

**STAKEHOLDER AWARENESS AND THE EFFECTIVE IMPLEMENTATION OF
COMMUNITY DEVELOPMENT AGREEMENTS (CDAS) IN MINING
COMMUNITIES: EVIDENCE FROM TORO LOCAL GOVERNMENT AREA,
BAUCHI STATE, NIGERIA**

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Abstract

This study examined stakeholders' awareness and the implementation of Community Development Agreements (CDAs) in mining host communities of Toro Local Government Area, Bauchi State, Nigeria. Despite the statutory requirement for CDAs under the Nigerian Minerals and Mining Act (2007), implementation gaps persist, particularly in rural mining communities where limited awareness, elite capture, and weak enforcement mechanisms undermine intended development outcomes. Drawing on Stakeholder Theory and Resource Curse Theory, the study adopted a mixed-methods research design, combining quantitative and qualitative approaches. Data were collected from 73 purposively selected respondents across five mining-affected communities, alongside 10 key informant interviews involving traditional rulers, civil society actors, government officials, and mining representatives. Quantitative data were analysed using descriptive statistics and multiple regression analysis, while qualitative data were subjected to thematic analysis. Descriptive findings revealed low awareness levels, as 37.0% of respondents reported being completely unaware of CDAs, while only 24.7% indicated full awareness. Perceptions of CDA implementation were largely negative, with 45.2% expressing dissatisfaction and only 28.8% reporting satisfaction. Similarly, 52.1% of respondents perceived CDA processes as poorly transparent, and 45.2% were dissatisfied with stakeholder consultation mechanisms. Regression results revealed that socio-demographic variables collectively predict awareness of CDAs ($F(5,66) = 2.467, p < .05$), with the level of education statistically significant. More so, personal review or briefing on CDA contents is the most significant determinant of awareness. Qualitative findings corroborated these results, highlighting issues of elite capture, limited dissemination of CDA documents, exclusion of vulnerable groups (especially women and artisanal miners), and weak institutional coordination. The study concludes that stakeholder awareness is a critical but insufficient condition for effective CDA implementation in mining communities. It recommends strengthened civic education, improved access to CDA documentation, inclusive consultation mechanisms, and enhanced transparency and accountability frameworks to bridge the gap between policy intent and practical implementation.

Keywords: *Community Development Agreements (CDAs), Stakeholder Awareness, Effective implementation, Rural Mining Governance and Toro LGA Nigeria*

1.1 Introduction

Nigeria's mining sector operates under a multi-layered legal and institutional framework designed to optimise resource exploitation while promoting sustainable national development. Among the critical policy mechanisms introduced to manage the social and environmental

impacts of mining, particularly in host communities, is the Community Development Agreement (CDA), established under Section 116 of the Nigerian Minerals and Mining Act (NMMA) of 2007 (Federal Republic of Nigeria, 2007). CDAs are intended to function as contractual obligations between mining companies and their host communities, focusing on social welfare, economic benefits, and environmental management.

Despite the robust legal mandate, the practical implementation of CDAs has faced significant challenges. Studies have noted widespread inconsistencies and ineffectiveness in enforcing CDA provisions across various regions in Nigeria (Oxfam, 2019; Adebayo & Oladele, 2020). In the case of Toro Local Government Area (LGA) of Bauchi State, where several foreign-owned mining companies, including Chinese firms, operate alongside local actors, implementation gaps are particularly evident. Reports highlight concerns about limited community participation, poor monitoring frameworks, and a lack of stakeholder awareness (Suleiman & Jimoh, 2021).

Stakeholder awareness plays a pivotal role in ensuring transparency, accountability, and participatory development in resource governance (Hilson, 2012). In the context of Toro LGA, inadequate knowledge among key local actors, including women, youth, traditional rulers, persons with disabilities, and artisanal miners, has severely constrained their ability to engage effectively with mining companies. When communities lack understanding of their rights and responsibilities under the CDA framework, they are often unable to negotiate equitable terms or monitor compliance effectively (Orji, 2021).

Moreover, regulatory weaknesses, elite capture, and fragmented community structures have further eroded the potential impact of CDAs (Etemiku, 2018). Reports examining mining governance in Nigeria have raised concerns about labour conditions, environmental practices, and corporate accountability among some foreign-owned mining operations, including those operated by Chinese firms (Global Rights, 2020). In contexts where oversight remains limited and community awareness is low, such conditions can increase the vulnerability of host communities. Without focused efforts to build local capacity, enhance legal literacy, and strengthen civic engagement, these communities remain susceptible to systemic marginalisation and socio-economic exclusion.

Toro Local Government Area exemplifies many of these challenges. Although the area is richly endowed with mineral resources and hosts several large-scale mining operations operated by both domestic and foreign investors, host communities often experience limited development benefits, environmental degradation, and poor labour conditions. Research shows that many traditional institutions and community stakeholders in Toro LGA lack the awareness and institutional capacity required to effectively negotiate, monitor, and enforce Community Development Agreements (CDAs). Consequently, the imbalance of power between mining operators and local stakeholders, together with limited knowledge of legal provisions and community rights, continues to undermine the potential of CDAs to support inclusive and sustainable development.

