebola epidemic in West Africa increased people's support for the incumbent government. In contrast, foreign relief aid can also cause significant negative externalities that can undermine an incumbent's political standing. A series of findings highlight that foreign aid can attract violence (Zürcher 2017; Mampilly 2009). In a civil war context, it has been found that the presence of aid encourages looting behavior by rebel groups (Nunn and Qian 2014; Sexton 2016; Wood and Sullivan 2015). After a conflict, there might still be unresolved distributive conflicts that can cause animosity (De Juan 2020). Moreover, disaster relief windfalls can incentivize embezzlement and other corrupt behavior by politicians and bureaucrats (Nikolova and Marinov 2017; Leeson and Sobel 2008).

These arguments, however, overlook the dynamics of how foreign aid interacts with local governance structures. Specifically, the implementation of foreign relief aid frequently hinges on securing local support, which necessitates engagement with local authorities. I propose that this interaction between foreign relief aid and local authorities leads to the emergence of an alternative mechanism, termed the *patron* mechanism, by which foreign relief aid can affect support for the national government. Drawing on arguments by Baldwin (2013, 2015), this mechanism posits that one dimension on which citizens judge their elected officials is whether they can successfully co-produce public goods with their unelected local leaders, or "patrons". Citizens are likely to rally behind candidates, showcasing effective collaboration with local leaders. Foreign relief aid,

7. However, there is a limit to the degree to which people give credit to politicians for foreign aid. Recent work by Baldwin and Winters (2023) highlights that citizens who are well informed about the nature of foreign aid and live in a low-capacity state are less likely to attribute credit for foreign aid to domestic politicians.

8. Loewe, Zintl, and Houdret (2020) define the social contract in the following way: "the entirety of explicit or implicit agreements between all relevant societal groups and the sovereign (i.e., the government or any other actor in power), defining their rights and obligations toward each other." (p. 3).

requiring significant cooperation with these leaders, becomes a yardstick for evaluating elected officials' capacity to collaborate, as it provides citizens with new insights into their officials' ability to support local leaders. For instance, if citizens observe that international donors only work with local patrons and completely bypass the national government, they may infer that the donors believe that the national government is not helpful in the implementation process. An implication of this argument is that citizens will blame the national government if they do not observe that their elected officials are significantly involved in the implementation of foreign relief aid since it shows that these officials cannot successfully co-produce local public goods.

3 Sierra Leone and Ebola

To demonstrate the presence of this patron mechanism, I use the case of Sierra Leone during the Ebola epidemic in West Africa between 2014 and 2016. Sierra Leone was the most severely affected country by the Ebola outbreak, with approximately 14,100 confirmed and suspected infections and 4,000 deaths (WHO 2016a).[9] The first major outbreak in Sierra Leone occurred on May 10, 2014, in a village in the Kailahun district in the east of the country (WHO 2015). After this event, the Kenema and Kailahun districts became Ebola virus disease (EVD) hot spots between May and August 2014 (WHO 2015). Human-to-human transmission of the virus carried EVD from the eastern part of Sierra Leone to the densely populated capital of Freetown in the West, which led to a rapid increase in cases from September to November 2014 (Coltart et al. 2017). The number of cases rose from 100 new infections to over 500 a week within this period of three months (Hersey et al. 2015). Eventually, Sierra Leone was declared Ebola-free on March 17, 2016 (WHO 2016b).

The Government of Sierra Leone (GoSL) reacted relatively slowly to the Ebola outbreak due to dysfunctional operations of the early established command-control structures at the national level (Ross, Welch, and Angelides 2017). The main response to Ebola was financed and implemented

9. Liberia had 10,600 infections and 4,800 deaths. Guinea had 3,800 infections and 2,500 deaths. These numbers are reported by the WHO (2016a).

by international donors. At the beginning, when Ebola was still considered a local outbreak by the international community, the main provider of care for EVD patients was the NGO Médecins Sans Frontières (MSF), which constructed and operated its own treatment facilities (MSF 2015). After the WHO decision to declare the Ebola outbreak a *Public Health Emergency of International Concern* on August 6, 2014 (Benton and Dionne 2015), international donors and NGOs started mobilizing resources to invest in Sierra Leone. The UN created the UN Mission for Ebola Emergency Response (UNMEER), which was intended to coordinate the activities of all UN agencies involved in the response to the outbreak (Ross, Welch, and Angelides 2017). In addition to the UN, national governments and NGOs contributed personnel as well as financial resources. For instance, the UK deployed 1,500 military personnel in September 2014 to Sierra Leone under operation GRITROCK (Ross, Welch, and Angelides 2017), and international NGOs, such as Mercy Corps and Save the Children, helped in the implementation of measures in the field (DuBois et al. 2015). Among these actors, the UK government was by far the most important one in Sierra Leone. The UK was not only directly involved in the national coordination bodies but also spent around 427 million pounds in aid to deal with the Ebola crisis in Sierra Leone (Ross, Welch, and Angelides 2017). Overall, according to the UN Financial Tracking Service, the total amount of humanitarian aid that Sierra Leone received between 2014 and 2016 amounted to around 780 million US dollars (Financial Tracking Service 2017).

Sierra Leone during the Ebola epidemic is a likely case for the presence of the patron mechanism. The GoSL had limited capabilities to deal with the Ebola epidemic on its own. One reason is the lack of financial resources. Sierra Leone is a low-income country with a GDP per capita of $1,600 in 2017 (CIA 2023). Furthermore, even before the Ebola outbreak, Sierra Leone's health sector was highly aid dependent. In 2007, external aid made up 78% of health care spending (Anderson and Beresford 2016). Most aid in the health sector was spent on HIV/AIDS programs that require a different infrastructure than when dealing with Ebola (Benton 2015).

The lack of appropriate infrastructure for treating EVD patients meant that a significant amount of foreign relief aid was spent on building new physical infrastructure to isolate and treat people

infected with Ebola. One particular strategy that was promoted and financed by UNICEF was to build community care centers (CCCs). In contrast to the large-scale Ebola treatment units (ETUs) with 200 beds, the idea was to build small 8-bed facilities that are embedded in the communities (Abramowitz et al. 2016).[10] These CCCs were staffed with people recruited from the surrounding communities and engaged in awareness raising campaigns. The message used to build trust and confidence in the community toward CCCs was: "CCC is where you and your loved ones who are sick with Ebola symptoms can receive safe care closer to your home and community" (p. 16). I consider CCCs as the main proxy for foreign relief aid in this study.[11]

Building new CCCs required cooperation with paramount chiefs in Sierra Leone, as they were the key contact point for foreign donors in the process of site selection for the CCCs (Oosterhoff, Mokuwa, and Wilkinson 2015). Paramount chiefs in Sierra Leone are quintessential patrons. They are heads of Sierra Leone's chiefdoms and have significant public authority in the area of raising taxes, dispute settlement, and land allocation (Fanthorpe 200). Chiefs come from small set of ruling families established during the colonial times and are not elected by citizens, but elected for life by a small group of local elites called the "Tribal Authority" (Acemoglu, Reed, and Robinson 2014). Given the paramount chiefs' local authority and centrality in the respective communities, foreign donors seeked out the support from paramount chiefs to embed CCCs in the local communities and increase their social acceptance and usage among people living close by (Oosterhoff, Mokuwa, and Wilkinson 2015). Oosterhoff, Mokuwa, and Wilkinson (2015) report that the donors' focus on paramount chiefs also meant that donors circumvented elected government authorities in important decisions, such as the placement of CCCs.

In general, chiefs played a crucial role in the fight against Ebola (Richards 2016; Windt and Voors 2020; Wilkinson et al. 2017).[12] They adopted and enforced chiefdom bylaws in regard to

10. In appendix A, there is a picture of a typical CCC in Sierra.

11. I could also look at other types of ETUs, but with these units, it was difficult to justify that the underlying assumptions in my identification strategy are satisfied.

