Mining, Ethnic Distance to Power and Institutional Trust[†]

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Abstract

This paper investigates the relationship between mining activities, institutional mistrust, and the role of ethnic distance to power in Africa. To do so, we combine individual-level survey data from Afrobarometer rounds 4 to 7, covering 170,000 respondents across 37 countries, with data from the Political Leaders' Affiliation Database (PLAD) and the FERDI Minex Consulting database. We find that mining operations and closures reduce citizens' trust in the president but not in the local government. We further examine the role of ethnic distance to power and find that the negative effects of mining are weaker when citizens are closer to political power. In other words, ethnic proximity to those in power reduces the erosion of trust in the president caused by mining activities. Mineral-rich African countries should therefore carefully manage their mineral resources throughout all stages, from operation to closure. Mining activities carry significant environmental costs, and poor management during mine closures can substantially undermine public trust in authorities.

Keywords: JEL codes: D72; L72; O13; P28; Q32
Natural resources, Mining, Trust, Institutions, Corruption, Africa

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1. Introduction

Trust in public institutions is crucial for state capacity and development (Levi and Stoker, 2000; Aghion et al., 2010; Acemoglu et al., 2020). When citizens believe that governments act fairly and effectively, they are more willing to comply with regulations, contribute to the tax base, and support public policies, thereby lowering enforcement costs and expanding the state's ability to provide public goods (Besley and Persson, 2013; Knack and Keefer, 1997; Warren, 2018). Yet institutional mistrust remains pervasive across many African countries, where governments face persistent challenges of legitimacy, political fragmentation, and weak governance (Bratton and Gyimah-Boadi, 2016). Understanding how resource extraction and political distance to power shape confidence in political institutions is therefore essential for managing natural resources across the continent.

This paper studies whether and how mining activities affect citizens' trust in political institutions in Africa, and how these effects depend on ethnic proximity to political power. The relationship between natural resource extraction and institutional mistrust is theoretically ambiguous. On the one hand, mining generates government revenues that can finance public services and strengthen citizen–state relations. On the other hand, extractive industries often create opportunities for corruption (Knutsen et al., 2017), intensify competition over rents (Rigterink et al., 2025), conflicts (Berman et al., 2017), degrade the environment (Girard et al., 2025), and heighten political exclusion, each of which may undermine confidence in government. Ethnicity further shapes these dynamics: in many African countries, political power is distributed unevenly across groups, and ethnic ties influence perceptions of fairness, access to state resources, and the legitimacy of political leaders. Whether mining erodes trust uniformly or disproportionately among politically marginalized groups remains an open empirical question.

A significant body of the literature on the resource curse documents the adverse effects it can have at the local level (Borge et al., 2015; Cust and Poelhekke, 2015; Knutsen et al., 2017). This literature provides several potential mechanisms through which mining activities can affect trust in the institutions. First, mining activities are often associated with corruption and rent-seeking Knutsen et al. (2017). The significant rents produced by mining activities often foster corruption, patronage, and rent-seeking behavior among public officials and political elites. Such practices undermine citizens' confidence in institutions by creating perceptions of unfairness, injustice, and abuse of power (Ross, 2015). Second, mining regions are frequently sites of violent conflict (Berman et al., 2017), either due to competition over resource control or dissatisfaction with resource allocation. Persistent violence undermines the state's legitimacy, signaling institutional incapacity to provide security and basic public services (Konte and Vincent, 2021). Berman et al. (2017) using geographic location data on mining and conflict events across Africa from 1997 to 2010, argue that the historical rise in mineral prices may explain a quarter of the violence across African countries over the period. Third, mining activities are environmentally costly. They often lead to environmental damage, land expropriation, and health hazards. Institutions perceived as unwilling or unable to protect citizens from such harms lose legitimacy, weakening public trust (Aragón and Rud, 2013; Conde and Le Billon, 2017). Finally, mining activities exacerbate ethnic identification as opposed to national identification in Africa (Berman et al., 2023).

Our paper contributes to three strands of literature. First, we add to work on the local political and institutional consequences of natural resource extraction in Africa, which documents effects on corruption, conflict, and salience of ethnicity but provides limited evidence on institutional trust (Knutsen et al., 2017; Berman et al., 2017, 2023). Second, we connect this literature to research on trust and development, which highlights the importance of institutional legitimacy for economic performance but has paid less attention to resource-driven shocks (Dearmon and Grier, 2009; Nunn and Wantchekon, 2011; Algan and Cahuc, 2014; Levi and Stoker, 2000; Aghion et al., 2010). Third,

we bridge the resource curse and ethnicity literatures by examining how ethnic distance to political power conditions the political consequences of mining activities in Africa. Prior studies analyze the mining–institution link and the mining–ethnicity link separately; we show that these dimensions interact and create synergistic effects. This consideration is particularly important given that the relationship between mining and ethnic identification is stronger during elections and for politically excluded groups (Berman et al., 2023).

Our empirical analysis combines nearly 170,000 individual responses from Afrobarometer surveys across 37 African countries with detailed data on mine discovery, production, and closure from the FERDI Minex Consulting database, as well as political–ethnic affiliation information from the Political Leaders' Affiliation Database (PLAD). We distinguish between different stages of the mining lifecycle: discovery, production, and closure. To address concerns that mining occurs in areas already on different institutional trajectories, we instrument mining activity using geological data from Onegeology that predict mineral deposits but are orthogonal to institutional conditions.

We document three main findings. First, mining discovery increase trust in political institutions. However, the production and the closure reduce trust in the president. Second, these negative effects are not uniform: they are significantly weaker for individuals who are ethnically closer to political power. In other words, ethnic proximity buffers the erosion of institutional trust induced by mining, while politically distant groups experience larger declines. Third, distinguishing between discovery, production, and closure reveals that mine closures, in particular, generate substantial mistrust—consistent with the view that poorly managed environmental, economic, and social transition costs undermine state legitimacy. These results highlight the importance of political and ethnic context in understanding the institutional consequences of natural resource extraction. They also underscore the need for governments to manage extractive industries not only during periods of operation but also during mine closure and transition, when the potential for institutional erosion is especially large.

The remaining of the paper is organized as follows. Section 2 review the literature on the local effects of mining activities. Section 3 presents the data and their sources. Section 4 presents our empirical strategy. Section 5 discusses the findings. In section 6, we undertake several robustness tests to assess the strength of our results. Section 7 concludes.

2. Literature review

The literature on the local effects of mining activities is growing fast thanks to the increasing availability of georeferenced data. This literature provides evidence that mining activities can have contemporary and even persistent local effects in the long run. The studies cover the economic (Bazillier and Girard, 2020; Konte and Vincent, 2021), social (Berman et al., 2017), environmental (Worlanyo and Jiangfeng, 2021; Girard et al., 2025), institutional and political (Mavisakalyan and Minasyan, 2025) consequences of mining activities. Yet, as in the broader resource-curse literature, the evidence is mixed and context-specific. The first strand of the literature is related to the economic and social impact of mining activities. Aragón and Rud (2013) investigate whether and how the expansion of a large gold mine, the Yanacocha mine in Northern Peru, affects the living standards of surrounding local communities using annual household data from 1997 to 2006. They find a positive effect of the mine's demand of local inputs on real income supporting backward linkages between mining and local economy. The study by Loayza and Rigolini (2016) in Peru using the district-level poverty map find that although inequality increases within mining districts, there is an increase in consumption and a decrease in poverty. Similarly, Von der Goltz and Barnwal (2019) using around 800 mines in 44 developing countries show that mining communities experience substantial gains in asset wealth, around 0.3 standard deviations, but at the cost of their health.

They find that anemia rises among women and stunting increases among young children. Likewise, Mamo et al. (2019) based on a panel of 3,635 districts in 42 Sub-Saharan African countries over 1992–2012, estimate how mining affects local living standards and public service provision. They distinguish between the intensive margin (increases in production at existing mines) and the extensive margin (new discoveries and new production). Their results show that while production growth in existing mining districts is correlated with higher night-light intensities, the largest positive effects on living standards are concentrated in districts experiencing new mining activity (the extensive margin). Coulibaly et al. (2024) relying on detailed household panel data from Mali find that gold price booms increase household expenditure, reduce poverty, the size of the effect being higher for artisanal mining compared to industrial mining.

By contrast, Bazillier and Girard (2020) using four waves of nationally representative household surveys (1998–2014) in Burkina Faso study the effect of gold mining on household consumption, education and health. By exploiting spatial exposure to mining with temporal variation in the world gold price they find that industrial mines has no measurable impact on neighboring households' consumption, despite substantial increases in national gold production. Artisanal mines, however, generate significant local economic gains: a 1% increase in the gold price raises consumption by about 0.12% among households located near artisanal mines, with no detectable adverse effects on health or education. Mejía (2020)'s study in Colombia provides more nuanced results on education. They find that mining increases primary school enrollment and reduces dropout rates. However, mining decreases college enrollment, particularly in academic degrees and STEM fields and standardized test scores. The mechanisms at play are that child labor is overall unaffected, but young adults between 19 and 25 are more likely to work in the mining sector. Kotsadam and Tolonen (2016) study the effect of large-scale industrial mining on structural transformation and labor across gender. They specifically investigate how mining affects local labor market outcomes for women and men using geocoded locations of 874 industrial mines with Demographic and Health Surveys (DHS) covering more than 500,000 women and nearly 300,000 male partners across 29 Sub-Saharan African countries. Using a geographic difference-in-differences design to compare households located within 20 km of a mine to those farther away, before and after production starts, they find that industrial mine openings induce significant local structural change, but with mixed consequences, especially for women. Women reduce self-employment in agriculture by roughly 25%, while gaining jobs in services, with service-sector employment increasing by 50% from the baseline. However, because agriculture is a much larger employer, overall female employment declines by about 8%. Men are more likely to work directly in mining, while women see no increase in direct mining employment. A similar study by Wegenast et al. (2019) focuses on labor market effects of Chinese mining investments in Africa. They find that people living close to Chinese mining areas are less likely to report being employed compared to individuals living near non-Chinese mines.

The economic and social consequences of mining activities are persistent over the long run. Dell (2010) investigates the long-term economic consequences of Peru's mita, a colonial forced labor system that required indigenous communities to send male workers to distant silver mines. Using a regression discontinuity design that compares areas just inside and just outside the historical mita boundary, the paper finds that former mita districts have significantly lower household consumption levels and worse road infrastructure today. Specifically, per capita consumption is about 25% lower in former mita areas, a gap that persists despite similar pre-treatment characteristics. The author demonstrates that these differences are not driven by geographic features or historical ethnic compositions, and she links the persistent underdevelopment to lower public goods provision, particularly in road networks. Ahlerup et al. (2020) using Afrobarometer and DHS data also find that respondents living within gold mine district when they were adolescent have significantly lower educational attainment. By contrast, de Carvalho (2016) find that Diamond extraction in colonial

Brazil has long-run positive impacts on adult literacy and light density today.

The second strand of the literature deals with the environmental consequences of mining activities, whose findings are less controversial regardless of the scale and the location. Girard et al. (2025) provide the first continent-wide causal evidence on the environmental impact of artisanal and small-scale gold mining in Africa. Using geological data to map gold-suitable locations (18% of Africa's surface) and exploiting exogenous variation from international gold prices, the authors construct a novel proxy for ASGM intensity based on the interaction of gold price shocks and geological suitability. Their findings suggest that increases in the value of potential artisanal mines lead to significant deforestation: gold price shocks explain 8% of Africa-wide deforestation between 2001-2018, and 28% in gold-suitable zones. Vashold et al. (2025) assess the impacts of mining-induced water pollution on agriculture and vegetation in Africa by exploiting directed river networks in a discontinuity design. They find that mining reduces peak vegetation downstream by 1.3–1.5%. Moreover, over 74,000 km^2 of croplands are impacted. The effects are even stronger in gold mining areas and fertile agricultural regions. Several case studies support their finding. Caballero Espejo et al. (2018) quantify Artisanal Small-scale Gold Mines (ASGM) induced deforestation in the period 1984–2017 in the southern Peruvian Amazon. They find that ASGM caused nearly 100,000 ha of deforestation in the 34-year period, an increase of 21% compared to previous estimates. Barenblitt et al. (2021) combine machine learning and change detection algorithms to calculate different land cover conversions and the timing of conversion in southwestern Ghana. They find that approximately 47,000 ha (2218 ha) of vegetation were converted to mining at an average rate of approximately 2600 ha per year.[1] However, despite the risk of exposure to harmful pollution, Benshaul-Tolonen et al. (2019) argue that local industrial large-scale gold-mining development decreases child mortality rate by more than 50% in Africa since 1970. These economic, social, and environmental consequences, when occurring in a context of weak institutions, also carry significant political implications.

The third strand of the literature is related to the institutional and political consequences of mining activities. This part of the literature shows that mining activities weaken institutions and erode citizen trust and their national identification. Berman et al. (2017) combine geocoded data on the extraction of 14 minerals to conflict events across Africa between 1997 and 2010, using a spatial grid of 0.5° x 0.5° to study the effect of mining activities on conflicts. Their estimates suggest that the commodity boom during this period accounts for up to 25% of the average level of conflict across African countries. Rigterink et al. (2025) provide more nuanced evidence by using qualitative case studies from the Democratic Republic of Congo and Zimbabwe, along with a large-scale quantitative analysis and machine learning model to estimate artisanal mining feasibility across Africa based on geological characteristics. They find that the effect of international commodity price shocks on violent conflict is over three times stronger in areas where industrial mining overlaps with conditions favorable to artisanal mining, compared to areas where artisanal mining is not feasible. 31% to 55% of mining-related violence can be attributed to direct competition between artisanal and industrial actors, rather than conventional territorial or state-centered conflict. These finding are supported by Amengual (2018) who argues that to gain community backing and minimize resistance, firms adopt different strategies: some broaden access to vital public goods, services, and economic opportunities, while others provide selective, clientelist benefits to a limited few. By analyzing the practices of multinational mining companies in Bolivia, using qualitative interviews and household survey data, Amengual (2018) finds that local political structures and organizational dynamics shape firms' incentives, leading them to choose between targeted or more inclusive benefit distribution.