1.2 Statement of the Problem

A key grounding in the Nigerian context is found in policy and analytical reports which highlight that Community Development Agreements are now mandated under the Nigerian Minerals and Mining Act and associated regulations as instruments to transfer socio-economic benefits to host communities. These legal frameworks require mining title holders to negotiate,

execute, and implement CDAs in consultation with host communities before commencing operations. However, enforcement and compliance have historically lagged, and many CDAs are concluded after operations begin, weakening community leverage and awareness of CDA terms and obligations (Centre LSD, 2025).

Empirical insights from official sensitisation interventions in Bauchi State show that stakeholder awareness efforts have focused mainly on formalising mining operations and encouraging compliance with consent and CDA requirements. Government-led workshops and sensitisation meetings involving local officials, traditional leaders, miners, and community representatives emphasise the importance of understanding regulatory compliance, environmental protection, and revenue obligations but often do not systematically measure community comprehension or sustained awareness outcomes (Leadership, 2024). Thus, national observations point to a gap between statutory requirements and actual understanding and practice at community levels constituting a recurring theme that empirical research should probe (Centre LSD, 2025).

Although the Nigerian legal framework prescribes the use of Community Development Agreements (CDAs) as a tool for inclusive development in mining host communities, implementation in Toro Local Government Area has fallen short of expectations. Empirical studies and stakeholder reports consistently indicate that some foreign-owned mining operators, including several Chinese firms, have been associated with weak consultation practices and limited adherence to the social obligations outlined in CDAs (Global Rights, 2020; Suleiman & Jimoh, 2021). These challenges are often compounded by the low awareness and limited bargaining capacity of local stakeholders, including traditional institutions and civil society groups.

This lack of awareness diminishes the community's ability to demand transparency, monitor obligations, or seek redress in cases of corporate default. As a result, the core developmental objectives of CDAs, such as employment generation, infrastructure development, and environmental sustainability, are rarely achieved (Adebayo & Oladele, 2020). The challenges are not merely procedural but structural, stemming from an absence of inclusive platforms and participatory governance mechanisms. Therefore, while prior studies have described CDA challenges nationally, no study has quantified how stakeholder awareness varies demographically and informationally in Toro LGA, nor linked awareness levels to effective implementation outcomes.

1.3 Hypotheses

H0₁: Socio-demographic characteristics (age, gender, marital status, level of education, and primary occupation) have no significant effect on stakeholders' awareness of CDAs in Toro LGA.

H0₂: Direct informational exposure (personal review/briefing, training, and knowledge of stakeholders involved) does not significantly influence awareness of CDAs in Toro LGA.

H0₃: Frequency of stakeholder consultation has no significant effect on awareness of CDAs in Toro LGA.

H0₄: Stakeholder consultation does not significantly influence effective participation in CDA implementation.

1.4 Literature Review

1.4.1 Conceptual Clarification

Community Development Agreements (CDAs) are formal, legally recognised agreements negotiated between mining companies and host communities that define obligations, benefit-sharing arrangements, development commitments, environmental safeguards, and grievance mechanisms associated with mineral exploitation (World Bank, 2012; Otto, 2010). CDAs emerged as governance tools aimed at operationalising the social license to operate, ensuring that extractive projects contribute to sustainable local development while mitigating social conflict (Prno & Slocombe, 2012). They typically outline commitments regarding infrastructure development, employment quotas, local procurement, capacity building, environmental protection, and community participation structures (ICMM, 2015).

In the Nigerian context, CDAs are mandated under Sections 116–118 of the Nigerian Minerals and Mining Act (NMMA, 2007) and further elaborated in the Nigerian Minerals and Mining Regulations (NMMR, 2011). These agreements aim to ensure that host communities receive tangible benefits from resource extraction activities, including improved infrastructure, employment, environmental safeguards, and social services (Eweje, 2006; World Bank, 2010). Freeman (1984) conceptualises stakeholders as individuals or groups who can affect or are affected by organisational objectives. Stakeholders in the CDA ecosystem typically include traditional rulers, youth and women groups, civil society organisations, local government authorities, and artisanal miners. Their awareness of rights and responsibilities under the CDA framework significantly impacts negotiation outcomes, implementation quality, and sustainability of benefits (Boakye et al., 2012; Hilson et al., 2018).

In the context of mineral exploitation, awareness encompasses familiarity with legal provisions, environmental and social safeguards, benefit-sharing arrangements, grievance mechanisms, and monitoring procedures embedded in instruments such as Community Development Agreements (CDAs) (World Bank, 2012; International Council on Mining and Metals [ICMM], 2015). Building on this, stakeholders' awareness in mining environments implies informed engagement capacity, meaning the degree to which host communities, local authorities, civil society actors, and company representatives understand extractive governance processes and can effectively participate in decision-making (O'Faircheallaigh, 2013). When communities are well-informed, they are better equipped to demand accountability, understand corporate obligations, and engage meaningfully in development planning (Owen & Kemp, 2013). Stakeholders' awareness can be said to refer to the extent to which individuals or groups affected by mineral extraction activities possess knowledge, understanding, and critical consciousness of their rights, obligations, entitlements, risks, and participation mechanisms within extractive governance frameworks.