12. It is not only in the case of Ebola where chiefs play an important role in Sierra Leone. For instance, Acemoglu, Reed, and Robinson (2014) find that economic outcomes in chiefdoms are contingent upon the number of ruling families available for chief selection. A greater number of families leads to improved outcomes due to heightened political competition.

Ebola (Richards 2016). These bylaws restricted important factors that contributed to the spread of Ebola, such as traditional burial practices, the hosting of sick people, and services of traditional healers. Chiefs also participated in information campaigns to counter-act misinformation and reduce distrust in CCCs. Furthermore, they organized local Ebola task forces that taught the local communities about the risks of Ebola and how to identify sick people (Richards 2016). Richards notes that paramount chiefs adopted many of these practices independent from the national governments guidelines as they learned through their own experiences how to deal with the disease.

Drawing from the delineated patron mechanism, I anticipate that the introduction of CCCs has engendered skepticism within the local populace regarding their leaders' capability to collaborate effectively with unelected chiefs in the production of public goods. The conspicuous bypassing of elected leaders by donors, who directly sought support from chiefs, may function as a discernible signal to the public, suggesting a lack of readiness on the part of the national government to manage the implementation of CCCs. Consequently, I hypothesize that *the placement of CCCs has caused a decline in support for the APC, the incumbent ruling party, among residents residing in proximity to CCC sites.*

4 Research Design

4.1 Data and Sample

I utilize geo-referenced data from the Afrobarometer survey (BenYishay et al. 2017). The Afrobarometer conducts its surveys in multiple waves, with Rounds 5, 6, and 7 covering Sierra Leone. Each of these survey waves comprises nationally representative samples of 1,200 people.[13] For the purposes of this paper, Rounds 5 and 6 are particularly pertinent, as Round 5 was conducted in June/July 2012, and Round 6 was conducted in May/June 2015. This sequential arrangement of surveys offers the opportunity to discern attitudes both before the Ebola outbreak and after the

13. Afrobarometer employs a stratified sample approach based on administrative units and rural/urban distinctions. Additionally, it randomly selects primary sampling units as clusters within the defined strata and interviews eight people within each cluster.

majority of foreign relief aid had been disbursed. These two rounds together comprise a total of 2,381 respondents.

4.2 Measuring Political Support

To gauge political support for the incumbent in Sierra Leone, I rely on the Afrobarometer question that inquires about respondents' party preference in a hypothetical presidential election. The specific wording of the question is as follows: "If a presidential election were held tomorrow, which party's candidate would you vote for?". This question has been employed in prior studies to assess the impact of foreign aid and foreign direct investment on incumbent approval (Knutsen and Kotsadam 2020; Briggs 2019; Wang, Pearson, and McCauley 2022).

I generate two distinct variables to measure incumbent support. Consistent with Knutsen and Kotsadam (2020), I distinguish between extensive and intensive margins. In both variables, the value is set to 1 if a respondent indicates they will vote for incumbent president Koroma's All People's Congress (APC) party and 0 if they express support for any other party except the APC. In the intensive margin variable, respondents who either refused to answer or stated they do not know for whom they will vote are coded as NA. In the extensive margin variable, these respondents are also coded as 0. In essence, the intensive margin variable exclusively compares individuals with clear voting intentions, while the extensive margin variable interprets having no party preference at the time of the survey as a lack of support for the incumbent.

Across both survey rounds, 56% of respondents indicated that they would vote for the incumbent president based on the intensive margin variable, while 36.6% expressed support when using the extensive margin variable.[14] Between round 5 and round 6, there was a general decline in support for the president. In round 5, 39.4% of respondents indicated support for the president (extensive margin), but by round 6, this figure decreased to 33.7%. The majority of this decline was concentrated in President Koroma's core voter districts in the Northern and Western Provinces, where his support dwindled from 76.1% in round 5 to 15.3% in round 6 — a significant 60.8 per-

14. Additional descriptive statistics can be found in table B.1 in the appendix.

centage point decrease. While a decline in the president's approval due to the Ebola crisis was expected, the magnitude of the decrease is remarkable, particularly given that it emanated from his primary support base.

4.3 Community Care Centers as Treatment

As outlined earlier, I employ the distribution of CCCs as indicators of the local presence of foreign relief aid. The data set detailing the locations of CCCs is sourced from the Human Data Exchange data repository, specifically from a master file encompassing all CCCs in Sierra Leone.[15] This data set provides geo-locations for the majority of facilities. In cases where this information was absent, I estimated the location through supplementary resources, aided by Google Maps and OpenStreetMap. In total, the data set comprises information on 49 CCCs.

Survey participants are classified into the treatment group if they reside in proximity to a CCC location. The metric for proximity is the travel distance in kilometers from the nearest CCC to the center of the enumeration area. I calculated the distance using the *osrm* package in R, which is a routing service based on OpenStreetMap. The average travel distance to a CCC within the Afrobarometer sample is 51.1 km.[16] Respondents are categorized as part of the treatment group if their travel distance is less than or equal to 10 km.[17] This threshold aligns with the approach taken by Baldwin and Winters (2023), who utilized distances of 5 km and 10 km to explore when citizens attribute credit to international donors for foreign aid projects. Furthermore, this measure is realistic given the travel patterns observed in Sierra Leone. Peak et al. (2018) examined the mobility of Sierra Leone citizens during the national lockdown compared to their mobility before and after the lockdown, using mobile phone data. They discovered that mobile phone users traveled an average of 12.5 km before and 12.7 km after the lockdown. Given that CCCs are smaller structures likely only prominently observed by individuals in close proximity, I selected a more

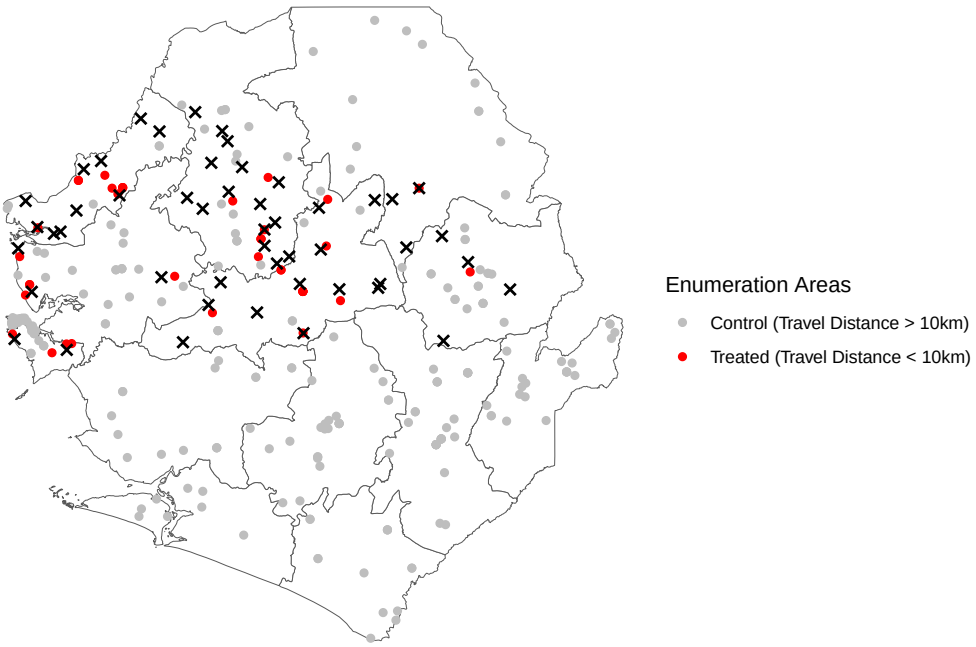
15. The file is available at https://data.humdata.org/dataset/sierra-leone-nerc-ebola-care-facilities-master-list (last accessed on September 11, 2020).