[1] See Worlanyo and Jiangfeng (2021) for a survey of the literature.

Konte and Vincent (2021) show that the proximity to mining operations affects citizens' perceptions of public service delivery and their optimism about future living standards in Africa. Linking over 130,000 Afrobarometer respondents (2005–2015) to the nearest mines using geo-coded data from SNL Metals & Mining, they find that individuals living near active mines tend to be unsatisfied with the government performance in service delivery such as health, poverty alleviation, and job creation. The authors argue that the effect is channeled through corruption, bribery and low trust in local authorities. In the same vein, Knutsen et al. (2017) combine data from 92,762 Afrobarometer survey respondents with geospatial data on 496 industrial mines across Africa to study whether the presence of industrial mining operations leads to increased local corruption. They find that local corruption rises significantly after the start of mining activity.

This paper is closely related to Miller (2015), Mavisakalyan and Minasyan (2025), Berman et al. (2023). We depart from the previous literature in four ways. First, Miller (2015) studies the effect of natural resources on political trust focusing on four democratic African countries: Botswana, Ghana, Kenya, and South Africa. Their hypothesis is that natural resources extraction fosters trust in political institutions when mining activities lead to an increase in revenue. Their data cover only the fifth round of Afrobarometer surveys and their measure of natural resource extraction does not consider the different stages of the mining life cycle (discovery, operation and closure). They find a positive correlation between "resource extraction" and political trust which is an additive index of trust in political leaders. Second, Mavisakalyan and Minasyan (2025) merge georeferenced individual survey data for 28 post-communist countries in Central and Eastern Europe and the former Soviet Union with spatial information on mine locations to study the effect of mining activities on trust in the institutions. They find a consistent negative relationship between mining activity and trust in local authorities. Both perception and experiences of corruption are the main mechanism. Moreover, environmental degradation is also identified as a contributing factor to declining trust in some cases. Our study differentiates from Mavisakalyan and Minasyan (2025) by focusing on African countries. Also, we do not only focus on active vs. inactive mines, our empirical strategy allows us to estimate the effect on mining discovery, mining operations and mining closure. Berman et al. (2023) find that ethnic identity is stronger when mining activities intensify in a group's historical homeland. The effect is observed both within countries and across borders, showing ethnic boundaries matter more than national ones. They show that political factors are at play. In fact, the effect of mining on ethnic identification is magnified during elections, for politically excluded or powerless groups, poorer regions, groups with strong baseline identity feelings and areas with a history of conflict. Third, we combine political distance to power and mining in our investigation of the relationship between mining and political trust. Fourth, our identification strategy exploits subsoil geological characteristics to provide more robust estimates of the relationship between mining and trust.

3. Data

3.1. Institutional trust

Our data on institutional trust come from Afrobarometer dataset. In the Afrobarometer questionnaire, the following questions related to institutional trust are asked. How much do you trust the president? The parliament/ national assembly? The electoral commission? your elected local government? The ruling party? The opposition political parties? The courts of law? The traditional leaders? The responses are coded as follows: not at all (0), just a little (1), somewhat (2) and a lot (3). We use the trust in the president as our dependent variable. To enrich our analyses, we use the other set of trust in the institutions. The data cover round 4 to round 7 of Afrobarometer survey and 37 African countries.

Afrobarometer dataset use nationally representative probability samples to ensure all adult citizens (18+) have an equal and known chance to be selected. Sampling is random at every stage and proportional to the population size whenever possible. Institutionalized individuals such as students in dormitories, patients in hospitals, and persons in prisons or nursing homes are excluded. The sample sizes typically include 1,200 or 2,400 individuals, with margins of error of ±2.8 and ±2.0 percentage points, respectively, at a 95% confidence level. The sampling proceeds through four to five stages, ending in the random selection of individual respondents, with gender alternated at the household level.[2]

3.2. Mining data

The data on mining are taken from FERDI Minex Consulting Database (Consulting Dataset, 2019). Minex Consulting dataset compiled georeferenced information on mining discovery by size (moderate, major, giant, and super giant) and development status (advanced exploration, care and maintenance, development/construction, pre-feasibility/scoping, feasibility study, operating mines, undeveloped deposit and closed mines) and the type of minerals. 965 discoveries haves been recorded in Africa from 1950 to 2019. Our study cover 328 mines in 37 African countries.

3.3. Geological data

We obtain geological information from the OneGeology initiative, an international collaborative project led by national geological surveys and coordinated by the British Geological Survey (BGS) and the Commission for the Geological Map of the World (CGMW). OneGeology provides a harmonized and interoperable digital geological map of the world based on national geological datasets, standardized according to the GeoSciML data model. The data describe the spatial distribution of geological units, their lithological composition, stratigraphic age, and structural features such as faults and shear zones. Each polygon corresponds to a distinct geologic formation or lithological unit, typically mapped at scales between 1:1 million and 1:5 million, depending on country coverage. We compute the area of each characteristic (sedimentary, volcanic, plutonic and metamorphic) and their share of the total area at district level.

3.4. Measuring Ethnic Distance to Power

To measure ethnic distance to power, we resort to The Political Leaders' Affiliation Database (PLAD) (Bomprezzi et al., 2024). The PLAD database provides georeferenced information on leaders' places of birth and their characteristics including education and ethnicity worldwide. The dataset contains the date each leader comes to power and the date he/she leaves office. By exploiting this information, we transform the data into a country-year panel dataset. For the year a country has more than one leader, the leader who spent more months in office is considered to be the leader of the country this year.

We use two measures of distance to power. Our first measure is dummy variable taking the value of 1 if the leader district of birth is the same as the respondent and 0 otherwise. The idea is that leaders may favor their region of origin or people appreciation of the leader may depend on the fact that they come from the same region regardless of their ethnicity. The second measure uses ethnic mix in the country to compute an ethnic distance to power. To illustrate our measure, we begin with a canonical example of a country with two ethnic groups: a majority group representing 80% of the population and a minority group comprising the remaining 20%. If the leader belongs to the majority group, individuals from that group are considered close to power. Conversely, if the

[2] https://www.afrobarometer.org/surveys-and-methods/sampling/

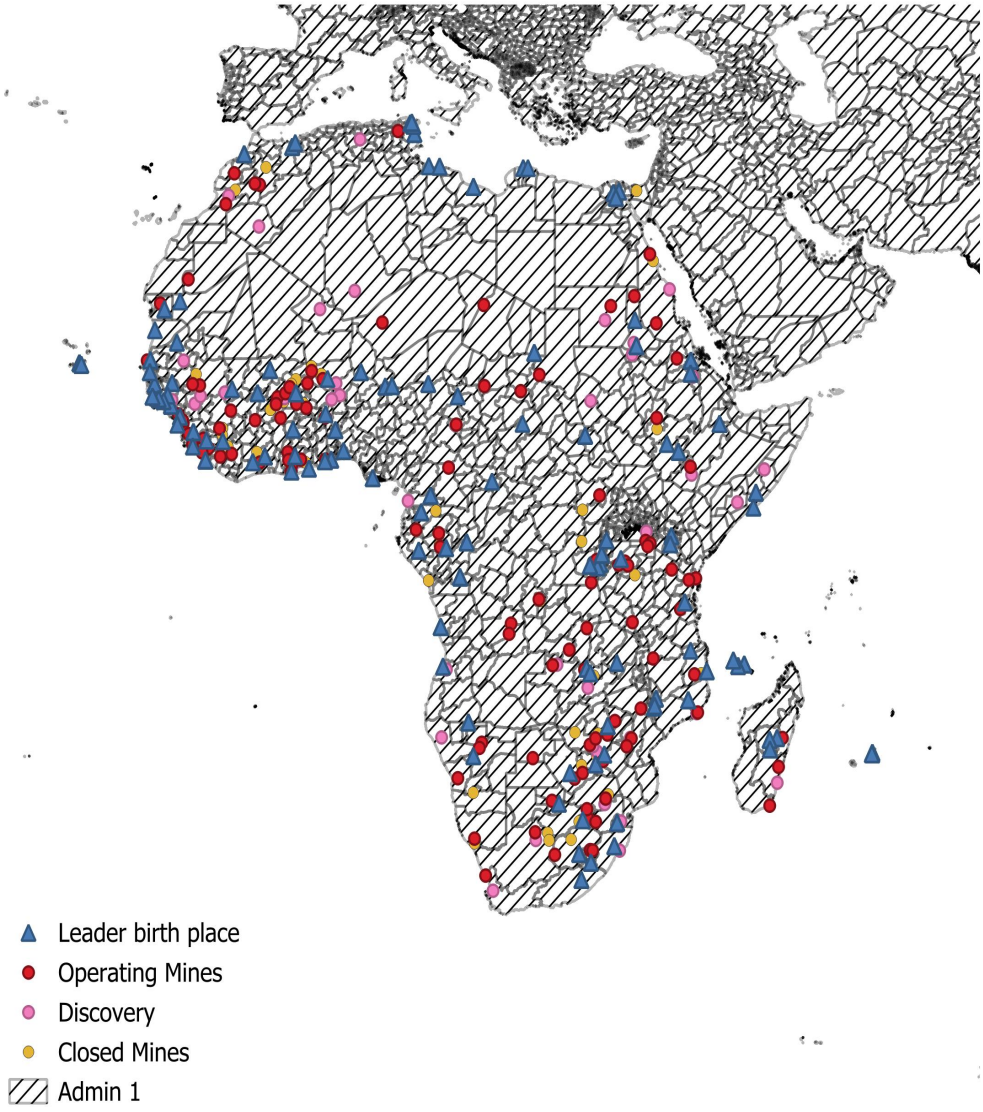

Figure 1: Mining and Leader Birth place

leader comes from the minority, members of the minority group are also closer to power—but not as close as the majority group would be under a majority leader. This is because a minority leader cannot rely solely on ethnic voting to win or retain office, while a majority leader can. As a result, a minority leader is more likely to adopt balanced policies rather than favoring their own ethnic group.

To formalize the general case, we denote the respondent as R, leader L, and their respective ethnic groups e_R, e_L. The share of ethnicity e in the country is given as s_e, where:

$$0 < s_e \leq 1, \quad \sum_e s_e = 1$$

The ethnic distance to power ($D_{R,L}$) is defined as:

$$D_{R,L} = \underbrace{(1 - \delta_{e_R,e_L})}_{\text{Ethnic difference penalty}} + \underbrace{(1 - s_{e_R})}_{\text{Ethnic group size penalty}} \tag{1}$$

where:

$$\delta_{e_R,e_L} = \begin{cases} 1 & \text{if } e_R = e_L, \text{leader and respondent have same ethnic group} \\ 0 & \text{otherwise} \end{cases}$$

We normalize distances between 0 and 1 by using this formula:

$$\text{Normalized } D_{R,L} = \frac{D_{R,L} - \min(D_{R,L})}{\max(D_{R,L}) - \min(D_{R,L})}$$

Our measure builds on previous attempts to capture ethnic distance to power. The first term of the ethnic power distance (Ethnic difference penalty) relies on Franck and Rainer (2012) and Burgess et al. (2015) among others. Franck and Rainer (2012) study the effect of ethnic favoritism on education and health in 18 African countries. They define co-ethnic leader variable that "measures for all the members of ethnic cluster e in survey s born in year t the share of years when they were aged 6 to 13 that coincided with the rule of a leader who belonged to their ethnic cluster." Similarly, Burgess et al. (2015) define co-ethnic district variable "that takes a value of one for districts where at least 50% of the population has the same ethnic affiliation as the serving president." The second term of our distance measure (the ethnic group size penalty) considers the ethnic mix in the country. the Posner (2004) emphasizes the relative sizes of ethnic groups and focuses primarily on fractionalization. Cederman et al. (2010) introduced the notion of ethnic power distribution and distance to power based on explicit political exclusion or inclusion. However, their "distance" typically focuses on political inclusion/exclusion without directly weighting by ethnic size. The novelty of this measure is that it explicitly combines two intuitive components simultaneously: ethnic difference to leader (used widely but often as a simple binary variable) and ethnic group size, explicitly captured as a penalty or reward based on relative demographic power.

3.5. Other control variables

The Afrobarometer data include individual characteristics such as gender, age, employment, education, household size and place of residence (rural or urban). It also includes questions that assess the respondent's appreciation of the economic conditions, the economic management, and its political and civic engagement.

Age: the age is the number of years the respondent has been living. We include the year and its square to account for potential nonlinear relationship. The psychology literature shows that older adults are more trusting than the younger, who are more cautious (Bailey and Leon, 2019).

Employment: Our employment variable is a dummy variable taking 1 if the respondent is employed and 0 otherwise. People's employment status may affect how they trust institutions.

Education: The education variable indicates the highest level of education of the respondent. The modalities are: no formal or informal schooling, primary schooling, secondary schooling, and post-secondary and above. The reference group is people with no formal or informal schooling so that the coefficient can be considered as the difference between the each level of education and the no formal or informal education. The level of education of the respondents can shape their institutional trust. Ugur-Cinar et al. (2020) find that the relationship between education and institutional trust is complex. Under well-functioning institutions where the society is perceived as fair and meritocratic, higher education often correlate with greater trust in institutions. However, in corrupt or unjust systems, educated individuals may become more skeptical, as they're better equipped to detect flaws.

Household size: the size of the household is the number of individuals living in the same household of the respondent. Household size may affect how the respondent perceive institutions.

Urbanization: people living in rural areas may have different views on institutions compared to those living in urban areas. The latter have more access to information, pay more taxes and expect more services from the government.

Economic conditions and management: we capture economic conditions with four questions that capture respondents' appreciation of its current economic conditions, the country current economic conditions and how well the government manage the economy and the jobs. Responds are asked to assess their own current living conditions, their country current economic situations, how well the government manage the economy and handle job creation. The responses are: range from very bad to very good. How the respondents perceive their own economic conditions, the economic conditions of their country and the management can affect their trust in the government.

Discussing politics: The respondents are asked how often do they discuss political matters with friends or family. The responses are coded 0 for "never", 1 for "occasionally" and 2 for "frequently." - Discussing frequently about politics can have both positive and negative impact on institutional trust. Frequent political discussion can foster awareness and critical thinking, leading to higher trust in institutions that are perceived as responsive. However, in contexts of political polarization or repression, it may reduce trust, especially if institutions are seen as corrupt or unaccountable.