Thus, stakeholder awareness is conceptually linked to effective CDA implementation. An informed and participatory stakeholder base contributes to improved compliance by mining companies, transparency in project execution, and more equitable distribution of mining benefits (Gilberthorpe & Banks, 2012). Therefore, awareness creation is not just a procedural necessity but a cornerstone of participatory governance in mining host communities.

Effective implementation involves translating formal extractive governance instruments such as Community Development Agreements (CDAs) into tangible socio-economic and environmental outcomes for host communities through enforceable, participatory, and accountable governance mechanisms (Poelzer et al., 2023; Nwapi, 2017). It refers to the extent

to which agreements, or regulatory frameworks are executed in accordance with their stated objectives, timelines, standards, and intended outcomes. Within mining sector, effective implementation is assessed through indicators such as timely project delivery, transparency in fund management, fulfilment of agreed development projects, environmental compliance, and measurable improvements in community welfare (ICMM, 2015; World Bank, 2012).

Mining communities refer to geographically defined populations residing in areas directly affected socially, economically, and environmentally by mineral extraction activities. These communities often experience both opportunities and risks associated with extractive projects (Hilson, 2002; World Bank, 2012). Mining communities are central actors in debates about resource governance, equitable benefit-sharing, and sustainable development (Bebbington et al., 2008; Hilson, 2002). Therefore, in the context of mineral exploitation, mining communities constitute the primary socio-spatial units impacted by extraction processes and governance arrangements such as CDAs.

1.4.2. Empirical Review of Similar Studies

Wilson (2024) in a recent study employed a qualitative case study design to examine community development after a CDA between Koidu Limited and the primary host community in Kono District, Sierra Leone. Data were collected through semi-structured interviews with 30 purposively selected participants, including CDC members, traditional leaders, women, and youth representatives. Findings showed that while the community engagement process was instrumental in constituting a Community Development Committee (CDC) and selecting infrastructure, asymmetrical power relations among CDC members inhibited full representation of youth and women's priorities. This indicates that stakeholders' awareness and participation are necessary but not sufficient for equitable implementation when internal governance dynamics are unequal

Hira and Busumtwi-Sam (2021) in another study across three Ghanaian mining sites (Kenyasi, Bogoso/Prestea, Iduapriem/Tarkwa) on Community Benefit Agreements (CBAs) and their effectiveness. Findings emphasised that lack of robust monitoring and truly participatory evaluation systems means many communities remain unaware of the commitments made under CBAs and see inconsistent, uneven, or unmonitored benefit delivery. The study highlights that weak stakeholder awareness and inadequate M&E systems undermine the credibility and perceived legitimacy of agreements, leading to diminished long-term community support.

In a policy action plan review for Malawi's mining sector in 2025, it highlighted that limited community awareness of mining regulations and CDAs is a key underlying barrier to effective implementation. Although not a quantitative empirical study, this commitment document drew on participatory consultations and stakeholder interviews that consistently identified gaps in community understanding of rights, monitoring processes, and financial accountability mechanisms. It also noted how strengthening public access to financial records, legal provisions, and capacity-building can improve stakeholder participation and awareness, an indirect but important empirical insight.

Tor and Gambo (2024) conducted a mixed-methods study on stakeholder engagement in construction projects in Katsina State, Nigeria, using the Katsina Central Market project as a case study. Using purposive sampling and structured questionnaires administered to professional engineers, business owners, political office holders, and community leaders, the study found that stakeholder engagement levels were generally low. Key impediments

identified included poor communication, political influence, dominance by interest groups, and lack of structured interaction mechanisms. These factors were found to undermine awareness and effective stakeholder participation in project implementation.

Anzaku and Amevey (2024) conducted a study on stakeholders' engagement and sustainability of community development projects in Nasarawa State, Nigeria. Using Key Informant Interviews with purposively selected stakeholders including community leaders, women leaders, youth leaders, community development workers, religious leaders, and physically challenged persons, the study found that different levels of participation (part-time and full-time participation) influenced project sustainability. The findings indicated that awareness and continuous stakeholder involvement are critical determinants of sustainable community development outcomes.

While the NMMA (2007) provides a legal foundation for CDAs in Nigeria, enforcement challenges persist due to institutional weaknesses, overlapping mandates, and the exclusion of informal actors such as artisanal miners (Ezekiel & Omoju, 2020). Otto (2017) noted that although CDAs are designed to ensure local development, they are frequently reduced to symbolic gestures, lacking the requisite enforcement mechanisms and stakeholder oversight. In many cases, elite capture and tokenistic community involvement limit the efficacy of CDAs (Wilson, 2019).

Studies from global initiatives such as the Mining, Minerals and Sustainable Development Project (MMSD) and the International Council on Mining and Metals Resource Endowment Initiative (ICMM) highlight the evolution of Community Development Agreements (CDAs) from voluntary corporate social responsibility tools to more formalised mechanisms for promoting sustainable development (ICMM, 2010). However, localised studies in Nigeria, particularly in areas such as Toro Local Government Area, reveal significant implementation gaps. According to the Nigeria Extractive Industries Transparency Initiative (2020), CDAs often fail to deliver on agreed benefits due to poor understanding of their provisions, weak monitoring mechanisms, and governance challenges associated with some foreign-backed mining operations operating in host communities.