16. The range of travel distances spans from 0.04 km to 214.55 km, with a median of 27.9 km.

17. This threshold assumes that every individual within the range is treated, while those outside it are not. To ensure robustness, I will conduct model estimations using various thresholds.

conservative threshold of 10 km.

Figure 1: Distribution of Community Care Centers and Enumeration Areas



Note: Map shows the location of enumeration areas in Afrobarometer Rounds 5 and 6. Red dots represent enumeration areas within 10 km of a CCC and gray dots represent control enumeration areas. The **X** symbols represent the locations of the CCCs.

Figure 1 illustrates the geographical distribution of CCCs, incorporating the locations of Afrobarometer survey enumeration areas in rounds 5 and 6. The red enumeration areas fall within 10 km of a CCC, while the gray areas indicate greater travel distances. In total, 13.4% of respondents were classified as treated. The plot underscores that CCCs were exclusively situated in districts within the Northern and Eastern Provinces, as well as in the Kono district. This aligns with the CCC deployment pattern outlined by Abramowitz et al. (2016).

4.4 Empirical Strategy

A challenge in causal estimation arises from the non-random placement of CCCs. Extensive documentation indicates that CCC locations were influenced by various factors, including local geography and infrastructure (Abramowitz et al. 2016). A comparison of pre-treatment covariates at

the enumeration level further exposes notable differences between treated and control areas (refer to table C.1 in appendix C). Treated areas are more likely to be situated in chiefdoms with ethnic majorities aligned with the APC coalition, correlating with higher pre-treatment levels of support for the incumbent APC president. Additionally, treated areas are in closer proximity to a district capital.

To tackle the challenge of non-random treatment assignment, I employ a two-period difference-in-differences (DiD) estimator. The fundamental assumption underpinning DiD is the parallel trends assumption, which posits that trends in the treated and control groups would have followed a similar path in the absence of treatment. While it is challenging to empirically verify this assumption in a two-period DiD due to the absence of pre-treatment periods, I contend that the likelihood of a selection on trends issue is low. One potential concern is that CCCs were strategically placed in areas where support for the incumbent was increasing, while control areas experienced a decline. Despite the difficulty in assessing this assumption, it seems improbable that this is the case. Additionally, research indicates that EVD exposure did not significantly influence the location of CCCs. According to Christensen et al. (2020), sections with CCCs and those without CCCs showed no significant differences in pre-treatment EVD case experiences.

A second concern revolves around the possibility of politically motivated CCC placement. For instance, Maffioli (2021) found in Liberia that CCCs were more likely located in swing villages. Given Sierra Leone's pronounced ethnic political divide (Harris 2014), it is plausible that the incumbent government strategically positions CCCs in areas where a majority of co-ethnics reside.[18] The covariate balance analysis results indicate that CCCs were more likely placed in areas with ethnic ties to the incumbent president's party. The key question is whether these areas exhibit differential trends in presidential support.

Examining the aggregate vote shares of President Koroma in 2007 and 2012 across Sierra Leone's districts reveals relatively stable approval, particularly in the northern and western provinces where most CCCs are situated (see table 1). There is a slight increase in approval from 2007 to

18. There is literature suggesting that incumbents may divert aid to regions with co-ethnics (e.g., Jablonski 2014).

2012 in these districts.[19] In districts of the southern and eastern provinces, known as opposition strongholds, the picture is more nuanced. Some districts, such as Bonthe and Moyamba, witnessed a decline in Koroma's vote shares, while others, such as Kono, experienced gains. While this is not smoking gun evidence, it provides some confidence that disparities between treated and control units are in levels and not in trends.[20]

Table 1: Vote Share of Koroma by District and Year

District	Province	2012	2007	Hosts CCC
Bo	Southern	16.7	26.0	No
Bonthe	Southern	11.7	41.4	No
Moyamba	Southern	26.2	34.7	No
Pujehun	Southern	15.5	7.0	No
Kailahun	Eastern	22.6	9.4	No
Kenema	Eastern	18.7	16.9	No
Kono	Eastern	58.2	41.5	Yes
Bombali	Northern	93.2	89.9	Yes
Kambia	Northern	82.0	80.9	Yes
Koinadugu	Northern	86.4	64.6	Yes
Port Loko	Northern	90.2	88.2	Yes
Tonkolili	Northern	92.6	88.7	Yes
Western Area Rural	Western	74.3	68.3	Yes
Western Area Urban	Western	71.4	70.8	Yes

Note: Data for 2012 elections comes from Nation Election Commission and the results for 2007 were retrieved from the African Elections Database

The primary DiD specification is articulated in equation 1. The subscript i denotes the survey respondent, while t represents the survey round. Given the Afrobarometer's data structure as a repeated cross-section, I designate the round 5 survey as the pre-treatment period and the round 6 survey as the post-treatment period. "Treated" refers to respondents residing in an enumeration area within a 10 km travel distance of a CCC. The subscript s pertains to the survey respondent's

19. Only Koinadugu experienced a larger increase in support for Koroma between 2007 and 2012.

20. As a robustness test, I will exclude districts in the southern and eastern provinces (except for Kono) from the analysis. This should create more homogeneous control groups.

cluster, defined as the respondent's section.[21] In total, the sample encompasses 153 sections.

$$y_{ist} = \beta_1 \text{Round 6}_{ist} + \beta_2 \text{Treated}_{ist} + \beta_3(\text{Round 6}_{ist} \times \text{Treated}_{ist}) + \mathbf{X}'_{ist}\delta + \zeta_p + \gamma_c + \epsilon_{ist} \quad (1)$$

To estimate the model, I utilize sample weights provided by the Afrobarometer. The main specification incorporates a set of demographic variables unaffected by the treatment. Specifically, I include age, age squared, level of education, gender, urban residence, shared co-ethnicity with the president, a dummy for being a Muslim, travel time to the closest town, travel time to the closest district headquarters, and the log number of pre-treatment Ebola cases in a respondent's section.[22] These variables are encapsulated in $\mathbf{X}'_{ist}$. In addition to these covariates, I incorporate chiefdom and CCC fixed effects denoted by ζ_p and γ_c.[23]

5 CCCs Reduce Support for Incumbent

The results in table 2 suggest that CCCs had a significant negative effect on people's support for the incumbent President Koroma. When excluding individuals with no party preference at the time of the survey, I find that individuals living close to CCCs have an 88.1 percentage point lower approval of the president than those living further away. For comparison, pre-treatment support among treated respondents was 88.5%. Examining the extensive margin variable, where I assume that respondents without a declared party preference oppose the president, reveals a similar trend. The average treatment effect on the treated shows a decline in approval by 62.7 percentage points, representing an 85.3% decrease relative to pre-treatment approval ratings.[24]

One possible explanation for these large-scale effects is that the control group may not serve as an appropriate counterfactual. The support in opposition areas is already so low that we could observe a floor effect. In other words, support for the president cannot fall further, which exagger-

21. A section corresponds to Sierra Leone's fourth and lowest administrative level.
22. I interact the Ebola cases variable with the round 6 dummy as the number of Ebola cases likely had a different effect on respondents in round 5 and round 6.
23. CCC fixed effects capture unobserved effects related to a respondent's closest CCC.
24. Pre-treatment approval among treated residents in round 5 was 73.5% using the extensive margin variable.