Voting: This variable is the respondents own declarative information on their political participation. The respondents are asked whether they voted in the last national election. Citizens who vote often feel more connected to the democratic process and may trust institutions more. Conversely non-voting signals distrust: those who abstain may do so out of skepticism, signaling low institutional trust.

4. Empirical Strategy

Our empirical strategy follows previous studies on the local effects of mining activities (Mavisakalyan and Minasyan, 2025; Konte and Vincent, 2021; Von der Goltz and Barnwal, 2019; Kotsadam and Tolonen, 2016). We depart from the previous studies by considering discovery, operation and closure instead of "active" and "inactive" mines. To estimate the effect of mining activities and the synergistic effect of ethnic distance to power on institutional trust, we proceed in three steps. First, we estimate the effect of production by comparing the average trust levels of individuals living within the districts with discovered mines to those living within the districts with operating ones. Second we estimate the effect of mine closure by comparing the average trust levels of individuals living within the districts with operating mines to those living within the districts with closed ones.

Third, to estimate the total effect of mining activities, we add the two effects which is equal to the difference in the average institutional trust level between closed and discovered mines.

4.1. Baseline Model

Our baseline model is expressed as follows:

$$ITrust_i = \alpha_i + \beta\, Discovery_i + \gamma\, Operating_i + \lambda\, Closed_i + \mathbf{X}_i'\delta + r_{j(i)} + \phi_t + \varepsilon_i \tag{2}$$

where $ITrust_i$, the dependent variable, is trust in institutions for individual i (the unit of observation). The dependent variable takes the value of 0 for "not at all", 1 for "just a little", 2 for "somewhat" and 3 for "a lot'. Our variables of interest are Discovery, Operating and Closed. $Discovery_i$ denotes discovered mining deposit that is not in production, it takes the value of 1 if there is at least a discovered mine in the district and 0 otherwise. $Operating_i$ denotes a functioning mining under production and takes the value of 1 if there is at least one operating mine in the district and 0 otherwise. $Closed_i$ denotes closed mines after operations. It takes the value of 1 if a mines is closed in the district and 0 otherwise. β, γ and λ are our coefficients of interest. β estimates the effect of mining discovery on institutional trust. $(\gamma - \beta)$ is the effect of production on institutional trust. $(\lambda - \gamma)$ is the effect of mine closure. The net effect of mining activities is the sum of the effect of production and closure: $(\gamma - \beta) + (\lambda - \gamma)$ which is equal to $(\lambda - \beta)$. Our approach is similar to Mavisakalyan and Minasyan (2025) who use the difference between *active* and *inactive* mines to estimate the effect of mining on trust on local government. The reference group are individuals living in districts that never experience mining discovery, operation or closure. To assess the statistical significance of differences in coefficients between discovery and operating mines, closed and operating mines and closed and discovery we resort to the Wald F-test.

$\mathbf{X}_i'$ is a vector of control variables which include individual characteristics such as age, gender, education, employment, household size, the place of residence (urban/rural), the economic conditions and management such as the respondent own current economic conditions, his appreciation of the country current economic conditions and how the government manages jobs and the economy, civic and political engagement such as discussing politics and voting in the last election. $r_{j(i)}$ and ϕ_t are district and survey year fixed effects respectively. ϵ_i is the error term.

4.2. Augmented Model with Ethnic Distance Interactions

We now extend the baseline model to include interaction terms between the mining stages and the respondent's *Ethnic Distance to Power*, denoted $EDist_i$:

$$\begin{aligned} ITrust_i = {} & \alpha_i + \beta\, Discovery_i + \gamma\, Operating_i + \lambda\, Closed_i + \theta\, EDist_i \\ & + \beta_1(Discovery_i \times EDist_i) + \gamma_1(Operating_i \times EDist_i) + \lambda_1(Closed_i \times EDist_i) \\ & + \mathbf{X}_i'\delta + r_{j(i)} + \phi_t + \varepsilon_i \end{aligned} \tag{3}$$

4.3. Interpretation of Parameters

- β, γ, λ are respectively the effects of mine discovery, operation, and closure for individuals **closest to power** ($EDist = 0$). They are the baseline effects of each mining stage (Discovery, Operating, Closed) when ethnic distance is zero (i.e., respondents ethnically closest to power).
- θ is the effect of ethnic distance on institutional trust in **non-mining areas**. Baseline effect of ethnic distance (when no mining), the reference group.

- β_1, γ_1, λ_1: Interaction terms show how the effects of each mining stage vary with ethnic distance. **Key parameters** — they tell how much ethnic distance moderates the mining-trust relationship. They test the moderating effect of ethnic distance. A positive (negative) value means that being more ethnically distant reduces (increases) the negative trust effect of that mining stage. For example, if $\gamma_1 - \beta_1 < 0$, the **negative production effect** gets *worse* as ethnic distance increases (trust falls more among excluded groups). If $\gamma_1 - \beta_1 > 0$, the **negative production effect** is *weaker* among excluded groups (distance softens the loss of trust).

Thus, for individuals at different levels of $EDist_i$:

$$\begin{aligned} \text{Discovery effect} &= \beta + \beta_1 EDist_i, \\ \text{Operating effect} &= \gamma + \gamma_1 EDist_i, \\ \text{Closure effect} &= \lambda + \lambda_1 EDist_i. \end{aligned}$$

4.4. Difference-in-Differences effects

Using this augmented model, we define three effects conditional on ethnic distance $e = EDist_i$:

(i) Production Effect

$$\text{Production}(e) = (\gamma - \beta) + (\gamma_1 - \beta_1)e \tag{4}$$

This measures the effect of moving from discovery to operation, conditional on ethnic distance.

- $(\gamma - \beta)$: denotes the baseline difference for individuals ethnically close to power.
- $(\gamma_1 - \beta_1)e$: Additional differential effect as ethnic distance increases.
- Interpretation: The marginal change in institutional trust when a mine becomes operational, relative to discovery, depends on ethnic distance. If $(\gamma_1 - \beta_1) < 0$, ethnic distance amplifies the negative production effect.

(ii) Closure Effect

$$\text{Closure}(e) = (\lambda - \gamma) + (\lambda_1 - \gamma_1)e \tag{5}$$

This measures the effect of moving from operation to closure stage.

- Measures how trust changes after a mine closes, relative to its operation stage.
- Interpretation: $(\lambda_1 - \gamma_1) > 0$, ethnic distance mitigates the drop in trust associated with closure.

(iii) Total (Lifecycle) Effect

$$\text{Total}(e) = (\lambda - \beta) + (\lambda_1 - \beta_1)e \tag{6}$$

Effect of moving from discovery to closure stage (the full mining life cycle).

- $(\lambda - \beta)$: Net effect for those closest to power.
- $(\lambda_1 - \beta_1)e$: How that total effect changes with ethnic distance.

- Interpretation: If $(\lambda_1 - \beta_1) > 0$, then citizens more distant from power experience a smaller overall erosion of institutional trust from mine activity.

At specific levels of e:

$$\begin{aligned} \text{At } e = 0: &\quad \text{Effects for co-ethnic individuals (closest to power)} \\ \text{At } e = 1: &\quad \text{Effects for individuals most distant from power} \end{aligned}$$

4.5. Marginal Effect of Ethnic Distance

Differentiating Equation (2) with respect to $EDist_i$, we obtain the marginal effect of ethnic distance on institutional trust:

$$\frac{\partial ITrust_i}{\partial EDist_i} = \theta + \beta_1 Discovery_i + \gamma_1 Operating_i + \lambda_1 Closed_i \tag{7}$$

Interpretation:

- In non-mining areas ($Discovery = Operating = Closed = 0$), the marginal effect equals θ.
- In mining districts, the marginal effect depends on the mining stage via the interaction terms. For example, in a district with an operating mine: marginal effect is $\theta + \gamma_1$.

4.6. Meaning of $e = 0$ and $e = 1$

The Ethnic Distance to Power variable — a continuous measure normalized between 0 and 1. What do the extreme values mean?

- $e = 0$: The respondent is ethnically **closest to power**, i.e., belongs to the same ethnic group as the leader ("co-ethnic" or ethnic insider).
- $e = 1$: The respondent is ethnically **most distant from power**, i.e., belongs to an excluded or minority group ("ethnic outsider" or maximally excluded).
- $0 < e < 1$: Intermediate levels of ethnic distance, reflecting partial exclusion. The respondent is partially distant — not co-ethnic, but also not among the most excluded (e.g., mid-sized ethnic group, moderately distant).

Therefore, given that the production effect depends on e:

$$\begin{aligned} &\text{Production}(0) = (\gamma - \beta) \quad \text{(effect for insiders)} \\ &\qquad\qquad \text{Effect of mining production for those ethnically close to power.} \\ &\text{Production}(1) = (\gamma - \beta) + (\gamma_1 - \beta_1) \quad \text{(effect for outsiders)} \\ &\qquad\qquad \text{Effect of mining production for those farthest from power.} \end{aligned}$$

Likewise, for closure and total effects as defined previously. The difference between the two $(\gamma_1 - \beta_1)$ gives how ethnic distance moderates the effect of mining on trust.

Why evaluate effects at $e = 0$ and $e = 1$? Because those two points capture the two extremes of ethnic proximity — and because the effect of mining is *linear in ethnic distance* (thanks to the interaction term).

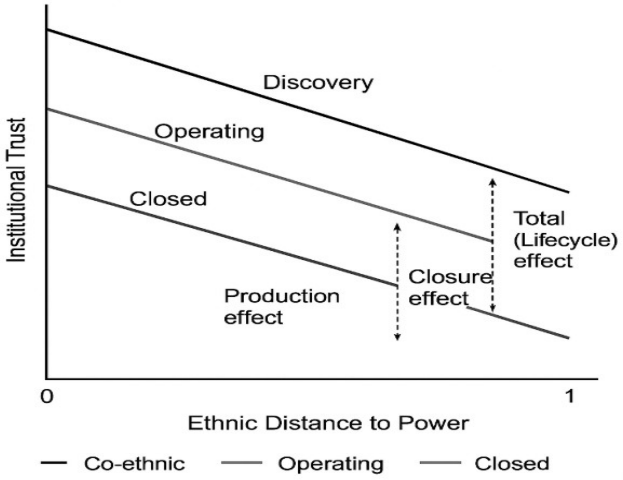

Figure 2: Moderating Effect of Ethnic Distance on the Mining–Trust Relationship

4.7. Diagram: Moderating Effect of Ethnic Distance on the Mining–Trust Relationship

Figure 2 illustrates how institutional trust varies with ethnic distance and mining stage.

Interpretation:

- The x-axis represents ethnic distance (e), normalized from 0 (co-ethnic) to 1 (most distant).
- The y-axis shows institutional trust.
- Three downward-sloping lines correspond to the predicted trust levels at each mining stage:
  - **Discovery:** highest line — baseline level of trust.
    At the discovery stage, the mine has been found but is not yet operating. The economic shock is small: minimal disruption, limited inequality, but some hope for future local development. People close to power ($e = 0$) have relatively high trust, expecting benefits from the project. As ethnic distance increases (e $\rightarrow$ 1), people farther from power have lower trust, either because they: i) expect exclusion from future mining benefits, or ii) distrust the state to manage resources fairly. Hence, the Discovery line is downward-sloping.
  - **Operating:** lower line — reduced trust during mining production.
    When a mine becomes operational, economic rents start flowing. These rents are often captured by politically connected or co-ethnic elites. If resource governance is biased, ethnic outsiders see mining as enriching others, not them. Thus: i) for co-ethnics ($e = 0$): moderate trust — they benefit or expect to benefit. ii) For outsiders ($e = 1$): much lower trust — they see mining as proof of exclusion or exploitation. Hence, Operating line also slopes downward, and it lies below the Discovery line because the operation phase typically generates inequality and social tension.
  - **Closed:** lowest line — further erosion of trust after mine closure.
    When the mine closes, local economic activity falls, jobs disappear, and environmental degradation remains. Trust falls overall because people feel abandoned by both companies and the government. i) Co-ethnics ($e = 0$) might retain slightly more trust, hoping the state will intervene. ii) Distant groups ($e = 1$) lose even more trust, perceiving total

neglect or betrayal. So the Closed line is both lower (trust loss across all groups) and downward-sloping (ethnic distance still amplifies mistrust).

The downward slope of each line reflects the estimated negative relationship between ethnic distance and trust: People who are ethnically distant from the leader tend to trust institutions less. So for each mining stage (Discovery, Operating, Closed), institutional trust declines linearly with ethnic distance at a rate given by the interaction coefficient (β_1, γ_1, or λ_1). Moreover, differences in intercepts (β, λ, γ) reflect the average trust at each stage (Discovery > Operating > Closed). Differences in slopes ($\beta_1, \lambda_1, \gamma_1$) determine whether ethnic distance amplifies or dampens the mining-related decline in trust. So visually: i) Discovery line is highest (most trust), ii) Operating line is lower, and iii) Closed line is the lowest.

- The vertical distance between the lines
  - Discovery → Operating: **Production effect** (the gap between discovery and operation). Conceptually, in the model, the production effect is the difference in trust between operating and discovery areas: $(\gamma - \beta) + (\gamma_1 - \beta_1)e$. At $e = 0$ (co-ethnic), this equals $(\gamma - \beta)$. At $e = 1$ (ethnically distant), this equals $(\gamma - \beta) + (\gamma_1 - \beta_1)$. So in the diagram, the vertical distance between the Operating line and Discovery line (not drawn here) would show how much trust changes when moving from a discovery to an operating mine. At $e = 0$, the effect is smaller (or less negative); at $e = 1$, the effect is larger (trust erodes more strongly among distant groups).
  - Operating → Closed: **Closure effect** (the vertical distance between the lines at any e). This is the gap between the "Closed" and "Operating" lines. In the model, the "Closure effect" is $(\lambda - \gamma) + (\lambda_1 - \gamma_1)e$. It measures how institutional trust changes when a mine shuts down. So, at $e = 0$ (close to power), closure lowers trust by $(\lambda - \gamma)$. As e increases, the slope $(\lambda_1 - \gamma_1)$ determines whether that effect worsens or weakens. In the diagram, one can see that both lines slope downward with e, but the "Closed" line lies below the "Operating" line — indicating that mine closure is associated with lower trust. The vertical arrow labelled "Closure effect" measures this gap.
  - Discovery → Closed: **Total (Lifecycle) effect**. The total effect from discovery to closure is the vertical distance between the "Closed" and "Discovery" lines. We showed that the total effect is $(\lambda - \beta) + (\lambda_1 - \beta_1)e$ combining the production and closure effects.