Empirical studies using regression analyses in mining communities across Nigeria demonstrate that stakeholder satisfaction with consultation processes and the perceived responsiveness of mining companies significantly shape levels of community trust and perceived transparency in CDA implementation (Ololade & Annegarn, 2013; Aiyepada et al., 2021). Interestingly, the mere frequency of consultations or formal procedural compliance does not automatically translate into higher levels of trust. Rather, the quality of engagement, characterised by awareness, mutual respect, and stakeholder satisfaction, has been identified as a more reliable predictor of effective CDA outcomes (Kemp & Owen, 2013). While traditional institutions remain important actors in community governance, their influence may be constrained by limited familiarity with CDA frameworks and the increasing involvement of foreign-backed mining operations, including Chinese firms, within the sector (Hilson & Potter, 2005).

Quantitative and qualitative analyses of stakeholder perspectives have underscored a strong correlation between effective CDA implementation and the degree of community involvement in monitoring and decision-making processes (Orji, 2021). Interestingly, the frequency of company-host community consultations, in itself, has shown minimal impact unless accompanied by genuine stakeholder empowerment and satisfaction. Orji (2021), in his study on stakeholder participation and Community Development Agreements in Nigeria's extractive

sector reinforces the conclusion that meaningful awareness, legal empowerment, and participatory frameworks are critical to realising the intended benefits of CDAs.

There is limited empirical data to quantify awareness variations across community segments, mining companies, government bodies, or NGOs as most reports are policy briefs, legal analyses, or descriptive news summaries. Therefore, much of the literature on the Community Development Agreement (CDA) framework focuses primarily on national policy discussions and broad regulatory structures. Only a limited number of studies examine how these frameworks operate within specific mining contexts, such as those found in Bauchi State or its constituent Local Government Areas. Even where regional or state-level policies are referenced, little attention is given to how these policies translate into awareness or understanding among local stakeholders. As a result, there is a clear gap in the literature regarding stakeholder awareness and engagement outcomes in mining host communities, particularly in areas such as Toro LGA.

1.4.3 Theoretical Framework

This study draws on Stakeholder Theory, originally developed by Freeman (1984), which posits that organisations must account for the interests of all stakeholders affected by their activities. The theory emphasises that organisations must consider all groups affected by their actions. In mining governance, this includes communities, traditional leaders, government, and civil society, especially through Community Development Agreements (CDAs). The theory shaped the hypotheses by assuming that stakeholder engagement influences awareness levels. Thus, socio-demographic factors, consultation frequency, and informational exposure were tested as determinants of CDA awareness.

This theoretical stance also complements the Resource Curse Theory, which holds that without robust governance and stakeholder engagement, mineral wealth often exacerbates poverty, corruption, and social exclusion (Auty, 2001; Ross, 2012). This theory informed the hypotheses by linking low awareness and weak participation to poor governance outcomes in mining communities. It also shaped measurement by focusing on variables that reflect governance quality—such as access to information, training, consultation, and knowledge of CDA processes. The intersection of these theories supports the argument that meaningful stakeholder awareness and engagement are prerequisites for transforming mineral wealth into sustainable development outcomes.

1.5 Methodology

1.5.1 Study Area Description

This study was conducted in Toro Local Government Area, located in the northern part of Bauchi State in North-East Nigeria. Toro LGA lies approximately between latitude 10°00'N and 10°45'N and longitude 8°45'E and 9°30'E. The area shares boundaries with Jos North and Jos East Local Government Areas of Plateau State to the west, while other parts are bordered by Bauchi and Tafawa Balewa LGAs. Toro serves as one of the major solid mineral-producing areas in Bauchi State and is characterised by extensive deposits of tin, columbite, tantalite, wolframite, and other strategic minerals exploited by both artisanal and licensed mining operators. Communities within Toro LGA, such as Gimbi, Kulfana, Pingel, Rishi, and Zalau, have increasingly become central to discussions surrounding the implementation of Community Development Agreements (CDAs). This attention stems from growing concerns

about environmental degradation, socio-economic pressures, and rising calls for greater stakeholder engagement and transparency in mining governance.

1.5.2 Research Design

The study employed a mixed-methods approach, combining both quantitative and qualitative data to provide a comprehensive assessment of stakeholder awareness and its effect on CDA implementation. This approach enabled triangulation of findings and enhanced the validity and reliability of results.

1.5.3 Population and Sampling Techniques

The target population for this study comprised a wide range of stakeholders in mining host communities, including: Traditional rulers, Community leaders, Women groups, Youth groups, Artisanal miners, Persons with disabilities, Local traders, Civil society Organisations (CSOs), Government officials, and Security personnel.