Table 2: Effect on CCCs on Voting for President

	Voting for President					
	Intensive Margin			Extensive Margin		
	All SL	Pro-APC	Treated	All SL	Pro-APC	Treated
	(1)	(2)	(3)	(4)	(5)	(6)
Treated	0.604***	0.347***		0.460***	0.254***	
	(0.139)	(0.096)		(0.093)	(0.065)	
Round 6	0.094	−0.375***	−0.620	0.002	−0.327***	−0.583*
	(0.078)	(0.062)	(0.320)	(0.057)	(0.047)	(0.182)
Treated X Round 6	−0.881***	−0.416***		−0.627***	−0.296***	
	(0.119)	(0.102)		(0.085)	(0.072)	
Chiefdom FE	Yes	Yes	Yes	Yes	Yes	Yes
CCC FE	Yes	Yes	Yes	Yes	Yes	Yes
Covariates	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,511	898	161	2,298	1,376	239
R^2	0.304	0.321	0.642	0.229	0.282	0.467

*p<0.05; **p<0.01; ***p<0.001

Note: The results are derived from three distinct samples. The *All SL* sample encompasses all Afrobarometer observations within Sierra Leone. The *Pro-APC* sample is confined to observations from specific districts: Bombali, Kambia, Koinadugu, Kono, Port Loko, Tonkolili, Western Area Rural, and Western Area Urban. The *Treated* sample comprises observations in close proximity to a given CCC, available for both round 5 and round 6. In the *All SL* and *Pro-APC* models, parentheses encapsulate cluster-robust standard errors clustered at the section level. For the *Treated* sample, I employ the approach advocated by Pustejovsky and Tipton (2018) to adjust the cluster-robust standard errors due to the limited number of clusters. The set of covariates includes age, age squared, education, Muslim affiliation, co-ethnicity with the president, urban residence, logarithm of the number of pre-treatment Ebola cases at the section level interacted with the round 6 dummy variable, travel time to town, and travel time to the district headquarters. Full results are displayed in table D.1.

ates the effect size of CCCs. To address this issue, I employ two additional approaches to estimate the effect of CCCs. First, I focus only on districts in which Koroma had a vote share larger than 50% in the 2012 election. In this *Pro-APC* sample, I also find a significant negative effect of CCCs on support for Koroma, but the magnitude of the coefficients is around 50% smaller than when running the analysis on the *All SL* sample. With the intensive margin variable, I observe a decline in support of 41.6 percentage points. Using the extensive variable, the ATT estimate reflects a reduction of support for the incumbent president by 29.6 percentage points.

Second, I estimated the effect using an alternative causal identification strategy. The results in columns 3 and 6 in table 2 are based on a fixed effect estimator implemented by Knutsen et al. (2017). For this approach, I subset the data to treated enumeration areas that are close to a CCC for which we can observe treated enumeration areas in both rounds.[25] The treatment group in this specification consists of respondents in enumeration areas in round 6, and the control group includes respondents in enumeration areas surveyed in round 5. The assumption behind this identification strategy is that enumeration areas in round 5 are a valid counterfactual for enumeration areas in round 6. The balance test in table C.1 in appendix C suggests that round 5 and round 6 treated enumeration areas have a relatively balanced set of covariates. The results of this fixed effect estimator can be interpreted as the difference in the level of support of individuals living in proximity to a given CCC before and after the CCC was introduced.

The results from this alternative identification strategy confirm the main findings. The effect size is similar to the results in the *All SL* sample. In the intensive margin specification, respondents in round 6 expressed 70.2 percentage points lower approval than respondents in round 5. This coefficient is, however, not statistically significant. In the condition with the extensive variable, I find a statistically significant decline of support by 58.3 percentage points. Despite this alternative approach having lower external validity than the DiD approach, as it focuses on a very small subsample of observations, the results bolster the findings from the main analysis by emphasizing the

25. As an example, consider CCCs A and B. For CCC A, there exists a set of enumeration areas that are within 10 km of travel distance in both survey rounds. In contrast, for CCC B, there is only a set of enumeration areas that are within 10 km of travel distance in either survey round 5 or round 6. In this test, I only include the set of enumeration areas that are close to CCC A but not CCC B.

substantial decline in approval among very similar groups of citizens who are living close to CCCs.

To further enhance the robustness of the results, I conducted a series of additional empirical tests. First, I assessed the sensitivity of the outcomes to different treatment thresholds, varying them from 7 to 27 km. Second, I examined the influence of individual districts on the results through a leave-one-out analysis. Third, I expanded the analysis beyond voting choice by including an alternative measure of support as a dependent variable based on respondents' feelings of closeness to the APC. Fourth, given that CCCs aim to secure the support of paramount chiefs for an entire chiefdom, I introduced an alternative treatment considering respondents treated if their chiefdom hosts a CCC. Fifth, to address concerns about education bias, I evaluated whether the estimates were sensitive to respondents' education levels. Finally, to refine the counterfactual, I re-estimated the model using only respondents living within 20 km of a town. Across all these tests, the main result remained robust.[26]

6 Testing the Mechanisms

Despite the generally positive assessment of CCCs in combating Ebola (see Abramowitz et al. 2016; Pronyk et al. 2016; Mokuwa and Maat 2020), I observe a decline in support for the incumbent president associated with CCCs. According to the patron mechanism argument, this is because people learn new pieces of information about elected politicians' inability to co-produce public goods with their local patrons. To scrutinize this mechanism, I incorporate additional survey responses from the Afrobarometer round 6 survey, during which respondents in Sierra Leone answered Ebola-specific questions. Of particular interest are inquiries about respondents' evaluations of the effectiveness of various actors in controlling the Ebola outbreak and their confidence in the Government of Sierra Leone's preparedness for future pandemics.[27] If the results are influenced by the patron

26. I display detailed results of these robustness tests in appendix E.

27. The first question's exact wording is "How effective or ineffective was each of the following in bringing the Ebola outbreak under control in this country, or haven't you heard enough to say. [Actor]?", while the second question is "How confident are you that the Government of Sierra Leone has been taking necessary steps so that it will be more prepared to respond if there is a new Ebola outbreak in the future." These questions are Q86A-SRL to Q86F-SRL in round 6 of the Afrobarometer.

mechanism, we would anticipate observing a divergence in perceptions about which actor was responsible for containing Ebola. Specifically, I expect individuals to assign greater importance to their local government while diminishing credit to the national government. This would indicate that people updated their beliefs about the ability of elected and unelected leaders to cooperate.

Table 3: Attributing Effectiveness in Controlling Ebola

	Nat. Gov.	Local Gov.	Local NGOs	IOs	Other Govs.	Prep. Future
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Pooled						
Treated	−0.251	0.407***	0.083	−0.073	0.004	0.067
	(0.146)	(0.096)	(0.137)	(0.122)	(0.118)	(0.124)
Chiefdom FE	Yes	Yes	Yes	Yes	Yes	Yes
CCC FE	Yes	Yes	Yes	Yes	Yes	Yes
Covariates	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,069	1,059	983	990	981	1,039
R^2	0.155	0.206	0.134	0.180	0.116	0.174
Panel B: Interaction						
Treated	0.937	0.234	−2.910**	−1.523*	−0.722	2.818*
	(0.632)	(0.940)	(0.912)	(0.716)	(0.540)	(1.413)
Treated X Log Num. Families	−0.911*	0.227	2.025***	1.062*	0.559	−1.992*
	(0.410)	(0.587)	(0.600)	(0.514)	(0.368)	(0.996)
Chiefdom FE	Yes	Yes	Yes	Yes	Yes	Yes
CCC FE	Yes	Yes	Yes	Yes	Yes	Yes
Covariates	Yes	Yes	Yes	Yes	Yes	Yes
Observations	749	741	676	676	668	722
R^2	0.183	0.223	0.127	0.175	0.159	0.187

*p<0.05; **p<0.01; ***p<0.001

Note: The table includes cluster-robust standard errors clustered at the section level. The set of covariates used are: age, age squared, education, muslim, co-ethnic of president, urban, log number of pre-treatment Ebola cases at the section level, travel time to town, and travel time to district headquarters. The number of observations in panel B is different from that in panel A because there is no information on the number of ruling families for respondents in the Freetown area.