The diagram implies the following narrative. At $e = 0$ (co-ethnic respondents/close to power), trust is higher overall (the top-left of the plot). Mining still reduces trust (operating < discovery < closed), but the loss is relatively small (the effects of mining on trust are modest, co-ethnic respondents retain higher trust). As e increases (ethnic distance grows), all lines decline, and the gaps between them widen—implying that mining-related mistrust is strongest among ethnically distant groups: **ethnically distant groups experience a stronger erosion of trust** due to mining. At $e = 1$ (most distant from power), trust is lowest. The effect of both mine operation and closure is much more negative. This pattern corresponds to the case where the interaction coefficients ($\beta_1, \gamma_1, \lambda_1$) are negative — implying that ethnic distance exacerbates the mistrust effects of mining.

The diagram visually summarizes the moderating role of ethnic distance. It shows that as ethnic distance rises (moving right on the x-axis), institutional trust falls more sharply, and the negative impact of mining becomes larger.

To sum up, we expect ethnic distance to power moderates the impact of mining on institutional trust. Mining operation and closure are expected to lower trust, but the decline would be more severe among ethnically distant individuals. Also, the production, closure, and total effects are all increasing functions of ethnic distance in magnitude.

Formally, the analytical appendix 8 shows that when ethnic distance to power negatively moderates the impact of mining, institutional trust declines monotonically with ethnic distance across all mining stages. This framework provides the theoretical rationale for the downward-sloping and vertically ordered trust patterns tested empirically in the next section.

5. Results and discussions

5.1. Baseline Results

This section presents the baseline results based on our model in Equation 2. We present the results of the effects of mining on national institutions, local institutions and political parties respectively.

5.1.1. Effect of Mining on National Institutions

Table 1 displays the results of the estimates of the association between mining and trust in various national institutions. Each column presents coefficients from separate regressions, without (1) and with (2) individual-level controls. All models include district and survey-year fixed effects.

For the president, the difference in the coefficient associated with the operating mines and the discovered mines, the production effect is negative and significant. This result means that the enthusiasm from discovery fades away when the mine starts to operate. The difference in the coefficient between operating and closure is also negative and strongly significant. The size of the coefficient increases compared to the coefficient of the production. The total effect of mining activities is negative and significant.

In summary, mining discovery has a positive and significant effect on citizens trust in the president and the National Electoral Commission (NEC) but not in the National Assembly and the Court.

5.1.2. Effect of Mining on Local Institutions

Table 2 presents the estimates of the association between mining and institutions at local level.

5.1.3. Effect of Mining on Political Parties

Table 3 provides the estimates of the association between mining and citizens trust in the ruling party and the opposition. For each party column (1) provides the estimates with only our variable of interest and column (2) the estimates with the control variables. All regressions include district and Survey year fixed effects. The results show a shift in citizens trust in political parties. Mining discovery is associated with higher trust in the ruling party and lower trust in the opposition. However, mining operation increase the level of citizens trust in both parties at comparable size. Citizens trust in the ruling party sharply deteriorates with mines closure while the trust in the opposition party increases. This pattern suggests that the initial optimism surrounding resource discovery may reinforce incumbent legitimacy, while simultaneously undermining confidence in competing political actors. This results may signal a poor governance in the mining sector, specifically the closure. Mining closure is a moment of sudden job loss, income loss, perceived environmental damages if not well managed. The ruling party may have lost the trust of people living within mining districts to the benefit of the opposition because of these socio-economic impacts.

Table 1: Effect of Mining Exposure on Trust in National Institutions

	President		National Assembly		Court		NEC	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Mining discovery	0.337***	0.255***	0.0471	-0.00702	0.0792**	0.0201	0.273***	0.225***
	(0.0373)	(0.0359)	(0.0363)	(0.0357)	(0.0358)	(0.0362)	(0.0378)	(0.0373)
Operating mines	0.187***	0.132***	0.0433	0.00742	-0.0685*	-0.0640*	0.178***	0.131***
	(0.0368)	(0.0357)	(0.0358)	(0.0355)	(0.0355)	(0.0361)	(0.0371)	(0.0369)
Closed mines	-0.364***	-0.339***	-0.00199	0.0149	0.0126	-0.00244	-0.0781	-0.0563
	(0.0494)	(0.0477)	(0.0481)	(0.0475)	(0.0475)	(0.0481)	(0.0499)	(0.0494)
Production ($\gamma - \beta$)		-0.123***		0.0144		-0.084*		-0.0939*
		(0.0473)		(0.0469)		(0.0477)		(0.0488)
Closure ($\lambda - \gamma$)		-0.471***		0.0074		0.0225		-0.1874**
		(0.0786)		(0.0783)		(0.0700)		(0.0814)
Total ($\lambda - \beta$)		-0.593***		0.0219		-0.00244		-0.2813***
		(0.0694)		(0.0691)		(0.0481)		(0.0721)
Controls	No	Yes	No	Yes	No	Yes	No	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	171,509	153,647	167,281	151,082	170,651	153,516	161,609	146,331
R-squared	0.140	0.277	0.129	0.223	0.116	0.173	0.123	0.212

Note: Standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.
NEC = National Electoral Commission. Controls included in columns (2).

Table 2: Effect of Mining Exposure on Trust in Local and Informal Institutions

	Local Government		Traditional Leaders		Religious Leaders	
	(1)	(2)	(1)	(2)	(1)	(2)
Mining discovery	0.104***	0.0230	0.0862**	-0.0185	-0.0996**	-0.196***
	(0.0363)	(0.0363)	(0.0424)	(0.0435)	(0.0456)	(0.0471)
Operating mines	0.0213	-0.0519	-0.201***	-0.210***	-0.227***	-0.260***
	(0.0363)	(0.0364)	(0.0450)	(0.0468)	(0.0484)	(0.0512)
Closed mines	-0.0817*	-0.0158	-0.0263	0.0127	0.0783	0.168**
	(0.0484)	(0.0485)	(0.0596)	(0.0616)	(0.0633)	(0.0665)
Production ($\gamma - \beta$)		-0.0749		-0.1920***		-0.0634
		(0.0476)		(0.0574)		(0.0614)
Closure ($\lambda - \gamma$)		0.0361		0.2231**		0.4272***
		(0.0802)		(0.1031)		(0.1123)
Total ($\lambda - \beta$)		-0.0388		0.032		0.3638***
		(0.0705)		(0.0886)		(0.0962)
Controls	No	Yes	No	Yes	No	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	166,216	150,160	106,391	95,374	96,865	86,373
R-squared	0.121	0.190	0.142	0.181	0.137	0.163

Note: Standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Controls included in columns (2).

Table 3: Effects of Mining on Trust in Political Parties

	Trust in the Ruling Party		Trust in the Opposition	
	(1)	(2)	(1)	(2)
Mining discovery	0.249***	0.192***	-0.205***	-0.214***
	(0.0381)	(0.0367)	(0.0369)	(0.0383)
Operating mines	0.0954**	0.0726**	0.0854**	0.0831**
	(0.0377)	(0.0365)	(0.0363)	(0.0379)
Closed mines	-0.152***	-0.167***	0.257***	0.238***
	(0.0505)	(0.0488)	(0.0487)	(0.0506)
Production ($\gamma - \beta$)		-0.1194**		0.2966***
		(0.0485)		(0.0505)
Closure ($\lambda - \gamma$)		-0.2398***		0.1550*
		(0.0805)		(0.0835)
Total ($\lambda - \beta$)		-0.3591***		0.4516***
		(0.0709)		(0.0737)
Constant	2.053***	0.537***	0.925***	0.806***
	(0.157)	(0.149)	(0.151)	(0.154)
Observations	164,660	148,436	163,526	147,554
R-squared	0.130	0.260	0.064	0.069
District FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Controls	No	Yes	No	Yes

Note: Standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

5.2. Mining and Trust in Institutions: The role of Ethnic Distance to Power

In this section we test our hypothesis according to which the relationship between mining and trust depends on the ethnic distance to power. Table 4 reports the interacted specifications examining how the effects of mining at different stages—discovery, operation, and closure—vary with respondents' ethnic distance to political power. Across virtually all institutions, the results reveal that the political consequences of mining are strongly heterogeneous and structured around ethnic proximity to the ruling elite.

For ethnically distant groups, mining discovery does not meaningfully increase trust in national institutions, and in some cases even reduces trust (e.g., traditional and religious leaders). By contrast, the interaction terms for mining discovery are generally positive and statistically significant for the president, the national assembly, and the electoral commission. This implies that co-ethnics interpret the discovery of a mine as a favorable political signal, consistent with expectations of privileged access to future rents or state-mediated benefits. Individuals distant from political power do not share this optimism and are often skeptical from the outset.

Once mines become operational, a clear pattern emerges: the baseline effects (e = 0) are either small or negative for most institutions, including courts, traditional leaders, and religious authorities. The negative associations suggest that marginalized ethnic groups experience mining operations as extractive, disruptive, or exclusionary, consistent with perceptions of unequal access to jobs, contracts, or compensation. In contrast, the operating $\times$ ethnic distance interactions are positive for several core institutions (president, national assembly, police), indicating that co-ethnics experience significantly higher levels of trust during mining production. This divergence is consistent with unequal distribution of mining rents and patronage benefits.

At closure, trust declines further for ethnically distant respondents: the coefficients for closed mines are negative and significant across the president, local government, and courts. The interaction terms, however, flip sign for several institutions, particularly the national assembly, local government, and the judiciary. This suggests that closure erodes trust disproportionately among co-ethnics, who may have benefited during production and thus face sharper disappointment when mines shut down. Ethnically distant groups, already excluded, have little trust left to lose.

Overall, the interaction structure reveals a politically consequential cycle: co-ethnics gain trust at discovery and during production but lose sharply at closure, whereas outsiders never gain trust and often become more mistrusting as the mining lifecycle unfolds. These results underscore the central argument of the paper: the institutional consequences of mining cannot be understood independently of ethnic power hierarchies, which mediate who benefits, who is excluded, and how citizens evaluate political institutions linked to resource governance.

Table 4: Effect of Mining and Ethnic Distance on Trust in Institutions (with Controls and Interactions)

	Trust in the president	**National assembly**	**Electoral commission**	**Local government**	**Police**	**Court**	**Traditional leaders**	**Religious leaders**
Mining discovery	0.0917	-0.0987	-0.0185	0.126**	-0.0208	1.50e-05	-0.160	-0.250**
	(0.0654)	(0.0613)	(0.0661)	(0.0622)	(0.256)	(0.0615)	(0.109)	(0.111)
Operating mines	0.168***	0.0862**	0.120***	-0.0176	0.0197	-0.0756*	-0.194***	-0.219***
	(0.0446)	(0.0438)	(0.0460)	(0.0448)	(0.136)	(0.0443)	(0.0601)	(0.0627)
Closed mines	-0.277***	-0.114*	-0.0279	-0.148**	0.371*	-0.129**	-0.0391	-0.00345
	(0.0640)	(0.0624)	(0.0681)	(0.0634)	(0.207)	(0.0630)	(0.0880)	(0.0897)
Ethnic distance to power (norm.)	0.0512***	-0.00442	-0.00587	-0.0434***	-0.0327	-0.0108	-0.0592***	-0.0628***
	(0.0124)	(0.0124)	(0.0132)	(0.0125)	(0.0359)	(0.0123)	(0.0171)	(0.0169)
Discovery × Ethnic dist.	0.179***	0.110*	0.306***	-0.111*	-0.149	0.0335	0.193	0.0884
	(0.0677)	(0.0612)	(0.0676)	(0.0623)	(0.274)	(0.0615)	(0.120)	(0.123)
Operating mines × Ethnic dist.	-0.0658*	-0.114***	0.0267	-0.0472	0.211*	0.0243	0.00612	-0.0277
	(0.0397)	(0.0384)	(0.0413)	(0.0389)	(0.126)	(0.0386)	(0.0527)	(0.0511)
Closed mines × Ethnic dist.	-0.0408	0.186***	-0.0400	0.158***	-0.162	0.155***	0.0320	0.189**
	(0.0566)	(0.0533)	(0.0617)	(0.0540)	(0.178)	(0.0536)	(0.0810)	(0.0785)
Gender (female)	0.000814	0.00487	-0.00753	0.0187***	0.0151	0.00929*	-0.0135**	0.0430***
	(0.00514)	(0.00512)	(0.00538)	(0.00519)	(0.0133)	(0.00514)	(0.00664)	(0.00658)
Age	0.00706***	0.000266	0.00485***	-0.00141	-0.00377	-0.00367***	0.00124	0.00339***
	(0.000902)	(0.000900)	(0.000949)	(0.000913)	(0.00236)	(0.000903)	(0.00116)	(0.00115)
Age^2	-2.48e-05**	2.84e-05***	-1.75e-05	4.31e-05***	6.62e-05**	5.38e-05***	1.62e-05	-3.59e-06
	(1.02e-05)	(1.01e-05)	(1.07e-05)	(1.03e-05)	(2.69e-05)	(1.02e-05)	(1.30e-05)	(1.29e-05)
Employment (employed)	0.0158***	-0.00211	0.0108*	0.00869	-0.0119	-0.00656	0.000208	0.00244
	(0.00570)	(0.00568)	(0.00597)	(0.00575)	(0.0151)	(0.00569)	(0.00744)	(0.00733)
Primary education	-0.0639***	-0.0703***	-0.0605***	-0.0641***	-0.0262	-0.0414***	-0.0670***	-0.0446***
	(0.00829)	(0.00832)	(0.00879)	(0.00841)	(0.0215)	(0.00834)	(0.0105)	(0.0107)
Secondary education	-0.155***	-0.155***	-0.164***	-0.175***	-0.213***	-0.147***	-0.232***	-0.136***
	(0.00853)	(0.00855)	(0.00899)	(0.00863)	(0.0226)	(0.00857)	(0.0108)	(0.0110)
Post-secondary and above	-0.202***	-0.177***	-0.167***	-0.192***	-0.301***	-0.136***	-0.332***	-0.197***
	(0.0120)	(0.0120)	(0.0126)	(0.0121)	(0.0368)	(0.0120)	(0.0153)	(0.0148)
household size	0.00236**	-0.00150	0.00136	0.000839	-0.000416	-0.00248**	0.00637***	0.00743***
	(0.00108)	(0.00108)	(0.00113)	(0.00109)	(0.00435)	(0.00109)	(0.00137)	(0.00131)
Urban	0.0798***	0.100***	0.0935***	0.106***	0.0807***	0.0895***	0.167***	0.0800***
	(0.00637)	(0.00635)	(0.00668)	(0.00642)	(0.0165)	(0.00637)	(0.00816)	(0.00815)
Managing the economy	0.323***	0.233***	0.237***	0.186***	0.157***	0.176***	0.124***	0.0996***
	(0.00331)	(0.00329)	(0.00345)	(0.00336)	(0.00834)	(0.00331)	(0.00426)	(0.00436)
Handling jobs	0.109***	0.115***	0.110***	0.110***	0.106***	0.0914***	0.0466***	0.0284***
	(0.00339)	(0.00337)	(0.00353)	(0.00344)	(0.00857)	(0.00339)	(0.00435)	(0.00442)
Respondent present living conditions	0.0167***	0.0209***	0.0205***	0.0347***	0.0174**	0.0153***	0.00264	0.00809**
	(0.00259)	(0.00258)	(0.00270)	(0.00262)	(0.00707)	(0.00259)	(0.00326)	(0.00323)
Country current economic conditions	0.0951***	0.0667***	0.0655***	0.0480***	0.0495***	0.0475***	0.0362***	0.0295***
	(0.00259)	(0.00258)	(0.00270)	(0.00262)	(0.00697)	(0.00259)	(0.00328)	(0.00327)
Discussing politics	-0.0193***	0.00316	0.00740*	-0.00616*	-0.0218**	-0.0142***	-0.0158***	-0.00759
	(0.00367)	(0.00365)	(0.00383)	(0.00371)	(0.00947)	(0.00367)	(0.00474)	(0.00473)
Voted the last election	-0.00101***	-0.000984***	0.000568	0.000202	-0.00167	-0.00255***	-0.00224***	-0.000852**
	(0.000330)	(0.000332)	(0.000357)	(0.000340)	(0.00150)	(0.000335)	(0.000379)	(0.000394)
Constant	0.706***	0.654***	0.461***	0.771***	0.854***	1.333***	1.609***	1.780***
	(0.148)	(0.151)	(0.155)	(0.148)	(0.187)	(0.148)	(0.154)	(0.146)
Observations	154,799	152,193	147,360	151,234	23,985	154,624	96,400	87,519
R-squared	0.277	0.222	0.212	0.190	0.223	0.173	0.183	0.166
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