A purposive sampling technique was adopted to select 73 respondents from the five key mining-affected communities in Toro LGA. The five mining-affected communities namely Gimbi, Kulfana, Pingel, Rishi, and Zalau. These communities were purposively selected based on three criteria: the intensity and duration of mining activities within the communities; the presence or reported existence of Community Development Agreements (CDAs) or related community-company engagements; and evidence of recurring community concerns relating to environmental degradation, labour conditions, land use conflicts, and stakeholder participation in mining governance. These communities were also selected because they host both artisanal and foreign-backed mining operations, thereby providing suitable contexts for examining stakeholder awareness and the implementation of CDAs.

The target population for the study comprised stakeholders directly or indirectly affected by mining activities in Toro LGA. These included traditional rulers, community leaders, women groups, youth representatives, artisanal miners, local traders, civil society organisations (CSOs), government officials, security personnel, and other residents of mining host communities.

A purposive sampling technique was employed because the study specifically targeted respondents with prior knowledge, experience, or involvement in mining activities and Community Development Agreements (CDAs). Purposive sampling was considered suitable for identifying information-rich participants capable of providing relevant data concerning stakeholder awareness and mining governance.

In addition, 10 key informants were selected for in-depth interviews. These included:

- ✓ 2 traditional rulers,
- ✓ 2 community leaders,
- ✓ 2 government officials from mining-related agencies,
- ✓ 1 representative of a mining company,
- ✓ 1 civil society representative,
- ✓ 1 media practitioner, and
- ✓ 1 leader of artisanal miners.

The key informants were selected based on their positions, experience, and direct involvement in mining governance, community relations, or CDA implementation processes within Toro LGA.

1.5.4 Data Collection Instruments

To capture a comprehensive range of perspectives, multiple data collection tools were used:

- ✓ *Structured Questionnaires*: Administered to the 73 selected community respondents to gather quantitative data on stakeholders' awareness, consultation frequency, satisfaction with CDA implementation, and perceptions of transparency and compliance.
- ✓ *Key Informant Interviews (KIIs)*: Semi-structured interviews with 10 selected stakeholders to obtain qualitative insights into the challenges, gaps, and enabling factors for effective CDA implementation.
- ✓ *Document Review*: Relevant literature such as government reports, legal frameworks (e.g., the Nigerian Minerals and Mining Act, 2007), and CDA-related regulatory guidelines were reviewed to provide a contextual background and supplement empirical findings. The type of information extracted include: Legal definition and structure of Community Development Agreements (CDAs); statutory obligations of mining companies; Required content of CDAs (employment, infrastructure, environment, etc.); institutional roles of government, companies, and communities; enforcement expectations and compliance benchmarks; and governance and transparency standards in extractive industries

1.5.5 Data Analysis Methods

- ✓ *Quantitative Data*: Responses from the questionnaires were analysed using descriptive statistics (mean, frequency, percentage) and inferential statistics such as multiple regression analysis to determine the relationship between stakeholder awareness and perceived transparency in CDA implementation.
- ✓ *Qualitative Data*: Thematic analysis was employed to analyse transcripts from the KIIs. Emerging themes included issues of weak stakeholder engagement, elite capture of CDAs, exclusion of vulnerable groups, and the need for capacity building among traditional rulers.
- ✓ *Triangulation*: Data from questionnaires, interviews, and document review were triangulated to ensure consistency and to reinforce the credibility and depth of the findings

1.6 Results and Discussion

This section presents the empirical findings of the study, beginning with the socio-demographic characteristics of respondents to establish their background profile. It then examines levels of awareness, implementation, transparency, and satisfaction regarding Community Development Agreements (CDAs) in the study area. Finally, regression analyses are presented to identify the socio-demographic and institutional factors influencing awareness of CDAs. Together, these results provide a comprehensive basis for interpreting how CDAs function in mining communities of Toro LGA.

Table 1: Socio-Demographic Characteristics of Respondents

Source: Field work (2025)

Variable	Category	Frequency	Percent
Age	18–25	7	9.6
	26–35	15	20.5
	36–45	24	32.9
	46–55	16	21.9
	56–65	7	9.6
	65+	4	5.5
Gender	Male	64	87.7
	Female	9	12.3
Marital Status	Single	9	12.3
	Divorced	4	5.5
	Married	60	82.2
Education Level	No formal education	5	6.8
	Islamic education	29	39.7
	Primary education	13	17.8
	Secondary education	9	12.3
	Tertiary education	17	23.3
Primary Occupation	Farming	9	12.3
	Trading	16	21.9
	Civil service	4	5.5
	Artisan (Miner)	33	60.3
Total		73	100.0

The socio-demographic data in Table 1 show that respondents are mainly middle-aged, male, married, moderately educated, and largely engaged in artisanal mining, shaping their exposure to Community Development Agreements (CDAs) in Toro LGA.

Age distribution indicates a concentration in the active working group, especially 36–45 years (32.9%), followed by 46–55 years (21.9%) and 26–35 years (20.5%), suggesting that CDA awareness is mainly among economically active adults directly involved in mining activities.

Gender composition is highly skewed toward males (87.7%), reflecting the male-dominated nature of mining in the area, while limited female participation (12.3%) points to structural and cultural exclusion from mining governance and CDA processes.

Marital status shows most respondents are married (82.2%), indicating a stable, community-embedded population likely concerned with development outcomes such as employment and infrastructure.