In panel A of table 3, the observed findings align with the expected outcomes of the patron mechanism. When comparing respondents in treated and untreated areas, those in proximity to CCCs credit their local governments significantly more for controlling Ebola than those residing farther away. Simultaneously, individuals in treated areas perceive the national government as less effective, although this difference lacks statistical significance. The impact of CCCs on the assessments of NGOs, international organizations (IOs), and the government's preparedness for future epidemics is not statistically significant. These results substantiate qualitative evidence

suggesting that international donors collaborated directly with local leaders, bypassing elected national officials (Oosterhoff, Mokuwa, and Wilkinson 2015). The findings suggest that CCCs enhance the profiles of local leaders at the expense of the national government, ultimately hindering its reputation for effective cooperation.

To further fortify the evidence supporting the patron mechanism, I examined the attribution of blame for poor local governance performance. Drawing from Windt and Voors (2020), who demonstrate the effectiveness of powerful paramount chiefs in containing the Ebola spread, I anticipate that strong chiefs will also prove more effective in CCC implementation than their weaker counterparts. Essentially, CCCs in chiefdoms with weak chiefs should, on average, exhibit less efficient implementation than those in chiefdoms with strong paramount chiefs. If the patron mechanism applies, then I expect that the national government will receive a disproportionately higher share of blame in areas with weak paramount chiefs. To scrutinize this implication, I introduce an interaction term between the treated with CCC variable and a chiefdom's log number of ruling families. Acemoglu, Reed, and Robinson (2014) propose that the number of ruling families in a chiefdom indicates the political constraints on paramount chiefs.

In panel B of table 3, the results reinforce the presence of the patron mechanism. Respondents in treated areas residing in chiefdoms with less powerful paramount chiefs credited the national government less for controlling Ebola and perceived it as less prepared for future epidemics (columns 1 and 6). Simultaneously, they attributed more credit to international organizations (IOs) and local NGOs (columns 3 and 4). The power of the paramount chief had no statistically significant effect on people's assessment of the local government's contribution to containing Ebola (column 2). These results suggest that in areas with less capable chiefs, NGOs and IOs likely played a more prominent role in addressing implementation deficiencies, which respondents perceived as a failure of the national government to collaborate effectively with the local government. Consequently, this led to a diminished perception of the national government's effectiveness in those chiefdoms.

An alternative mechanism accounting for the decline in support is the possibility that CCCs

Table 4: Effect of CCCs on Governance Outcomes

	No Healthcare	No Food	Stealing	Bribe Docs	Bribe Healthcare
	(1)	(2)	(3)	(4)	(5)
Treated X Round 6	−0.089	−0.051	−0.089	−0.054	−0.255
	(0.203)	(0.191)	(0.173)	(0.140)	(0.193)
Chiefdom FE	Yes	Yes	Yes	Yes	Yes
CCC FE	Yes	Yes	Yes	Yes	Yes
Control Variables	Yes	Yes	Yes	Yes	Yes
Observations	2,292	2,293	2,296	2,255	2,255
R^2	0.189	0.172	0.105	0.160	0.148

*p<0.05; **p<0.01; ***p<0.001

Note: The table includes cluster-robust standard errors clustered at the section level. The set of covariates used are: age, age squared, education, muslim, co-ethnic of president, urban, log number of pre-treatment Ebola cases at the section level, travel time to town, and travel time to district headquarters.

performed poorly and caused negative externalities. This would contradict previous assessments of CCCs, which emphasized their central role in combating Ebola. The results in table 4 indicate that CCCs did not exacerbate the situation for people across various metrics. Using again data from Afrobarometer rounds 5 6, individuals residing near CCCs did not encounter more challenges in accessing healthcare or obtaining sufficient food (columns 1 and 2). CCCs also did not contribute to increased violence and crime in their vicinity (column 3). The evidence even suggests that CCCs had no impact on the prevalence of bribery for government services (columns 4 and 5). While not statistically significant, the coefficients are negative, implying that individuals near CCCs less frequently had to pay bribes for medical treatment. Thus, these findings suggest that it is improbable for CCCs to have caused a decline in public support for the president due to generating undesirable externalities.

A second alternative explanation is that the presence of CCCs led to a general decline in the perceived competence of the national government. CCCs prominently display information about the influx of foreign funding.[28] Consequently, individuals living close to CCCs might harbor stronger perceptions that their government was incapable of managing the crisis independently and required

28. See figure A.1 displaying a typical CCC in Sierra Leone.

Table 5: Effect of CCCs on Perceived Competence

	Solve Problems	MP Listen	Corrupt Pres.	Corrupt MP	Corrupt Gov.
	(1)	(2)	(3)	(4)	(5)
Treated X Round 6	−0.104	−0.138	0.045	−0.007	−0.102
	(0.119)	(0.180)	(0.129)	(0.153)	(0.114)
Chiefdom FE	Yes	Yes	Yes	Yes	Yes
CCC FE	Yes	Yes	Yes	Yes	Yes
Control Variables	Yes	Yes	Yes	Yes	Yes
Observations	2,210	2,197	2,118	2,132	2,142
R^2	0.108	0.153	0.208	0.121	0.151

*p<0.05; **p<0.01; ***p<0.001

Note: The table includes cluster-robust standard errors clustered at the section level. The set of covariates used are: age, age squared, education, muslim, co-ethnic of president, urban, log number of pre-treatment Ebola cases at the section level, travel time to town, and travel time to district headquarters.

external assistance. The delayed arrival of CCCs during the Ebola epidemic could also underscore a lack of responsiveness to people's needs. Moreover, politicized foreign aid is often seen as more susceptible to corruption (Findley, Milner, and Nielson 2017). The introduction of CCCs may have thus led people to perceive their government as more corrupt. Thus, CCCs can be connected to various different mechanisms and thought processes that increase people's perception that their government is incompetent and does not serve the people.

To evaluate the validity of this competence argument, I examine three distinct measures. First, I include the question regarding whether individuals believe their government can address their most crucial policy issue in the next five years.[29] Second, to explore the concept of responsiveness, I incorporate the question that probes individuals' perceptions of how often their members of parliament attempt to listen to their constituents' concerns.[30] Third, I examine whether CCCs change individuals' beliefs about how strongly political actors are involved in corruption.[31]

29. The exact wording of the question is as follows: "Thinking of the problem you mentioned first, in your opinion, how well or badly would you say the current government is handling this problem, or haven't you heard enough to say?"

30. The exact wording of the question is as follows: "How much of the time do you think the following try their best to listen to what people like you have to say: Members of Parliament?"

31. The exact wording of the question is as follows: "How many of the following people do you think are involved in corruption, or haven't you heard enough about them to say [Actor]?"

The results in table 5 suggest that CCCs did not strongly affect people's perceptions of their government's competence. Across all three measures, I observe that residing close to a CCC has a statistically insignificant effect. There is no decline in people's perception that their government can solve their most pressing issues. There is also no significant decline in the responsiveness of MPs and people's beliefs about the level of corruption of the national government. Overall, these additional tests provide robust support for the finding that the decline in support is driven by factors underlying the patron mechanism.

7 Conclusion

In this study, I present evidence that disaster relief aid during the Ebola epidemic in Sierra Leone had a negative effect on the political support of the incumbent president. This effect is attributed to two previously neglected factors. First, the relief aid originated from international donors who needed to construct new local infrastructure to address the crisis. Second, Sierra Leone's local governance vested a significant degree of authority in unelected paramount chiefs. These two factors mutually reinforced each other, as international donors directly engaged with paramount chiefs, bypassing the national government to secure local support for their new health facilities. Simultaneously, there is evidence that in settings with unelected patrons, individuals evaluate their elected officials based on their ability to collaborate with these patrons (Baldwin 2013, 2015). These two features led to a sharp decline in support for President Koroma.