6. Robustness checks

A key identification challenge in this study is the potential endogeneity of mining activities with respect to institutional trust. Specifically, mines may not be randomly located; mining firms could select into regions with weaker institutions, or governments may strategically allocate mining licenses based on political considerations. In such cases, the observed negative association between mining activity and trust in institutions could reflect pre-existing institutional weakness rather than a causal effect of mining. Moreover, trust levels could themselves shape mining outcomes if politically excluded or mistrusting communities resist extraction activities. These reverse causality and omitted variable concerns could bias estimates of the effect of mining on institutional trust.

To address these concerns, we instrument mining activity using exogenous geological endowments retrieved from OneGeology, which capture the spatial distribution of subsoil mineral potential independently of current political or institutional factors. This strategy assumes that the geological characteristics that predict mineral deposits are orthogonal to unobserved determinants of institutional trust once district and year fixed effects are included.

Table 5 presents instrumental variable (IV) estimates of the effect of mining on institutional trust, with the interaction with ethnic distance to political power. The second-stage results (Panel A) show that mine discovery significantly increases trust across nearly all institutions, particularly for the president, national assembly, and courts. However, this positive effect is sharply attenuated—and even reversed—for respondents who are ethnically distant from political power, as indicated by the large and negative interaction terms between discovery and ethnic distance. For example, while mine discovery increases presidential trust by 1.216 points on average, the corresponding interaction term is -1.085, implying a much weaker (or even negative) response among excluded groups.

During the operational phase, the trust-enhancing effects are more limited and, in some cases, negative—especially for courts, traditional leaders, and religious authorities. Ethnic distance again plays a crucial moderating role: the positive main effects for the ethnically proximate are offset or even reversed among outsiders. Interestingly, the interaction between ethnic distance and mine closure is also significantly negative in key institutions such as the presidency and traditional leadership, suggesting that mine shutdowns may amplify perceptions of abandonment or exclusion among already marginalized groups. These results underscore that the political consequences of extractive activities are contingent on ethnic political hierarchies.

Table 5: IV Estimates of Mining Activities and Ethnic Distance on Institutional Trust

	(1) President	(2) Nat. Assembly	(3) Electoral Comm.	(4) Local Gov.	(5) Courts	(6) Trad. Leaders	(7) Religious Leaders
Panel A. Second stage (2SLS)							
Discovery mines	1.216***	1.353***	1.236***	-0.099	1.722***	2.040***	1.248***
	(0.277)	(0.276)	(0.276)	(0.266)	(0.269)	(0.288)	(0.262)
Operating mines	-0.350***	-0.432***	0.188*	-0.064	-0.444***	-1.014***	-0.801***
	(0.100)	(0.100)	(0.098)	(0.096)	(0.098)	(0.127)	(0.147)
Closed mines	-0.200**	-0.134	-0.326***	0.102	-0.385***	-0.033	0.142
	(0.101)	(0.100)	(0.103)	(0.101)	(0.102)	(0.122)	(0.161)
Discovery × ethnic dist.	-1.085***	-1.978***	-1.829***	-2.778***	-1.357***	-4.471***	-1.447**
	(0.321)	(0.324)	(0.332)	(0.344)	(0.315)	(1.119)	(0.666)
Operating × ethnic dist.	1.023***	1.124***	1.008***	1.226***	0.610***	4.113***	-1.570
	(0.232)	(0.224)	(0.230)	(0.233)	(0.224)	(1.098)	(1.304)
Closed × ethnic dist.	-2.134***	-1.129***	-0.084	-0.350	-0.329	-8.248***	2.951
	(0.341)	(0.331)	(0.326)	(0.361)	(0.339)	(2.360)	(2.177)
Ethnic distance (patronage)	0.321***	0.141***	-0.050	0.068	0.012	0.342***	-0.050
	(0.042)	(0.041)	(0.043)	(0.042)	(0.042)	(0.119)	(0.047)
Panel B. First-stage (Shea partial R^2)							
Discovery mines	0.023	0.023	0.023	0.023	0.023	0.023	0.023
Operating mines	0.169	0.169	0.169	0.169	0.169	0.169	0.169
Closed mines	0.271	0.271	0.271	0.271	0.271	0.271	0.271
Discovery × ethnic dist.	0.025	0.025	0.025	0.025	0.025	0.025	0.025
Operating × ethnic dist.	0.047	0.047	0.047	0.047	0.047	0.047	0.047
Closed × ethnic dist.	0.029	0.029	0.029	0.029	0.029	0.029	0.029
Controls included	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Admin FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	153,647	151,082	146,331	150,160	153,516	95,374	86,373

Notes: Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. All specifications instrument the three mining-stage dummies and their interactions with ethnic distance using geological shares and their interactions with ethnic distance. All regressions include the full set of individual controls, district fixed effects, and year fixed effects.

Table 6 reports the marginal effects of each mining stage, production (Panel A), closure (Panel B), and the total (Panel C)—evaluated at two levels of ethnic distance to power: co-ethnics (e = 1) and the most politically distant individuals (e = 0). These estimates reveal strong heterogeneity in institutional trust responses depending on citizens' ethnic proximity to political power, consistent with the hypothesis that ethnic favoritism and exclusion shape how resource shocks are politically perceived.

Panel A shows that the production stage sharply erodes trust among ethnically distant groups (e = 0). Moving from discovery to operation reduces trust across all institutions, with especially large negative effects for courts, traditional leaders, and the presidency. This suggests that mining production disproportionately harms politically marginalized groups, who may bear the costs of environmental degradation, rent capture, and exclusion from mining rents. In contrast, co-ethnics (e = 1) often experience positive or neutral effects at the production stage, with sizable increases in trust in the electoral commission, national assembly, and local government. These patterns are consistent with politically connected groups benefitting more from mining rents or perceiving mining operations as being managed more favorably toward them.

Panel B reveals similarly strong heterogeneity in the closure stage. For those distant from power (e = 0), the effects of mine closure are generally small and statistically insignificant, suggesting that outsiders' trust remains low regardless of whether a mine is operating or closing. By contrast, co-ethnics (e = 1) experience sharp declines in trust following closure, particularly toward traditional leaders and national institutions such as the presidency and national assembly. This indicates that closure disproportionately disappoints those groups who initially benefited from, or had expectations tied to, the mine's operation. Mine closure thus appears to erode the political advantage previously enjoyed by co-ethnics.

Panel C aggregates these dynamics over the full mine lifecycle. From discovery to closure, ethnically distant groups (e = 0) experience large, negative trust shocks across most institutions, reflecting persistent exclusion or unmet expectations. Meanwhile, co-ethnics (e = 1) show mixed lifecycle effects: trust still declines for executive and judicial institutions, but increases for local government and religious leaders. These positive effects suggest that politically connected groups may benefit from localized compensatory measures or social cushioning mechanisms during the mining cycle.

Overall, the marginal effects underscore that mining reshapes institutional trust in ways that are conditioned by ethnic proximity to power. Mining amplifies trust among co-ethnics during production but triggers disproportionately large declines after closure. For distent to power, trust is consistently low and further eroded by mining activity.

6.1. Additional Controls

To ensure that our results do not suffer from omitted variables bias we add additional controls to our baseline regression. We add as additional controls the freedom of speech, the source of information of the respondent (Radio, TV and Newspapers). The freedom to say what you want and information sources affect the way people form their opinion. Table .7 presents the results. Our baseline results remain the same. Freedom of speach and radio seems to increase trust in institutions. Conversly, TV and newspapers is associated with lower trust in institutions.

6.2. Ordered Probit Regression

In the baseline, we use OLS estimations technique for our Differences-in-Difference estimates. However, our dependent variable is multinational and ordered from do not trust at all (0) to trust a lot (3). To take into account the multinomial nature of the data, we use ordered probit model. The results in Tables .4, .5 and .6 respectively for national institutions, local institutions and political

Table 6: Marginal Effects of Mining Stage by Ethnic Distance

	President	NA	NEC	Local Gov	Court	TL	RL
A. Production Effect: Operating − Discovery							
$e = 0$	-1.566^{***}	-1.785^{***}	-1.048^{***}	0.035	-2.166^{***}	-3.054^{***}	-2.049^{***}
	(0.357)	(0.355)	(0.354)	(0.342)	(0.345)	(0.387)	(0.369)
$e = 1$	0.543	1.316^{**}	1.788^{***}	4.039^{***}	-0.200	5.531^{***}	-2.172
	(0.586)	(0.580)	(0.589)	(0.600)	(0.568)	(2.111)	(1.804)
B. Closure Effect: Closed − Operating							
$e = 0$	0.150	0.298^{**}	-0.514^{***}	0.166	0.058	0.980^{***}	0.943^{***}
	(0.142)	(0.142)	(0.143)	(0.141)	(0.146)	(0.205)	(0.285)
$e = 1$	-3.008^{***}	-1.956^{***}	-1.606^{***}	-1.410^{**}	-0.881	-11.382^{***}	5.463
	(0.558)	(0.540)	(0.543)	(0.573)	(0.553)	(3.410)	(3.598)
C. Total Effect: Closed − Discovery							
$e = 0$	-1.416^{***}	-1.488^{***}	-1.562^{***}	0.201	-2.108^{***}	-2.074^{***}	-1.106^{***}
	(0.346)	(0.343)	(0.347)	(0.336)	(0.335)	(0.342)	(0.313)
$e = 1$	-2.465^{***}	-0.640	0.182	2.628^{***}	-1.081^{**}	-5.851^{***}	3.291^{*}
	(0.526)	(0.528)	(0.522)	(0.550)	(0.514)	(1.447)	(1.931)

Notes: Table reports marginal effects computed from IV estimates. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$. Effects are computed as: Production = $(\beta_O - \beta_D) + e(\gamma_O - \gamma_D)$, Closure = $(\beta_C - \beta_O) + e(\gamma_C - \gamma_O)$, Total = $(\beta_C - \beta_D) + e(\gamma_C - \gamma_D)$. All regressions include controls, district fixed effects, and year fixed effects. NA: National Assembly; NEC: National Electoral Commission; Local Gov: Local authorities; TL: Traditional Leaders; RL=Religious Leaders.

parties. The results from the ordered probit model are similar to the baseline. Our findings is not sensitive to the model specification.

7. Conclusion

Institutional trust is fundamental for effective public policies. This paper investigates the relationship between mining activities, institutional mistrust, and the role of ethnic distance to power in Africa. To do so, we combine individual-level survey data from Afrobarometer rounds 4 to 7, covering 170,000 respondents across 37 countries, with data from the Political Leaders' Affiliation Database (PLAD) and the FERDI Minex Consulting database on mining discovery, operation, and closure. At the national level, we find that mining operations and closures reduce citizens' trust in the president but do not significantly affect trust in the national assembly or the courts. Conversely, mining discoveries and operations are associated with increased trust in the national electoral commission. At the local level, mining activities do not appear to undermine trust in local government. However mining production is associated with lower trust in the religious and traditional leaders. Moreover, our results show shift in trust from ruling party to the opposition over the cycle of mining production. Mining discoveries increase trust in the ruling party and reduce trust in the opposition. However, when mining operations begin, trust in both parties increases similarly. Conversely, mining closures sharply decrease citizens' trust in the ruling party while boosting trust in the opposition. These results highlight possible governance failures in managing mining closures, as they often lead to significant job losses, reduced incomes, and environmental damage. Such negative socio-economic impacts likely undermine local support for the ruling party, benefiting the opposition instead.