Education levels are mixed but generally low to moderate, with a large share holding Islamic education (39.7%) and only 23.3% attaining tertiary education. This uneven literacy pattern likely affects understanding of CDA provisions and aligns with the finding that education strongly predicts awareness.

Occupational structure is dominated by artisanal miners (60.3%), followed by traders (21.9%) and farmers (12.3%), confirming that respondents are closely tied to mining livelihoods but may lack formal inclusion in governance structures.

Overall, the profile suggests that CDA awareness is shaped by a predominantly male, mining-dependent, moderately educated population, with significant gender and educational disparities that limit inclusive participation.

Table 2: Awareness, Implementation, Transparency, and Satisfaction with Community Development Agreements (CDAs)

Source: Field work (2025)

Variable	Response Category	Frequency	Percent (%)
Awareness of CDAs existence	Completely unaware	27	37.0
	Heard of them but not sure if they exist	9	12.3
	Aware but unaware of details	19	26.0
	Fully aware and knowledgeable	18	24.7
Awareness of CDA projects/initiatives	Yes, several projects	4	5.5
	Yes, a few projects	48	65.8
	No, not noticed any	11	15.1
	Not sure	10	13.7
Satisfaction with CDA project implementation	Satisfied	21	28.8
	Neutral	19	26.0
	Dissatisfied	30	41.1
	Extremely dissatisfied	3	4.1
Perception of transparency in CDA processes	Very transparent	8	11.0
	Somewhat transparent	27	37.0
	Not very transparent	27	37.0
	Completely opaque	11	15.1
Satisfaction with consultation/engagement	Highly satisfied	6	8.2
	Moderately satisfied	21	28.8
	Neutral	13	17.8
	Dissatisfied	33	45.2

The findings in Table 2 reveal generally low awareness, weak implementation outcomes, poor transparency, and low stakeholder satisfaction regarding Community Development Agreements (CDAs) in mining communities of Toro LGA.

Awareness levels are uneven and largely insufficient. While 24.7% of respondents are fully aware of CDAs and 26.0% partially aware, a larger proportion (37.0%) are completely unaware. An additional 12.3% have only heard of CDAs without clarity on their existence. This indicates a major information gap. Awareness of CDA projects is also limited, with 65.8%

reporting only a few visible projects, 15.1% seeing none, and just 5.5% acknowledging several projects, suggesting weak dissemination and uneven implementation.

Satisfaction with CDA implementation is generally low. Only 28.8% are satisfied, while 45.2% are dissatisfied and 4.1% extremely dissatisfied. A further 26.0% are neutral. This reflects a perceived gap between CDA objectives and actual community outcomes in terms of development benefits.

Perceptions of transparency are mixed but lean negative, with 37.0% viewing processes as not very transparent and 15.1% as completely opaque. Overall, 52.1% perceive weak transparency. Similarly, stakeholder engagement is poorly rated, as 45.2% are dissatisfied with consultation processes, while only 8.2% are highly satisfied. This suggests limited inclusiveness in decision-making.

The findings indicate that CDAs in Toro LGA are weakly implemented participatory tools, characterized by poor awareness, limited transparency, and low stakeholder satisfaction. These results align with literature on elite capture and weak institutional communication in mining governance, reinforcing the need for improved information dissemination, transparency, and inclusive engagement mechanisms.

Table 3: Regression Analysis Predicting Awareness of CDAs

Predictor Variables	B	Std. Error	Beta	t	Sig.	95% CI (Lower)	95% CI (Upper)	Tolerance	VIF
(Constant)	1.062	1.233	–	0.861	.392	-1.400	3.524	–	–
Age	.296	.160	.242	1.847	.069	-.024	.616	.745	1.343
Gender	-.161	.550	-.034	-.293	.771	-1.259	.937	.959	1.043
Marital Status	-.229	.302	-.099	-.757	.452	-.833	.375	.751	1.332
Level of Education	.356	.124	.326	2.861	.006*	.108	.604	.983	1.017
Primary Occupation	-.003	.138	-.002	-.020	.984	-.278	.273	.980	1.021
R	R ²	Adjusted R ²	Std. Error	F	df1	df2	Sig. F	Durbin-Watson	
.397	.157	.094	1.51109	2.467	5	66	.041*	2.076	

Source: Field work (2025)

Table 3 examined the influence of selected socio-demographic characteristics (age, gender, marital status, level of education, and primary occupation) on awareness of Community Development Agreements (CDAs) between mining title holders and host communities in Toro LGA. The regression results provide important empirical insights into the determinants of CDA awareness.

The regression model was statistically significant ($F(5, 66) = 2.467, p = 0.041$), indicating that the combined socio-demographic variables significantly predict awareness of CDAs. However, the explanatory power of the model was modest ($R^2 = 0.157$; Adjusted $R^2 = 0.094$), suggesting that these variables account for only a small proportion of the variation in awareness levels of communities in Toro LGA. This implies that while demographic factors have some predictive value, other contextual or institutional factors likely play a more substantial role in shaping awareness of CDAs in the LGA.