The results imply the existence of significant heterogeneity in the extent to which relief aid affects support for an incumbent president, as the conditions underlying the effects in Sierra Leone are not unique to the country. Various countries across the world reportedly possess local governance structures resembling the one in Sierra Leone with paramount chiefs (see Windt et al. 2019; Baldwin 2015). Furthermore, relief spending in most developing countries involves international donors, such as international organizations and NGOs. The crucial factor to determine is the extent to which international donors bypass the national government when implementing relief spending.

This occurrence is, however, not uncommon. For example, reports indicate that in Haiti following the 2010 earthquake, foreign relief aid bypassed the Haitian government (NBC 2010). Thus, future research is encouraged to expand single-country studies on the effect of relief aid on political support to further disentangle the scope conditions influencing the political effects of relief aid.

From a policy perspective, these findings hold significance as they underscore a crucial trade-off for international donors allocating resources to relief aid. On the one hand, they aim to involve the local community to garner acceptance for their relief efforts. On the other hand, they are cautious not to undermine the legitimacy and political strength of the host country's government. This study highlights that in the case of Sierra Leone, the international donor community struggled to reconcile these trade-offs. While CCCs proved effective in providing care to citizens, they exposed a lack of collaboration between the national government and paramount chiefs, diminishing the government's standing among the population. This scenario is less than ideal, as it further politicizes the distribution of disaster relief aid, complicating international donors' ability to provide the most effective response to a disaster. Therefore, the policy implication of this study emphasizes the importance of ensuring that the domestic government plays a central role in implementing disaster relief efforts.

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Online Appendix

A Picture Community Care Center

Figure A.1: Example Community Care Center in Sierra Leone

Photo: Abbie Trayler-Smith/Oxfam, January 2015

B Descriptive Statistics

Table B.1: Summary Statistics

Statistic	N	Mean	St. Dev.	Min	Max
Panel A: Depedent Variables					
Vote for Incumbent (Intesive Margin)	1,555	0.560	0.497	0	1
Vote for Incumbent (Extensive Margin)	2,381	0.366	0.482	0	1
Panel B: Independent Variables					
Treated (<10km Travel Distance)	2,381	0.134	0.341	0	1
Round 6	2,381	0.500	0.500	0	1
Panel C: Control Variables					
Age	2,364	37.937	13.357	18	99
Age Squared	2,364	1,617.567	1,206.474	324	9,801
Education	2,372	1.223	1.133	0	3
Urban	2,381	0.374	0.484	0	1
Muslim	2,355	0.639	0.480	0	1
Co-Ethnic President	2,380	0.268	0.443	0	1
Male	2,381	0.497	0.500	0	1
Pre-Treatment Number of Ebola Cases	2,349	8.720	57.623	0	895
Time to District Capital	2,381	47.341	43.735	0.000	211.600
Time to Major Town	2,381	23.804	21.265	0.000	114.400

C Balance Sample

Table C.1: Balance Sample

	Diff R6-R5 Treated	Treated vs. Control
	(1)	(2)
Time to Major Town	0.006	−0.0001
	(0.008)	(0.001)
Time to District Capital	−0.001	−0.001*
	(0.005)	(0.001)
Log Pre-Treatment Ebola Cases	0.015	0.006
	(0.229)	(0.016)
Number of Chief Families	−0.027	−0.007
	(0.098)	(0.012)
Mean Light 2013 Chiefdom	−0.014	−0.011
	(0.510)	(0.106)
Mean Elevation Chiefdom	−0.317	−0.036
	(1.530)	(0.145)
Log Population Density Chiefdom	−0.061	0.043
	(0.262)	(0.031)
Number of Hospitals Chiefdom	−0.011	−0.004
	(0.020)	(0.003)
APC Supporting Ethnic Group	−0.299	0.337***
	(0.386)	(0.063)
Constant	1.311	−0.018
	(1.416)	(0.143)
Observations	30	212
R^2	0.145	0.246

*p<0.05; **p<0.01; ***p<0.001

Note: Unit of analysis is an individual enumeration area in the Afrobarometer survey. Column 1 compares treated enumeration areas in round 6 to treated enumeration areas in round 5. Column 2 compares treated to non-treated enumeration areas. Cluster-robust standard errors are clustered at the section level.

D Full Main Results

Table D.1: Effect on CCCs on Voting for President

	Voting for President					
	Intensive Margin			Extensive Margin		
	All SL	Pro-APC	Treated	All SL	Pro-APC	Treated
	(1)	(2)	(3)	(4)	(5)	(6)
Treated	0.604***	0.347***		0.460***	0.254***	
	(0.139)	(0.096)		(0.093)	(0.065)	
Round 6	0.094	−0.375***	−0.620	0.002	−0.327***	−0.583*
	(0.078)	(0.062)	(0.320)	(0.057)	(0.047)	(0.182)
Treated X Round 6	−0.881***	−0.416***		−0.627***	−0.296***	
	(0.119)	(0.102)		(0.085)	(0.072)	
Age	−0.003	−0.004	−0.012	0.004	0.006	0.010
	(0.006)	(0.007)	(0.015)	(0.004)	(0.005)	(0.014)
Age squared	0.00002	0.00001	0.0001	−0.0001	−0.0001	−0.0001
	(0.0001)	(0.0001)	(0.0002)	(0.00004)	(0.00005)	(0.0001)
Male	0.041	0.058	0.020	0.050**	0.051*	0.071
	(0.022)	(0.030)	(0.058)	(0.018)	(0.025)	(0.064)
Urban	0.018	−0.025	0.144	−0.0001	−0.019	0.209
	(0.083)	(0.100)	(0.077)	(0.080)	(0.071)	(0.107)
Co-ethnic President	0.052	0.059	0.062	0.063	0.112**	0.133
	(0.047)	(0.048)	(0.080)	(0.037)	(0.037)	(0.115)
Muslim	0.021	0.007	−0.048	−0.021	−0.059	−0.083
	(0.034)	(0.038)	(0.091)	(0.029)	(0.033)	(0.120)
Education	−0.020	−0.013	−0.034	−0.018	−0.016	−0.020
	(0.014)	(0.017)	(0.024)	(0.012)	(0.015)	(0.020)
Time to District Capital	0.004	0.002	−0.001	0.003	0.002	−0.003
	(0.003)	(0.002)	(0.003)	(0.003)	(0.002)	(0.009)
Time to Major Town	0.005	0.001	0.022	0.005	0.001	0.012
	(0.003)	(0.002)	(0.027)	(0.003)	(0.002)	(0.017)
Log Ebola Cases X Round 6	0.046	0.076**	−0.064	0.010	0.037	−0.050
	(0.034)	(0.024)	(0.153)	(0.024)	(0.022)	(0.080)
Constant			0.459			0.037
			(0.758)			(0.511)
Chiefdom FE	Yes	Yes	Yes	Yes	Yes	Yes
CCC FE	Yes	Yes	Yes	Yes	Yes	Yes
Covariates	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,511	898	161	2,298	1,376	239
R^2	0.304	0.321	0.642	0.229	0.282	0.467

*p<0.05; **p<0.01; ***p<0.001

Note: Table depicts full results displayed in table 2. For more details consult with note below table 2. Parentheses display cluster-robust standard errors clustered at the section level.