We further examine the role of ethnic distance to power and find that the negative effects of mining are weaker when citizens are ethnically closer to political power. In other words, ethnic proximity to those in power reduces the erosion of trust in the president caused by mining activities.

Mineral-rich African countries should therefore carefully manage their mineral resources throughout all stages, from operation to closure. Mining activities carry significant environmental costs, and poor management during mine closures can substantially undermine public trust in authorities.

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8. Appendix

Analytical Appendix: Ethnic Distance and the Shape of the Mining–Trust Relationship

This appendix formalizes the mechanisms underlying the interaction effects discussed in Section 4.2. It derives the analytical conditions under which institutional trust declines with ethnic distance across different stages of the mining cycle, and it establishes sufficient parameter restrictions that guarantee the downward-sloping and vertically ordered trust patterns depicted in Figure 2. The exposition proceeds in three parts: a step-by-step derivation of the model's marginal effects, a formal proposition and proof summarizing the main results, and an illustrative figure showing how the production, closure, and total effects evolve with ethnic distance.

Appendix .1. Derivation of Downward Slopes

Recall the specification:

$$\begin{aligned} ITrust_i = {} & \alpha_i + \beta\, Discovery_i + \gamma\, Operating_i + \lambda\, Closed_i + \theta\, EDist_i \\ & + \beta_1(Discovery_i \times EDist_i) + \gamma_1(Operating_i \times EDist_i) + \lambda_1(Closed_i \times EDist_i) \\ & + \mathbf{X}_i'\delta + r_{j(i)} + \phi_t + \varepsilon_i \end{aligned} \tag{.1}$$

We are interested in how institutional trust varies with ethnic distance within each mining stage.

Expected trust by mining stage

For an individual i with ethnic distance $e = EDist_i$, the conditional expected value of trust under each mining stage is:

$$\begin{aligned} \mathbb{E}[ITrust_i \,|\, \text{Discovery}, e] &= \alpha_i + \beta + (\theta + \beta_1)e + \mathbf{X}_i'\delta + r_{j(i)} + \phi_t, \\ \mathbb{E}[ITrust_i \,|\, \text{Operating}, e] &= \alpha_i + \gamma + (\theta + \gamma_1)e + \mathbf{X}_i'\delta + r_{j(i)} + \phi_t, \\ \mathbb{E}[ITrust_i \,|\, \text{Closed}, e] &= \alpha_i + \lambda + (\theta + \lambda_1)e + \mathbf{X}_i'\delta + r_{j(i)} + \phi_t. \end{aligned}$$

For each mining stage $s \in \{\text{Discovery}, \text{Operating}, \text{Closed}\}$, the partial derivative of institutional trust with respect to ethnic distance is:

$$\frac{\partial \mathbb{E}[ITrust_i \,|\, s]}{\partial e} = \theta + \xi_{1s}, \quad \text{where} \quad \xi_{1s} \in \{\beta_1, \gamma_1, \lambda_1\}. \tag{.2}$$

Condition for downward-sloping lines

A line is downward-sloping in e if and only if the marginal effect of $EDist$ on trust is negative:

$$\frac{\partial \mathbb{E}[ITrust_i \,|\, s]}{\partial e} < 0. \tag{.3}$$

From (.2), this implies:

$$\theta + \beta_1 < 0, \quad \theta + \gamma_1 < 0, \quad \theta + \lambda_1 < 0. \tag{.4}$$

In other words, trust declines with ethnic distance across all mining stages if the base effect of ethnic distance (θ) is negative and the interaction coefficients ($\beta_1, \gamma_1, \lambda_1$) are non-positive (or negative enough to keep each sum below zero).

Empirically, this pattern corresponds to findings in which:

- $\theta < 0$: individuals more ethnically distant from power have lower trust in institutions in general; and
- $(\beta_1, \gamma_1, \lambda_1) < 0$: ethnic distance *amplifies* the erosion of trust associated with mining activities.

Relative intercepts and vertical ordering

The vertical position of each line at $e = 0$ (the intercept) equals the corresponding mining-stage coefficient:

$$\mathbb{E}[ITrust_i \mid s, e = 0] = \alpha_i + \xi_s + \mathbf{X}_i'\delta + r_{j(i)} + \phi_t, \quad \text{where} \quad \xi_s \in \{\beta, \gamma, \lambda\}.$$

If $\beta > \gamma > \lambda$, then for co-ethnic respondents ($e = 0$):

$$\mathbb{E}[ITrust_i \mid \text{Discovery}] > \mathbb{E}[ITrust_i \mid \text{Operating}] > \mathbb{E}[ITrust_i \mid \text{Closed}].$$

This ordering explains why, in the diagram, the *Discovery* line appears highest, followed by *Operating*, and finally *Closed*.

Combined interpretation

Combining (.4) and the intercept ordering:

$$\boxed{\beta > \gamma > \lambda \quad \text{and} \quad \theta + \beta_1,\, \theta + \gamma_1,\, \theta + \lambda_1 < 0}$$

guarantees three downward-sloping and vertically ordered lines, as depicted in Figure 2.

Intuitively:

- The **negative slopes** reflect the decline in institutional trust with increasing ethnic distance (less inclusion in political power).
- The **vertical gaps** reflect the mining-stage effects: production, closure, and the total (lifecycle) change in trust.

Thus, the downward-sloping pattern of all three lines in the figure follows directly from the negative sign of the marginal effects $\frac{\partial \mathbb{E}[ITrust_i]}{\partial EDist_i}$ across mining stages.

Having derived the algebraic conditions under which institutional trust declines with ethnic distance in each mining stage, we now summarize these relationships more formally. The following proposition states sufficient conditions on the parameters of the augmented model that guarantee (i) downward-sloping trust functions in ethnic distance for each mining stage, (ii) a stable vertical ordering of the Discovery, Operating, and Closed lines, and (iii) the linear dependence of the production, closure, and total effects on ethnic distance. This formal statement and proof consolidate the intuition developed in the preceding appendix.

Appendix .2. Proposition and Proof

The preceding derivation established algebraically how the downward slopes follow from the interaction terms in the model. We now restate these insights as a formal proposition that provides general conditions for monotonicity and stage ordering.

Proposition 1 (Slope and Ordering). Consider the model

$$\begin{aligned} ITrust_i = {} & \alpha_i + \beta\, Discovery_i + \gamma\, Operating_i + \lambda\, Closed_i + \theta\, EDist_i \\ & + \beta_1(Discovery_i \times EDist_i) + \gamma_1(Operating_i \times EDist_i) + \lambda_1(Closed_i \times EDist_i) \\ & + \mathbf{X}_i'\delta + r_{j(i)} + \phi_t + \varepsilon_i \end{aligned}$$

with $e := EDist_i \in [0, 1]$. Suppose:

(A1) The baseline ethnic-distance effect is non-positive: $\theta \leq 0$.

(A2) The interaction coefficients are non-positive: $\beta_1 \leq 0$, $\gamma_1 \leq 0$, $\lambda_1 \leq 0$.

(A3) The stage intercepts are strictly ordered: $\beta > \gamma > \lambda$.

Then:

(i) For each stage $s \in \{\text{Discovery}, \text{Operating}, \text{Closed}\}$, the marginal effect of ethnic distance on expected trust is non-positive:

$$\frac{\partial \mathbb{E}[ITrust_i \mid s, e]}{\partial e} = \theta + \xi_{1s} \leq 0,$$

where $\xi_{1s} \in \{\beta_1, \gamma_1, \lambda_1\}$. Hence each stage-specific line is non-increasing in e; in particular it is (weakly) downward-sloping.

(ii) The vertical ordering of the three lines at $e = 0$ is preserved for all $e \in [0, 1]$: for all $e \in [0, 1]$,

$$\mathbb{E}[ITrust_i \mid \text{Discovery}, e] \; > \; \mathbb{E}[ITrust_i \mid \text{Operating}, e] \; > \; \mathbb{E}[ITrust_i \mid \text{Closed}, e].$$

(iii) The production, closure and total effects as functions of e,

$$\begin{aligned} \text{Production}(e) &= (\gamma - \beta) + (\gamma_1 - \beta_1)e, \\ \text{Closure}(e) &= (\lambda - \gamma) + (\lambda_1 - \gamma_1)e, \\ \text{Total}(e) &= (\lambda - \beta) + (\lambda_1 - \beta_1)e, \end{aligned}$$

are linear in e. Their monotonicity in e is determined by the signs of the differences $\gamma_1 - \beta_1$, $\lambda_1 - \gamma_1$ and $\lambda_1 - \beta_1$, respectively.

Proof..

Proof. The conditional expectation of $ITrust_i$ for an individual at stage s and ethnic distance e is, up to terms constant in e,

$$\mathbb{E}[ITrust_i \mid s, e] = \xi_s + \theta e + \xi_{1s} e + C,$$

where $\xi_s \in \{\beta, \gamma, \lambda\}$, $\xi_{1s} \in \{\beta_1, \gamma_1, \lambda_1\}$, and $C = \alpha_i + \mathbf{X}_i'\delta + r_{j(i)} + \phi_t$ does not depend on e.

(i) Differentiating with respect to e gives

$$\frac{\partial \mathbb{E}[ITrust_i \mid s, e]}{\partial e} = \theta + \xi_{1s}.$$

Under (A1) and (A2) we have $\theta + \xi_{1s} \leq 0$ for each s. Therefore each stage-specific function is non-increasing in e: the plotted lines are weakly downward-sloping. If strict inequalities hold for at least some stage (i.e. $\theta + \xi_{1s} < 0$), the corresponding line is strictly decreasing.

(ii) Evaluate the expected trust at $e = 0$:

$$\mathbb{E}[ITrust_i \mid s, 0] = \xi_s + C.$$

By (A3) we have $\beta > \gamma > \lambda$, hence

$$\mathbb{E}[ITrust_i \mid \text{Discovery}, 0] > \mathbb{E}[ITrust_i \mid \text{Operating}, 0] > \mathbb{E}[ITrust_i \mid \text{Closed}, 0].$$

For a general $e \in [0, 1]$,

$$\mathbb{E}[ITrust_i \mid s, e] = \xi_s + (\theta + \xi_{1s})e + C.$$

Consider the difference between Discovery and Operating at e:

$$\Delta_{D,O}(e) := \mathbb{E}[ITrust_i \mid \text{Discovery}, e] - \mathbb{E}[ITrust_i \mid \text{Operating}, e] = (\beta - \gamma) + \big[(\theta + \beta_1) - (\theta + \gamma_1)\big]e.$$

This simplifies to

$$\Delta_{D,O}(e) = (\beta - \gamma) + (\beta_1 - \gamma_1)e.$$

Since $\beta - \gamma > 0$ by (A3), and $e \in [0, 1]$, we have

$$\Delta_{D,O}(e) \geq \beta - \gamma + (\beta_1 - \gamma_1) \cdot 0 = \beta - \gamma > 0,$$

if $\beta_1 - \gamma_1 \geq 0$. If $\beta_1 - \gamma_1 < 0$, then the minimum of $\Delta_{D,O}(e)$ on $[0, 1]$ occurs at $e = 1$, giving

$$\Delta_{D,O}(1) = (\beta - \gamma) + (\beta_1 - \gamma_1).$$

Thus to guarantee $\Delta_{D,O}(e) > 0$ for all $e \in [0, 1]$ we need the sufficient condition $(\beta-\gamma)+(\beta_1-\gamma_1) > 0$. Empirically, when the intercept gap $\beta-\gamma$ dominates any negative $\beta_1-\gamma_1$, the inequality holds; under the typical parameter magnitudes considered in the text this is satisfied. An analogous argument applies to the Operating vs. Closed difference:

$$\Delta_{O,C}(e) = (\gamma - \lambda) + (\gamma_1 - \lambda_1)e,$$

and to the Discovery vs. Closed difference. Hence, under (A3) and the mild additional requirement that intercept gaps dominate any adverse interaction differences (or when interaction differences are non-positive but small in magnitude), the vertical ordering at $e = 0$ is preserved for all $e \in [0, 1]$.