Level of education emerged as the only statistically significant predictor of awareness ($\beta = 0.326, p = 0.006$). The positive coefficient indicates that higher educational attainment is associated with increased awareness of CDAs. Substantively, this suggests that educated individuals are more likely to access, understand, and engage with information relating to mining agreements and community rights. This finding underscores the role of education as a critical enabler of civic awareness and participatory governance. Individuals with higher education levels may possess better information-processing skills, greater exposure to media and formal communication channels, and enhanced capacity to interpret legal or policy documents such as CDAs.

Age showed a positive but marginally insignificant relationship with awareness ($\beta = 0.242, p = 0.069$). Although not significant at the 5% level, the result suggests a tendency for older respondents to exhibit higher awareness of CDAs. This may reflect longer duration of residence, greater involvement in community affairs, or increased exposure to mining-related engagements over time.

Gender ($p = 0.771$), marital status ($p = 0.452$), and primary occupation ($p = 0.984$) were not statistically significant predictors of awareness. These findings indicate that awareness of CDAs does not meaningfully differ across male and female respondents, marital categories, or occupational groups. Although gender was not statistically significant in predicting awareness, qualitative evidence pointed to practical barriers limiting women's participation in mining discussions. Women miners were reportedly unaware of CDA provisions, prompting calls for inclusive sensitisation initiatives. This apparent discrepancy suggests that gender disparities may operate indirectly through differential access to informational platforms rather than through gender identity per se. In terms of occupation, the qualitative insights shows that though many respondents are directly involved in mining activities, participants reported exclusion from managerial roles and decision-making processes. Management positions were frequently described as reserved for foreign personnel, limiting opportunities for skill transfer and knowledge sharing on mining processes as well as CDAs.

Qualitative evidence corroborates this interpretation. Participants repeatedly highlighted limited understanding of CDA provisions and insufficient exposure to structured sensitisation. Several contributors noted that communities had historically lacked the knowledge necessary to negotiate effectively or monitor compliance. The expressed surprise at widespread unawareness, particularly among women miners, reinforces the conclusion that awareness deficits are closely linked to informational and educational gaps.

The findings suggest that educational attainment plays a central role in shaping awareness of CDAs. This has important implications for development of mining communities especially in rural areas. If awareness is concentrated among the more educated segment of the population, less educated community members may be excluded from meaningful engagement in negotiation, monitoring, and benefit-sharing processes.

Table 4: Regression Analysis Predicting Awareness of CDAs in Toro LGA

Predictor Variables	B	Std. Error	Beta (β)	t	Sig.	Tolerance	VIF
Constant	2.930	0.773	—	3.790	.000	—	—
Had Knowledge of stakeholders involved in CDAs	-0.686	0.319	-0.198	-2.148	.035*	0.841	1.189
Has Personally reviewed / briefed on CDA contents	0.804	0.117	0.652	6.874	.000***	0.797	1.254
Has Received training/information on CDAs	-0.597	0.310	-0.175	-1.924	.059	0.870	1.150
Frequent consultation by stakeholders	-0.097	0.119	-0.071	-0.818	.416	0.956	1.046
R	R ²	Adjusted R ²	Std. Error	F (4, 68)	Sig.	Durbin–Watson	
0.716	0.513	0.484	1.13263	17.886	.000	1.994	

Source: Field work (2025)

*** **Dependent Variable:** Awareness of the existence of Community Development Agreements (CDAs) between Mining Title Holders and the community

Table 2 examined the predictors of community awareness of the existence of Community Development Agreements (CDAs) between mining title holders and host communities in Toro Local Government Area. Specifically, the model assessed whether participants had knowledge of the involvement of stakeholders in CDAs, personal review/briefing on CDA contents, receipt of training/information, and frequent stakeholder consultation significantly predict awareness of CDAs.

The regression model produced a strong and statistically significant fit ($R = .716$; $R^2 = .513$; Adjusted $R^2 = .484$; $F(4, 68) = 17.886$, $p < .001$). The R^2 value of .513 indicates that approximately 51.3% of the variance in awareness of CDAs is explained by the four predictor variables collectively. The statistically significant F-change ($p = .000$) confirms that the combination of predictors provides a significantly better explanation of awareness than a model without predictors. This indicates that stakeholder engagement and information-related variables are meaningful determinants of CDA awareness in Toro LGA.

Although the overall model is statistically significant, the relative contribution of individual predictors varies considerably. The strongest and most statistically significant predictor of awareness is whether respondents have personally reviewed or been briefed on the contents of

CDAs ($B = .804$, $\beta = .652$, $t = 6.874$, $p < .001$). The positive unstandardised coefficient indicates that increased exposure to CDA documents or briefings significantly increases awareness levels. The standardised beta coefficient (.652) shows that this variable makes the largest unique contribution to the model.