E Robustness Main Results

Table E.1: Effect on CCCs on Feeling Close to APC

	Feeling Close to APC			
	All SL Int.	Pro-APC Int.	All SL Ext.	Pro-APC Ext.
	(1)	(2)	(3)	(4)
Treated	0.543***	0.319***	0.505***	0.308***
	(0.122)	(0.078)	(0.110)	(0.075)
Round 6	0.031	−0.347***	0.029	−0.304***
	(0.059)	(0.048)	(0.053)	(0.045)
Treated X Round 6	−0.753***	−0.389***	−0.685***	−0.357***
	(0.090)	(0.077)	(0.088)	(0.082)
Close to Party (Intensive)	0.413***	0.452***		
	(0.025)	(0.030)		
Close to Party (Extensive)			0.414***	0.458***
			(0.024)	(0.028)
Age	−0.001	0.001	−0.001	0.001
	(0.004)	(0.004)	(0.003)	(0.004)
Age squared	0.00002	−0.00001	0.00001	−0.00002
	(0.00004)	(0.00005)	(0.00004)	(0.00004)
Male	0.020	0.025	0.012	0.014
	(0.016)	(0.022)	(0.015)	(0.019)
Urban	0.017	−0.050	0.013	−0.044
	(0.081)	(0.072)	(0.074)	(0.072)
Co-ethnic President	0.047	0.106***	0.035	0.089**
	(0.033)	(0.030)	(0.029)	(0.027)
Muslim	−0.018	−0.034	−0.015	−0.036
	(0.028)	(0.029)	(0.025)	(0.027)
Education	−0.008	0.004	−0.007	0.004
	(0.012)	(0.014)	(0.011)	(0.013)
Time to District Capital	0.002	0.0002	0.003	0.0002
	(0.003)	(0.002)	(0.003)	(0.002)
Time to Major Town	0.005*	0.002	0.005*	0.002
	(0.003)	(0.002)	(0.003)	(0.002)
Log Ebola Cases X Round 6	0.004	0.031*	0.002	0.025
	(0.018)	(0.013)	(0.015)	(0.013)
Chiefdom FE	Yes	Yes	Yes	Yes
CCC FE	Yes	Yes	Yes	Yes
Observations	2,061	1,229	2,298	1,376
R^2	0.344	0.446	0.365	0.455

*p<0.05; **p<0.01; ***p<0.001

Note: In columns 1 and 2, I restrict the analysis to respondents who provided complete answers to the question regarding their proximity to any political party. These columns focus on the intensive margin, excluding individuals who declined to respond to this question. In columns 3 and 4, I extend the analysis to the extensive margin, assuming that individuals with no distinct opinion regarding their party closeness do not perceive a strong affiliation with the APC. Cluster-robust standard errors, clustered at the section level, are presented in parentheses.

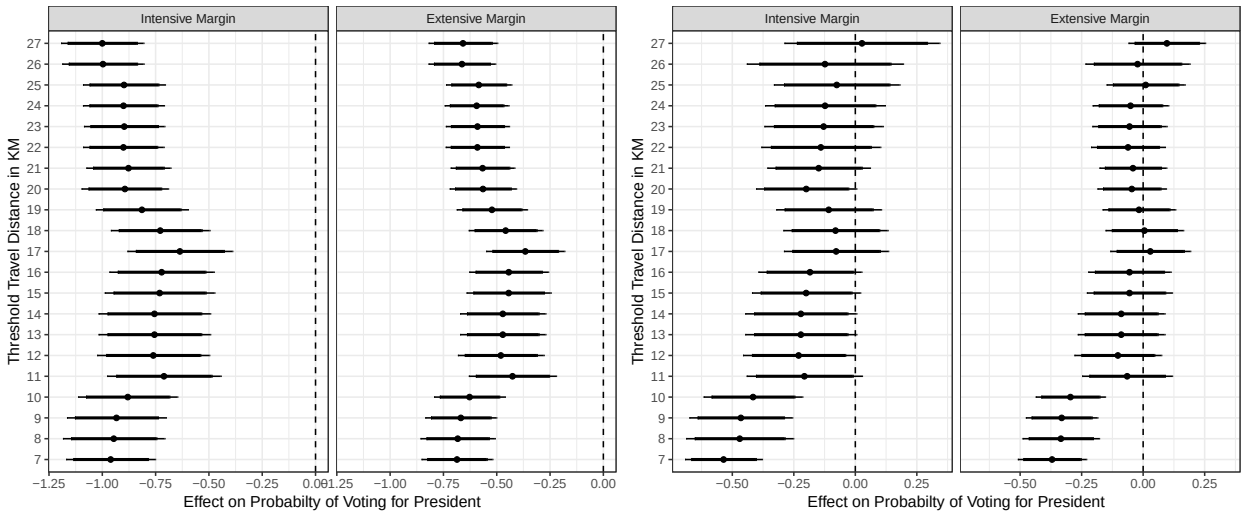
Table E.2: Effect of CCCs on President Support with Treatment at Chiefdom-Level

	Voting for President			
	Intensive Margin		Extensive Margin	
	All SL	Pro-APC	All SL	Pro-APC
	(1)	(2)	(3)	(4)
Round 6	0.201	−0.343**	0.088	−0.277**
	(0.115)	(0.115)	(0.084)	(0.080)
Treated Chiefdom X Round 6	−0.787***	−0.255	−0.615***	−0.253*
	(0.145)	(0.146)	(0.110)	(0.108)
Age	−0.001	−0.002	0.005	0.007
	(0.005)	(0.007)	(0.004)	(0.004)
Age squared	0.00001	−0.00000	−0.0001	−0.0001
	(0.0001)	(0.0001)	(0.00004)	(0.00004)
Male	0.036	0.059*	0.047*	0.051
	(0.022)	(0.029)	(0.020)	(0.028)
Urban	−0.039	−0.097	−0.044	−0.078
	(0.088)	(0.087)	(0.084)	(0.055)
Co-ethnic President	0.029	0.055	0.044	0.103**
	(0.047)	(0.044)	(0.039)	(0.033)
Muslim	0.011	−0.005	−0.021	−0.062
	(0.039)	(0.038)	(0.033)	(0.035)
Education	−0.026	−0.017	−0.021	−0.019
	(0.020)	(0.022)	(0.015)	(0.017)
Time to District Capital	0.005*	0.003	0.002	0.002
	(0.002)	(0.002)	(0.002)	(0.002)
Time to Major Town	0.003	−0.001	0.005	0.0004
	(0.003)	(0.002)	(0.003)	(0.001)
Log Ebola Cases X Round 6	0.013	0.059	−0.010	0.024
	(0.029)	(0.032)	(0.022)	(0.020)
Chiefdom FE	Yes	Yes	Yes	Yes
CCC FE	Yes	Yes	Yes	Yes
Observations	1,511	898	2,299	1,376
R^2	0.322	0.312	0.248	0.282

*p<0.05; **p<0.01; ***p<0.001

Note: Cluster-robust standard errors are clustered at the chiefdom level. The *Treated Chiefdom* variable is coded as 1 if the chiefdom hosts at least 1 CCC.

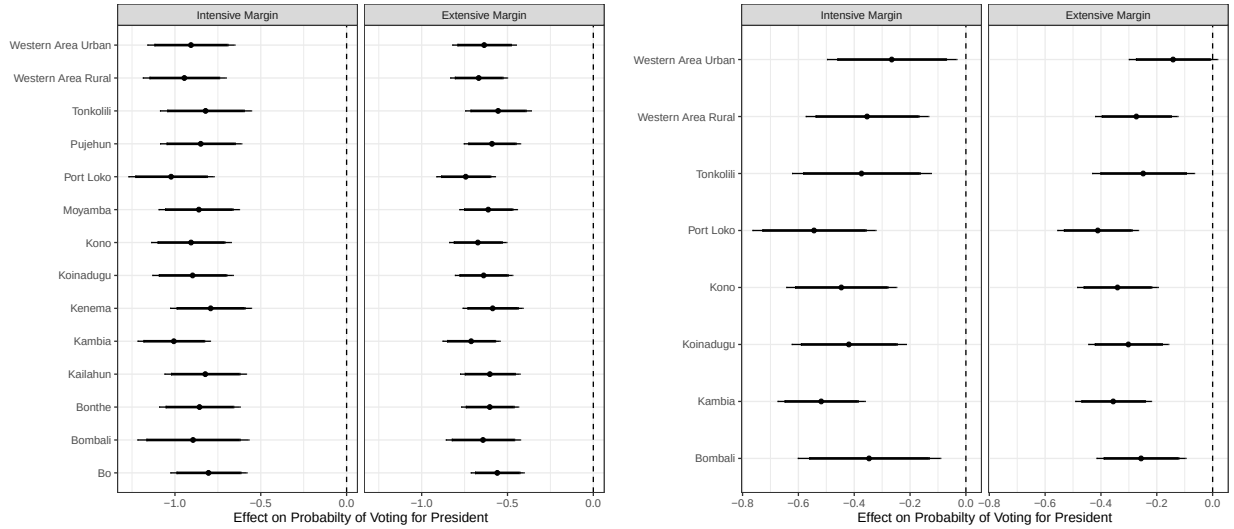
Figure E.1: Effect of CCCs across different Thresholds