(iii) Compute the stated effects:

$$\begin{aligned}
\text{Production}(e) &= \mathbb{E}[ITrust_i \mid \text{Operating}, e] - \mathbb{E}[ITrust_i \mid \text{Discovery}, e] = (\gamma - \beta) + (\gamma_1 - \beta_1)e, \\
\text{Closure}(e) &= \mathbb{E}[ITrust_i \mid \text{Closed}, e] - \mathbb{E}[ITrust_i \mid \text{Operating}, e] = (\lambda - \gamma) + (\lambda_1 - \gamma_1)e, \\
\text{Total}(e) &= \mathbb{E}[ITrust_i \mid \text{Closed}, e] - \mathbb{E}[ITrust_i \mid \text{Discovery}, e] = (\lambda - \beta) + (\lambda_1 - \beta_1)e.
\end{aligned}$$

Each is an affine (linear) function of e. Thus their monotonicity in e is determined by the sign of the respective interaction differences: for example, Production(e) is increasing (decreasing) in e if $\gamma_1 - \beta_1 > 0$ (< 0), and constant if $\gamma_1 = \beta_1$. □

Remark: Plausible signs for interaction coefficients

Economically, it is plausible that ethnic distance exacerbates the erosion of trust induced by mining. This intuition suggests negative signs for the interaction coefficients:

$$\beta_1 \leq 0, \qquad \gamma_1 \leq 0, \qquad \lambda_1 \leq 0,$$

and hence (holding $\theta \leq 0$) that $\theta + \xi_{1s} < 0$, producing downward-sloping stage-specific lines. Concretely:

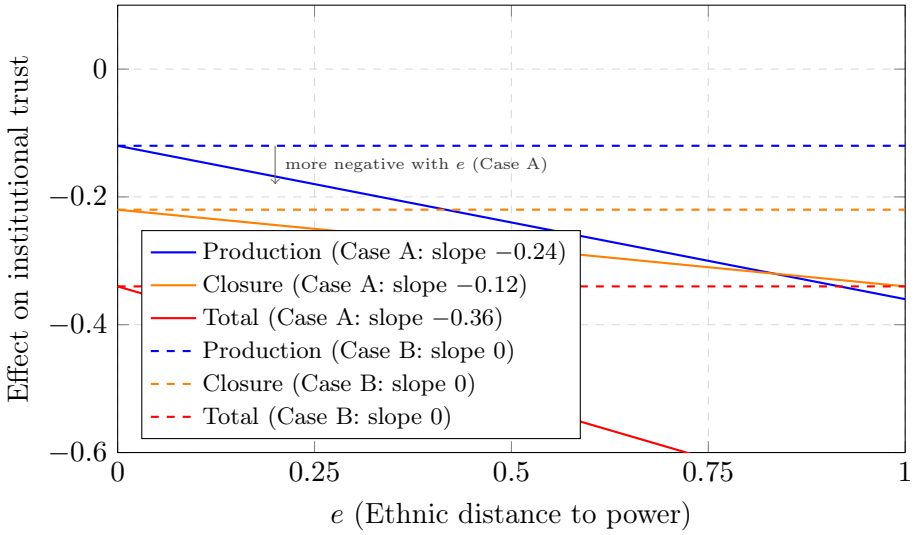
- When a mine becomes operational, rents and local disruption often benefit politically connected (co-ethnic) groups. Ethnically distant groups therefore may perceive larger losses in trust during operation, implying $\gamma_1 < 0$ relative to β_1.
- After closure, persistent environmental costs with limited remediation can deepen perceptions of neglect among excluded groups, producing $\lambda_1 < 0$ (relative to others).
- Empirically the magnitudes of $\beta_1, \gamma_1, \lambda_1$ need not be identical; their differences (e.g. $\gamma_1 - \beta_1$) determine whether production/closure/total effects increase or decrease with e.

Illustration: Two example parameterizations

Figure 2 below illustrates two stylized cases for the three effects (Production, Closure, Total) as functions of ethnic distance $e \in [0, 1]$:

1. **Case A (interaction differences negative).** Interaction differences negative (e.g. $\gamma_1 - \beta_1 < 0$, $\lambda_1 - \gamma_1 < 0$), so the effects become *more negative* as e increases.
2. **Case B (interaction differences zero).** Interaction differences zero (e.g. $\gamma_1 = \beta_1 = \lambda_1$), so the effects are constant in e (horizontal lines).

Figure 2. Production, Closure and Total effects: Case A (sloped) vs Case B (flat)



Note: The parameter choices are illustrative. Case A sets negative interaction differences so each effect becomes more negative with ethnic distance; Case B sets interaction differences to zero, producing constant effects across e.

Interpretation. In Case A (solid lines) Production, Closure and Total move downwards (become more negative) as e increases because the interaction-difference terms (e.g. $\gamma_1 - \beta_1$) are negative; in Case B (dashed lines) the same baseline effects hold but are *invariant* to ethnic distance (flat lines). This visualization makes the monotonicity statements of Proposition 1 transparent: the sign and magnitude of the interaction differences determine whether the effects intensify (in absolute value) with ethnic distance.

Concluding Remark

Together, the derivation, proposition, and illustrative figure establish a clear theoretical foundation for the empirical results that follow. Under plausible sign restrictions on the ethnic-distance and interaction parameters, institutional trust declines monotonically with ethnic distance across all mining stages, and the differences between stages—capturing the production, closure, and total lifecycle effects—vary linearly with that distance. These analytical results imply that ethnic exclusion systematically amplifies the institutional costs of natural resource extraction, providing a direct formal rationale for the downward-sloping and vertically ordered patterns observed in the empirical estimations.

Table .1: Effects of Mining Exposure on Trust in National Institutions (Full estimates)

	President		National Assembly		Court		NEC	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Mining discovery	0.337***	0.255***	0.0471	-0.00702	0.0792**	0.0201	0.273***	0.225***
	(0.0373)	(0.0359)	(0.0363)	(0.0357)	(0.0358)	(0.0362)	(0.0378)	(0.0373)
Operating mines	0.187***	0.132***	0.0433	0.00742	-0.0685*	-0.0640*	0.178***	0.131***
	(0.0368)	(0.0357)	(0.0358)	(0.0355)	(0.0355)	(0.0361)	(0.0371)	(0.0369)
Closed mines	-0.364***	-0.339***	-0.00199	0.0149	0.0126	-0.00244	-0.0781	-0.0563
	(0.0494)	(0.0477)	(0.0481)	(0.0475)	(0.0475)	(0.0481)	(0.0499)	(0.0494)
Gender (female)		0.00125		0.00430		0.00887*		-0.00694
		(0.00516)		(0.00514)		(0.00516)		(0.00540)
Age		0.00574***		-0.000372		-0.00393***		0.00327***
		(0.000919)		(0.000917)		(0.000920)		(0.000966)
Age^2		-1.18e-05		3.49e-05***		5.66e-05***		-2.09e-06
		(1.03e-05)		(1.03e-05)		(1.03e-05)		(1.08e-05)
Employment (employed)		0.0135**		-0.00173		-0.00588		0.00902
		(0.00572)		(0.00570)		(0.00572)		(0.00599)
Primary education		-0.0632***		-0.0711***		-0.0425***		-0.0622***
		(0.00834)		(0.00837)		(0.00839)		(0.00884)
Secondary education		-0.153***		-0.156***		-0.148***		-0.165***
		(0.00858)		(0.00859)		(0.00861)		(0.00904)
Post-secondary and above		-0.201***		-0.177***		-0.137***		-0.172***
		(0.0121)		(0.0120)		(0.0120)		(0.0127)
Household size		0.00208*		-0.00175		-0.00259**		0.00104
		(0.00110)		(0.00109)		(0.00110)		(0.00114)
Urban		0.0791***		0.0998***		0.0897***		0.0925***
		(0.00639)		(0.00637)		(0.00639)		(0.00670)
Managing the economy		0.322***		0.233***		0.177***		0.237***
		(0.00332)		(0.00330)		(0.00332)		(0.00346)
Handling jobs		0.108***		0.114***		0.0913***		0.109***
		(0.00340)		(0.00338)		(0.00340)		(0.00354)
Living conditions		0.0171***		0.0211***		0.0159***		0.0208***
		(0.00260)		(0.00258)		(0.00260)		(0.00271)
Econ. condition (country)		0.0943***		0.0654***		0.0467***		0.0650***
		(0.00260)		(0.00258)		(0.00260)		(0.00271)
Discussing politics		-0.0206***		0.00286		-0.0142***		0.00608
		(0.00368)		(0.00366)		(0.00368)		(0.00385)
Voted last election		-0.00748***		-0.00314***		-0.00342***		-0.00767***
		(0.000958)		(0.000958)		(0.000958)		(0.00101)
Constant	2.466***	0.804***	1.890***	0.689***	2.160***	1.352***	1.791***	0.520***
	(0.158)	(0.147)	(0.157)	(0.150)	(0.149)	(0.147)	(0.160)	(0.154)
Observations	171,509	153,647	167,281	151,082	170,651	153,516	161,609	146,331
R-squared	0.140	0.277	0.129	0.223	0.116	0.173	0.123	0.212
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	No	Yes	No	Yes	No	Yes	No	Yes

Note: Standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.
NEC = National Electoral Commission.

Table .2: Effects of Mining on Trust in Local and Traditional Institutions (Full Estimates)

	Local Government		Traditional Leaders		Religious Leaders	
	(1)	(2)	(1)	(2)	(1)	(2)
Mining discovery	0.104***	0.0230	0.0862**	-0.0185	-0.0996**	-0.196***
	(0.0363)	(0.0363)	(0.0424)	(0.0435)	(0.0456)	(0.0471)
Operating mines	0.0213	-0.0519	-0.201***	-0.210***	-0.227***	-0.260***
	(0.0363)	(0.0364)	(0.0450)	(0.0468)	(0.0484)	(0.0512)
Closed mines	-0.0817*	-0.0158	-0.0263	0.0127	0.0783	0.168**
	(0.0484)	(0.0485)	(0.0596)	(0.0616)	(0.0633)	(0.0665)
Gender (female)		0.0186***		-0.0152**		0.0418***
		(0.00521)		(0.00669)		(0.00664)
Age		-0.00228**		0.000731		0.00262**
		(0.000929)		(0.00118)		(0.00120)
Age^2		5.16e-05***		2.10e-05		3.65e-06
		(1.04e-05)		(1.32e-05)		(1.33e-05)
Employment (employed)		0.00827		-0.000656		0.000824
		(0.00578)		(0.00750)		(0.00742)
Primary education		-0.0658***		-0.0683***		-0.0459***
		(0.00846)		(0.0106)		(0.0109)
Secondary education		-0.177***		-0.235***		-0.137***
		(0.00868)		(0.0109)		(0.0111)
Post-secondary and above		-0.195***		-0.332***		-0.199***
		(0.0122)		(0.0155)		(0.0150)
Household size		0.000479		0.00607***		0.00744***
		(0.00111)		(0.00140)		(0.00133)
Urban		0.105***		0.168***		0.0788***
		(0.00644)		(0.00822)		(0.00824)
Managing the economy		0.186***		0.125***		0.0999***
		(0.00337)		(0.00429)		(0.00440)
Handling jobs		0.109***		0.0466***		0.0283***
		(0.00345)		(0.00437)		(0.00446)
Living conditions		0.0347***		0.00260		0.00855***
		(0.00263)		(0.00328)		(0.00326)
Country econ. conditions		0.0475***		0.0356***		0.0296***
		(0.00262)		(0.00330)		(0.00330)
Discussing politics		-0.00672*		-0.0159***		-0.00782
		(0.00372)		(0.00477)		(0.00478)
Voted last election		-0.00359***		-0.00489***		-0.00476***
		(0.000965)		(0.00113)		(0.00151)
Constant	1.746***	0.769***	2.163***	1.579***	2.357***	1.762***
	(0.150)	(0.147)	(0.152)	(0.153)	(0.142)	(0.146)
Observations	166,216	150,160	106,391	95,374	96,865	86,373
R-squared	0.121	0.190	0.142	0.181	0.137	0.163
District FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls	No	Yes	No	Yes	No	Yes

Note: Standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table .3: Effects of Mining on Trust in Political Parties (Full Estimates)

	Trust in the Ruling Party		Trust in the Opposition	
	(1)	(2)	(1)	(2)
Mining discovery	0.249***	0.192***	-0.205***	-0.214***
	(0.0381)	(0.0367)	(0.0369)	(0.0383)
Operating mines	0.0954**	0.0726**	0.0854**	0.0831**
	(0.0377)	(0.0365)	(0.0363)	(0.0379)
Closed mines	-0.152***	-0.167***	0.257***	0.238***
	(0.0505)	(0.0488)	(0.0487)	(0.0506)
Gender (female)		0.0286***		-0.0617***
		(0.00529)		(0.00549)
Age		0.00252***		0.00184*
		(0.000942)		(0.000981)
Age^2		9.36e-06		-8.93e-06
		(1.06e-05)		(1.10e-05)
Employment (employed)		-0.00947		0.0101*
		(0.00586)		(0.00607)
Primary education		-0.0678***		-0.0396***
		(0.00860)		(0.00892)
Secondary education		-0.190***		-0.0589***
		(0.00886)		(0.00916)
Post-secondary and above		-0.275***		-0.0349***
		(0.0125)		(0.0128)
Household size		0.00169		0.00137
		(0.00113)		(0.00118)
Urban		0.102***		0.0120*
		(0.00655)		(0.00679)
Managing the economy		0.294***		0.00299
		(0.00340)		(0.00352)
Handling jobs		0.137***		0.0245***
		(0.00349)		(0.00362)
Respondent living conditions		0.0156***		0.00440
		(0.00266)		(0.00276)
Country economic conditions		0.0851***		0.00432
		(0.00266)		(0.00276)
Discussing politics		0.000290		0.0461***
		(0.00377)		(0.00391)
Voted last election		-0.00724***		0.000609
		(0.000979)		(0.00106)
Constant	2.053***	0.537***	0.925***	0.806***
	(0.157)	(0.149)	(0.151)	(0.154)
Observations	164,660	148,436	163,526	147,554
R-squared	0.130	0.260	0.064	0.069
District FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Controls	No	Yes	No	Yes

Note: Standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table .4: Ordered Probit Estimates: Effect of Mining Exposure on Trust in Political Institutions (Full Controls)

	President		National Assembly		Court		NEC[1]	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Mining discovery	0.335***	0.278***	0.0488	-0.0107	0.0813**	0.0191	0.278***	0.242***
	(0.0389)	(0.0415)	(0.0384)	(0.0405)	(0.0387)	(0.0407)	(0.0391)	(0.0412)
Operating mines	0.185***	0.142***	0.0372	-0.00089	-0.0842**	-0.0840**	0.172***	0.132***
	(0.0388)	(0.0420)	(0.0379)	(0.0404)	(0.0382)	(0.0404)	(0.0383)	(0.0407)
Closed mines	-0.358***	-0.362***	0.00504	0.0234	0.0288	0.0125	-0.0695	-0.0490
	(0.0517)	(0.0556)	(0.0508)	(0.0538)	(0.0510)	(0.0538)	(0.0515)	(0.0544)
Gender (female)		0.00186		0.00507		0.00825		-0.00693
		(0.00598)		(0.00586)		(0.00580)		(0.00597)
Age		0.00603***		-0.00074		-0.00484***		0.00296***
		(0.00108)		(0.00105)		(0.00104)		(0.00107)
Age^2		-3.60e-06		4.32e-05***		6.80e-05***		4.24e-06
		(1.22e-05)		(1.18e-05)		(1.17e-05)		(1.21e-05)
Employment (employed)		0.0138**		-0.00322		-0.00842		0.00920
		(0.00662)		(0.00649)		(0.00641)		(0.00662)
Primary education		-0.0812***		-0.0824***		-0.0473***		-0.0709***
		(0.00983)		(0.00960)		(0.00950)		(0.00981)
Secondary education		-0.190***		-0.179***		-0.169***		-0.183***
		(0.0101)		(0.00984)		(0.00972)		(0.0100)
Post-secondary and above		-0.251***		-0.203***		-0.160***		-0.198***
		(0.0139)		(0.0137)		(0.0135)		(0.0141)
Household size		0.00287**		-0.00193		-0.00281**		0.00135
		(0.00128)		(0.00124)		(0.00123)		(0.00127)
Urban		0.0920***		0.114***		0.101***		0.0996***
		(0.00739)		(0.00725)		(0.00717)		(0.00740)
Managing the economy		0.372***		0.265***		0.201***		0.261***
		(0.00391)		(0.00379)		(0.00376)		(0.00385)
Handling jobs		0.132***		0.132***		0.106***		0.124***
		(0.00399)		(0.00387)		(0.00385)		(0.00393)
Living conditions (resp.)		0.0206***		0.0249***		0.0176***		0.0237***
		(0.00303)		(0.00296)		(0.00293)		(0.00301)
Current economic condition		0.110***		0.0739***		0.0514***		0.0710***
		(0.00302)		(0.00295)		(0.00293)		(0.00300)
Discussing politics		-0.0204***		0.00301		-0.0157***		0.00682
		(0.00430)		(0.00420)		(0.00415)		(0.00428)
Voted last election		-0.00865***		-0.00358***		-0.00358***		-0.00883***
		(0.00108)		(0.00107)		(0.00106)		(0.00117)
Observations	171,509	153,647	167,281	151,082	170,651	153,516	161,609	146,331
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	No	Yes	No	Yes	No	Yes	No	Yes

Note: Ordered probit estimates. Robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.
[1] NEC = National Electoral Commission.