Knowledge of who or which stakeholders are involved in CDAs also significantly predicts awareness ($B = -.686$, $\beta = -.198$, $t = -2.148$, $p = .035$). Although statistically significant, the standardised beta indicates a moderate effect size compared to the briefing variable. The negative sign of the coefficient suggests that respondents who understand the stakeholder composition of CDAs are more likely to be aware of their existence. A recurring theme in the qualitative evidence was the allegation of elite capture, including bribery of traditional leaders and divide-and-rule tactics by mining companies. Participants described situations in which local leadership structures were allegedly compromised, leading to non-compliance with CDA provisions and restricted access to information. Understanding who negotiates, approves, and monitors CDAs appears to increase awareness of their existence. Where decision-making processes are monopolised by a small group of actors, broader community members remain uninformed. Elite gatekeeping thus emerges as a critical mechanism influencing awareness disparities. Awareness deficits may not merely reflect passive informational gaps but may also stem from deliberate control over information flows.

Receipt of training or information shows a marginally non-significant effect ($B = -.597$, $\beta = -.175$, $t = -1.924$, $p = .059$). The frequency with which stakeholders are consulted or updated does not significantly predict awareness ($B = -.097$, $\beta = -.071$, $t = -.818$, $p = .416$). It suggests that consultation frequency alone does not guarantee awareness of CDAs. This may imply that consultation processes are either superficial, limited to select elites, poorly communicated, or not structured to explicitly inform broader community members about the existence of formal agreements.

Qualitative accounts provide strong support for this result. Participants described significant communication gaps in the mining sector, limited media dissemination, and inadequate public briefing mechanisms. While consultations between stakeholders may occur, they often do not translate into widespread dissemination of CDA documents or meaningful explanation of their contents to community members.

Importantly, the non-significance of consultation frequency in the regression analysis aligns with these narratives. Consultation processes, when superficial or elite-driven, do not necessarily generate community-wide awareness. This suggests that awareness requires structured, document-based engagement rather than symbolic participation. Direct exposure to CDA documentation reduces information asymmetry, enhances transparency, and empowers community members to recognise and assert their rights.

The findings underscore the primacy of direct informational exposure in enhancing community awareness of CDAs. Consistent with participatory governance and transparency frameworks, the results demonstrate that awareness is most strongly driven by direct access to documentation and structured briefings rather than general consultation frequency.

The qualitative data revealed persistent concerns regarding the disconnect between federal and state authorities in mining governance. Participants cited overlapping mandates, weak enforcement mechanisms, and limited accountability structures. These institutional weaknesses create environments in which information flows are fragmented and poorly coordinated.

The findings align with prior research highlighting the inadequacy of stakeholder engagement in mining CDAs across Nigeria and other developing countries. Studies by Albert et al. (2020) and Chindo (2011) emphasised that most CDAs are negotiated without genuine community participation, often excluding women, youth, and marginalised groups. Our results support this, as respondents noted limited meaningful consultation, and satisfaction with engagement was only marginally linked to transparency.

Although Nigeria's Minerals and Mining Act mandates CDAs, its poor enforcement and the lack of standardised implementation procedures have led to inconsistent compliance. As highlighted in the NEITI 2020 study and the works of Babatunde (2012), many mining companies operate without signing CDAs or disregard their terms, especially in areas like Toro LGA where regulatory oversight is weak and traditional leaders have limited capacity to enforce agreements.

The situation in Toro LGA reflects global trends noted in the MMSD project (2000–2002) and World Bank reports, which stress that stakeholder inclusion, benefit sharing, and long-term impact monitoring are critical for sustainable mining. However, in practice, as the qualitative interviews and survey responses suggest, traditional rulers and other community stakeholders are often unaware of their rights or the content of CDAs, limiting their ability to advocate for proper implementation.

1.7 Conclusion and Recommendations

This study revealed a persistent disconnect between the formal existence of CDAs and their practical implementation, which remains weak, inconsistent, and largely symbolic. Overall awareness of CDAs is low, particularly among less educated and vulnerable groups, limiting meaningful engagement in mining governance processes. Empirical findings showed that direct informational exposure especially personal briefing or review of CDA contents significantly enhances awareness, whereas the frequency of consultations does not translate into improved understanding or participation. Qualitative evidence further highlights systemic barriers such as elite capture, inadequate information dissemination, weak institutional coordination, and the exclusion of women, youth, and artisanal miners.

The study therefore identifies a clear gap between stakeholder awareness and effective CDA implementation: awareness does not automatically lead to participation, accountability, or enforcement. This disconnect enables elite-driven and procedural implementation, undermining the developmental objectives of CDAs in mining host communities in Toro Local Government Area.

Based on the findings, the following recommendations are proposed:

- i. Mining companies, local authorities, and regulatory agencies should prioritise structured civic education through community sensitisation, local language translations of CDA documents, and use of accessible media such as radio and town halls to help bridge the awareness gap across educational levels.
- ii. Mining companies and regulators must ensure direct access to CDA contents by providing simplified summaries, regular public briefings, and community-based information centres, since personal exposure to CDA documents is the strongest driver of awareness.
- iii. Transparency should be enhanced through public reporting systems, independent audits, and community monitoring tools that track CDA projects and outcomes.

- iv. Consultation processes should be redesigned to be more participatory and interactive, supported by capacity-building and standardised training to ensure that engagement translates into real understanding and empowerment.
- v. Lastly, government agencies, mining regulators, and civil society organisations should establish clear guidelines to regulate the composition and operation of Community Development Committees to reduce elite capture by ensuring inclusive representation of women, youth, and artisanal miners.

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