(a) All SL Sample (b) Only Pro-APC Sample

Note: Figures depict coefficients with 95% and 90% confidence intervals. Standard errors are clustered at the section-level. In this analysis, I incrementally altered the distance threshold at which an enumeration area is considered treated. The results range from 7km to 27km. In other words, at the 27km threshold, enumeration areas that are within 27km of travel distance to a CCC are assigned to the treated group..

Figure E.2: Effect of CCCs Leave-one-Out Analysis Districts



(a) All SL Sample

Note: Figures depict coefficients with 95% and 90% confidence intervals. Standard errors are clustered at the section-level. In the leave-one-out analysis, I excluded one district at the time from the analysis. The Y-axis depicts the district that has been excluded in the analysis. .

Table E.3: Sub-Sample Analysis

	Vote President (Intesive)			Vote President (Extensive)		
	High Educ	Low Educ	Urban	High Educ	Low Educ	Urban
	(1)	(2)	(3)	(4)	(5)	(6)
Treated	0.474**	0.620***	0.790***	0.380**	0.469***	0.598***
	(0.156)	(0.156)	(0.204)	(0.117)	(0.091)	(0.100)
Round 6	0.097	0.050	0.112	0.028	−0.038	0.028
	(0.089)	(0.102)	(0.093)	(0.063)	(0.069)	(0.058)
Treated X Round 6	−0.833***	−0.817***	−1.030***	−0.581***	−0.619***	−0.741***
	(0.130)	(0.163)	(0.132)	(0.093)	(0.107)	(0.092)
Age	0.0001	−0.0001	−0.002	0.006	0.005	0.002
	(0.009)	(0.008)	(0.007)	(0.006)	(0.005)	(0.005)
Age squared	−0.00001	−0.00000	0.00002	−0.0001	−0.0001	−0.00002
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Male	0.001	0.057	0.052	0.029	0.060*	0.053*
	(0.041)	(0.031)	(0.033)	(0.032)	(0.026)	(0.026)
Urban	0.017	0.085		−0.013	0.016	
	(0.082)	(0.106)		(0.068)	(0.107)	
Co-ethnic President	0.079	−0.009	0.069	0.087	0.019	0.082
	(0.074)	(0.076)	(0.062)	(0.052)	(0.055)	(0.049)
Muslim	0.064	−0.012	0.077	0.026	−0.080*	0.027
	(0.047)	(0.042)	(0.049)	(0.040)	(0.039)	(0.044)
Education	0.023	0.031	0.006	−0.011	0.014	0.002
	(0.049)	(0.040)	(0.020)	(0.040)	(0.035)	(0.016)
Time to District Capital	0.005	0.004	0.001	0.002	0.002	−0.001
	(0.003)	(0.004)	(0.008)	(0.003)	(0.004)	(0.007)
Time to Major Town	0.002	0.004	−0.0004	0.005	0.005	−0.0001
	(0.003)	(0.003)	(0.010)	(0.003)	(0.004)	(0.009)
Log Ebola Cases X Round 6	0.017	0.106**	0.050	−0.019	0.050	0.008
	(0.045)	(0.040)	(0.038)	(0.030)	(0.028)	(0.019)
CCC FE	Yes	Yes	Yes	Yes	Yes	Yes
Chiefdom FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	702	809	742	1,068	1,230	1,209
R^2	0.358	0.383	0.336	0.268	0.298	0.242

*p<0.05; **p<0.01; ***p<0.001

Note: Standard errors are clustered at the section-level. Columns 1 and 4 only include individuals with higher levels of education. This refers to people with some primary schooling or higher. Columns 2 and 5 include respondents with lower levels of education. This refers to people with only informal schooling or no schooling. Columns 3 and 6 include respondents living in proximity to urban areas. These are people that live 20km from a town..

Table E.4: Sub-Sample Analysis (Pro-APC Districts)

	Vote President (Intesive)			Vote President (Extensive)		
	High Educ	Low Educ	Urban	High Educ	Low Educ	Urban
	(1)	(2)	(3)	(4)	(5)	(6)
Treated	0.289*	0.287**	0.501***	0.243*	0.202**	0.416***
	(0.125)	(0.095)	(0.148)	(0.102)	(0.068)	(0.077)
Round 6	−0.264**	−0.516***	−0.253***	−0.197**	−0.452***	−0.179***
	(0.085)	(0.074)	(0.073)	(0.064)	(0.049)	(0.046)
Treated X Round 6	−0.478***	−0.159	−0.640***	−0.351***	−0.181*	−0.483***
	(0.112)	(0.131)	(0.103)	(0.084)	(0.091)	(0.081)
Age	0.007	−0.007	−0.006	0.015	0.004	0.003
	(0.012)	(0.010)	(0.010)	(0.007)	(0.006)	(0.006)
Age squared	−0.0001	0.0001	0.0001	−0.0002*	−0.0001	−0.00003
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Male	−0.005	0.099*	0.083	0.028	0.064	0.058
	(0.054)	(0.045)	(0.046)	(0.042)	(0.039)	(0.035)
Urban	−0.039	−0.045		−0.068	−0.045	
	(0.119)	(0.138)		(0.077)	(0.082)	
Co-ethnic President	0.071	0.045	0.043	0.113*	0.096	0.098
	(0.078)	(0.071)	(0.061)	(0.057)	(0.049)	(0.053)
Muslim	0.055	−0.032	0.060	−0.013	−0.124*	−0.019
	(0.055)	(0.052)	(0.058)	(0.046)	(0.051)	(0.053)
Education	−0.013	0.066	0.019	−0.061	−0.004	0.004
	(0.066)	(0.059)	(0.023)	(0.052)	(0.046)	(0.020)
Time to District Capital	0.002	0.003	−0.003	−0.003	0.003	−0.002
	(0.004)	(0.002)	(0.005)	(0.003)	(0.003)	(0.004)
Time to Major Town	−0.003	0.003	−0.002	0.003	0.002	−0.005
	(0.003)	(0.002)	(0.011)	(0.003)	(0.002)	(0.007)
Log Ebola Cases X Round 6	0.043	0.159***	0.041	−0.001	0.098***	0.0004
	(0.034)	(0.028)	(0.036)	(0.029)	(0.024)	(0.017)
CCC FE	Yes	Yes	Yes	Yes	Yes	Yes
Chiefdom FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	437	461	448	665	711	739
R^2	0.305	0.470	0.287	0.274	0.392	0.227

*p<0.05; **p<0.01; ***p<0.001

Note: Standard errors are clustered at the section-level. Columns 1 and 4 only include individuals with higher levels of education. This refers to people with some primary schooling or higher. Columns 2 and 5 include respondents with lower levels of education. This refers to people with only informal schooling or no schooling. Columns 3 and 6 include respondents living in proximity to urban areas. These are people that live 20km from a town..