Table .5: Ordered Probit Results: Mining Exposure and Trust in Local/Traditional/Religious Leaders (Full Controls)

	Local Government		Traditional Leaders		Religious Leaders	
	(1)	(2)	(1)	(2)	(1)	(2)
Mining discovery	0.114***	0.0274	0.105**	-0.0116	-0.104*	-0.232***
	(0.0386)	(0.0407)	(0.0463)	(0.0486)	(0.0546)	(0.0571)
Operating mines	0.0165	-0.0666	-0.221***	-0.238***	-0.294***	-0.345***
	(0.0385)	(0.0407)	(0.0485)	(0.0521)	(0.0572)	(0.0619)
Closed mines	-0.0823	-0.0128	-0.00848	0.0379	0.124*	0.249***
	(0.0514)	(0.0542)	(0.0643)	(0.0685)	(0.0750)	(0.0804)
Gender (female)		0.0214***		-0.0184**		0.0490***
		(0.00585)		(0.00752)		(0.00812)
Age		-0.00272***		0.000345		0.00271*
		(0.00105)		(0.00134)		(0.00149)
Age^2		5.92e-05***		2.92e-05*		9.33e-06
		(1.17e-05)		(1.51e-05)		(1.66e-05)
Employment (employed)		0.00950		-0.00484		-0.000663
		(0.00648)		(0.00838)		(0.00903)
Primary education		-0.0758***		-0.0919***		-0.0741***
		(0.00953)		(0.0122)		(0.0138)
Secondary education		-0.199***		-0.278***		-0.191***
		(0.00977)		(0.0124)		(0.0140)
Post-secondary and above		-0.219***		-0.382***		-0.265***
		(0.0136)		(0.0172)		(0.0182)
Household size		0.000496		0.00731***		0.00949***
		(0.00124)		(0.00160)		(0.00168)
Urban		0.118***		0.188***		0.100***
		(0.00721)		(0.00914)		(0.00997)
Managing the economy		0.210***		0.143***		0.126***
		(0.00380)		(0.00486)		(0.00545)
Handling jobs		0.124***		0.0542***		0.0341***
		(0.00388)		(0.00496)		(0.00553)
Respondent present living cond.		0.0396***		0.00457		0.0110***
		(0.00296)		(0.00369)		(0.00400)
Country economic cond.		0.0532***		0.0386***		0.0353***
		(0.00295)		(0.00371)		(0.00405)
Discussing politics		-0.00785*		-0.0174***		-0.00966*
		(0.00420)		(0.00539)		(0.00587)
Voted last election		-0.00386***		-0.00525***		-0.00521***
		(0.00107)		(0.00124)		(0.00183)
Observations	166,216	150,160	106,391	95,374	96,865	86,373
District FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls	No	Yes	No	Yes	No	Yes

Note: Ordered probit estimations. Robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table .6: Effect of Mining Exposure on Trust in Political Parties (Ordered Probit Estimates)

	Trust in the Ruling Party		Trust in the Opposition	
	(1)	(2)	(1)	(2)
Mining discovery	0.244***	0.207***	-0.217***	-0.229***
	(0.0389)	(0.0413)	(0.0391)	(0.0409)
Operating mines	0.0852**	0.0649	0.0831**	0.0794*
	(0.0386)	(0.0414)	(0.0385)	(0.0405)
Closed mines	-0.143***	-0.174***	0.275***	0.260***
	(0.0516)	(0.0551)	(0.0517)	(0.0541)
Gender (female)		0.0336***		-0.0658***
		(0.00599)		(0.00588)
Age		0.00213**		0.00199*
		(0.00107)		(0.00105)
Age^2		1.86e-05		-1.05e-05
		(1.20e-05)		(1.18e-05)
Employment (employed)		-0.0109*		0.00989
		(0.00663)		(0.00650)
Primary education		-0.0774***		-0.0402***
		(0.00977)		(0.00957)
Secondary education		-0.216***		-0.0577***
		(0.0100)		(0.00982)
Post-secondary and above		-0.316***		-0.0296**
		(0.0141)		(0.0138)
Household size		0.00209		0.00126
		(0.00129)		(0.00126)
Urban		0.116***		0.0131*
		(0.00741)		(0.00728)
Managing the economy		0.329***		0.00405
		(0.00387)		(0.00379)
Handling jobs		0.157***		0.0268***
		(0.00396)		(0.00389)
Living conditions		0.0180***		0.00496*
		(0.00303)		(0.00297)
Country econ. conditions		0.0961***		0.00541*
		(0.00302)		(0.00297)
Discussing politics		0.000153		0.0490***
		(0.00430)		(0.00421)
Voted last election		-0.00841***		0.000775
		(0.00111)		(0.00113)
Observations	164,660	148,436	163,526	147,554
District FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Controls	No	Yes	No	Yes

Note: Ordered probit coefficients reported. Standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table .7: Effect of Mining on Trust in Institutions (with additional Controls)

	President	National Assembly	NEC	Local Gov.	Ruling Party	Opposition	Court of Law	Traditional Leaders	Religious Leaders
Mining discovery	0.259***	0.00497	0.230***	0.0310	0.192***	-0.213***	0.0306	-0.0160	-0.192***
	(0.0360)	(0.0359)	(0.0373)	(0.0365)	(0.0368)	(0.0386)	(0.0364)	(0.0438)	(0.0474)
Operating mines	0.115***	0.00725	0.113***	-0.0487	0.0663*	0.0854**	-0.0594	-0.207***	-0.284***
	(0.0357)	(0.0356)	(0.0369)	(0.0366)	(0.0366)	(0.0382)	(0.0362)	(0.0471)	(0.0517)
Closed mines	-0.386***	-0.0353	-0.0993**	-0.0541	-0.211***	0.235***	-0.0432	-0.0113	0.159**
	(0.0476)	(0.0475)	(0.0494)	(0.0486)	(0.0488)	(0.0510)	(0.0482)	(0.0619)	(0.0668)
Gender (female)	0.00422	0.00909*	-0.00231	0.0246***	0.0307***	-0.0566***	0.0126**	-0.0128*	0.0446***
	(0.00520)	(0.00519)	(0.00544)	(0.00527)	(0.00533)	(0.00556)	(0.00521)	(0.00677)	(0.00673)
Age	0.00498***	-0.00112	0.00235**	-0.00295***	0.00199**	0.00146	-0.00439***	-4.77e-05	0.00192
	(0.000921)	(0.000920)	(0.000967)	(0.000935)	(0.000944)	(0.000989)	(0.000924)	(0.00119)	(0.00121)
Age2	-8.73e-06	3.90e-05***	3.19e-06	5.57e-05***	1.09e-05	-5.50e-06	5.76e-05***	2.52e-05*	7.56e-06
	(1.03e-05)	(1.03e-05)	(1.08e-05)	(1.05e-05)	(1.06e-05)	(1.11e-05)	(1.04e-05)	(1.33e-05)	(1.34e-05)
Employment (employed)	0.0158***	-5.99e-05	0.0121**	0.0112*	-0.00609	0.00399	-0.00436	0.00517	0.000677
	(0.00574)	(0.00573)	(0.00601)	(0.00582)	(0.00588)	(0.00613)	(0.00575)	(0.00756)	(0.00749)
Primary education	-0.0680***	-0.0706***	-0.0656***	-0.0642***	-0.0660***	-0.0460***	-0.0410***	-0.0642***	-0.0467***
	(0.00840)	(0.00845)	(0.00889)	(0.00855)	(0.00867)	(0.00904)	(0.00847)	(0.0107)	(0.0110)
Secondary education	-0.146***	-0.147***	-0.159***	-0.168***	-0.173***	-0.0747***	-0.137***	-0.212***	-0.131***
	(0.00884)	(0.00887)	(0.00930)	(0.00898)	(0.00913)	(0.00950)	(0.00890)	(0.0113)	(0.0115)
Post-secondary and above	-0.180***	-0.162***	-0.158***	-0.182***	-0.244***	-0.0554***	-0.119***	-0.293***	-0.183***
	(0.0125)	(0.0125)	(0.0131)	(0.0126)	(0.0129)	(0.0133)	(0.0125)	(0.0161)	(0.0156)
household size	0.00233**	-0.00142	0.00133	0.000748	0.00193*	0.00115	-0.00234**	0.00647***	0.00730***
	(0.00110)	(0.00109)	(0.00114)	(0.00111)	(0.00114)	(0.00118)	(0.00110)	(0.00140)	(0.00134)
Urban	0.0618***	0.0846***	0.0765***	0.0887***	0.0791***	0.0179**	0.0716***	0.135***	0.0674***
	(0.00664)	(0.00662)	(0.00696)	(0.00671)	(0.00681)	(0.00710)	(0.00665)	(0.00855)	(0.00856)
Managing the economy	0.309***	0.221***	0.223***	0.176***	0.281***	0.00329	0.166***	0.116***	0.0924***
	(0.00333)	(0.00332)	(0.00347)	(0.00339)	(0.00341)	(0.00356)	(0.00334)	(0.00432)	(0.00444)
Handling jobs	0.105***	0.110***	0.105***	0.105***	0.134***	0.0233***	0.0876***	0.0450***	0.0261***
	(0.00340)	(0.00339)	(0.00354)	(0.00346)	(0.00349)	(0.00364)	(0.00341)	(0.00439)	(0.00448)
Respondent present living conditions	0.0142***	0.0187***	0.0172***	0.0323***	0.0139***	0.00336	0.0143***	0.00283	0.00687**
	(0.00261)	(0.00260)	(0.00272)	(0.00265)	(0.00268)	(0.00280)	(0.00262)	(0.00331)	(0.00330)
Country current economic conditions	0.0903***	0.0623***	0.0612***	0.0454***	0.0814***	0.00432	0.0440***	0.0337***	0.0269***
	(0.00260)	(0.00259)	(0.00271)	(0.00263)	(0.00266)	(0.00278)	(0.00260)	(0.00331)	(0.00332)
Discussing politics	-0.0248***	-0.000983	0.000405	-0.0102***	-0.00138	0.0414***	-0.0168***	-0.0137***	-0.00848*
	(0.00374)	(0.00372)	(0.00390)	(0.00379)	(0.00383)	(0.00400)	(0.00374)	(0.00486)	(0.00488)
Voted the last election	-0.00678***	-0.00221**	-0.00670***	-0.00294***	-0.00651***	0.000981	-0.00291***	-0.00450***	-0.00469***
	(0.000958)	(0.000959)	(0.00101)	(0.000968)	(0.000979)	(0.00107)	(0.000959)	(0.00113)	(0.00152)
Freedom of expression	0.135***	0.114***	0.138***	0.0906***	0.126***	-0.00298	0.106***	0.0768***	0.0638***
	(0.00281)	(0.00279)	(0.00292)	(0.00284)	(0.00289)	(0.00301)	(0.00281)	(0.00358)	(0.00358)
Radio news	0.0109***	0.00714***	0.00688***	0.00985***	0.00352*	0.0158***	0.000923	0.0122***	0.0134***
	(0.00188)	(0.00189)	(0.00199)	(0.00192)	(0.00194)	(0.00203)	(0.00189)	(0.00242)	(0.00237)
TV news	-0.0119***	-0.0185***	-0.0153***	-0.0212***	-0.0182***	-0.00108	-0.0190***	-0.0287***	-0.0101***
	(0.00202)	(0.00201)	(0.00211)	(0.00205)	(0.00209)	(0.00218)	(0.00202)	(0.00258)	(0.00257)
Newspapers	-0.0108***	0.00394*	-0.00106	0.00571**	-0.00936***	0.0115***	0.00284	-0.0121***	-0.0108***
	(0.00233)	(0.00232)	(0.00244)	(0.00236)	(0.00239)	(0.00249)	(0.00233)	(0.00310)	(0.00305)
Constant	0.486***	0.420***	0.199	0.543***	0.250*	0.764***	1.108***	1.417***	1.624***
	(0.147)	(0.150)	(0.153)	(0.147)	(0.148)	(0.154)	(0.147)	(0.153)	(0.146)
Observations	151,103	148,762	144,198	147,783	146,115	145,311	151,074	93,894	84,991
R-squared	0.289	0.232	0.225	0.196	0.270	0.070	0.182	0.187	0.167
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. NEC = National Electoral Commission.