



CONFLICT MANAGEMENT STRATEGIES BETWEEN EXTRACTIVE COMPANIES IN THE MINING AND PALM OIL SECTORS AND LOCAL COMMUNITIES IN INDONESIA: A BIBLIOMETRIC ANALYSIS

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ABSTRACT

Conflicts between extractive companies—particularly in the mining and palm oil sectors—and local communities in Indonesia represent a complex and enduring structural phenomenon. This study aims to identify and map scientific trends related to conflict management strategies in this context through a bibliometric approach. Data were collected from the Scopus database using selected keywords, covering publications from 2000 to 2024. The analysis was conducted using VOSviewer software, focusing on keyword mapping, publication productivity, and networks of author and institutional collaboration. The results revealed three major clusters in the literature: (1) social conflict and conflict management models, (2) sustainability dimensions and corporate social responsibility (CSR), and (3) stakeholder engagement and governance complexity. These findings underscore the importance of a multidimensional approach to understanding conflicts in the extractive sector and highlight a shift in academic focus toward community participation and value-based conflict resolution models. This study contributes to the mapping of scientific knowledge and offers strategic references for policymakers and industry practitioners in designing fair and sustainable conflict resolution approaches.

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1. INTRODUCTION

Conflicts between extractive companies and local communities have become a deeply rooted structural phenomenon. According to a report by the Agrarian Reform Consortium (KPA), in 2022 there were 212 agrarian conflicts in Indonesia, covering the plantation sector (50%), mining (21%), and forestry (9%) (KPA, 2023). These conflicts highlight the ongoing tensions between large corporations and local communities, particularly related to land control, environmental degradation, and social injustice [1], [2], [3]. The conflict between mining and plantation companies and local communities in Indonesia has become a complex and persistent social issue. Investment growth in the extractive sector—such as mining and oil palm plantations—has contributed to economic development but has also triggered social tensions, particularly around land rights, environmental damage, and socio-economic inequality [4], [5]. The imbalance between economic interests and the rights of local communities lies at the core of the problem.

In many cases, companies operate under formal legal permits such as Mining Business Permits (IUP) or Plantation Business Use Rights (HGU), while local communities base their land claims on customary rights,

traditional use, and historical control not officially recorded. This legal mismatch often exacerbates conflict, especially when formal dispute resolution mechanisms fail to accommodate community rights [6]. Conflicts in the extractive sector are often worsened by a lack of transparency and community participation in decision-making processes. In many cases, communities are not granted the opportunity to give their consent based on the Free, Prior and Informed Consent (FPIC) principle, as mandated by various international human rights and sustainability standards [7]. As a result, extractive projects are frequently perceived as land grabbing, further deepening social and ecological injustice.

According to Robbins, conflict management is a series of efforts designed to minimize the negative impacts of conflict while optimizing its positive potential, aiming to improve learning processes and organizational effectiveness. This conflict phenomenon reflects classical conflict theory as proposed by Lewis A. Coser, who emphasized that conflict is an integral part of social dynamics, functioning to reveal structural imbalances and serve as a vehicle for social change [8]. Ralf Dahrendorf also noted that in modern societies, conflict is inevitable as a result of unequal power distribution

In practice, corporate responses to conflict do not always align with principles of social justice or sustainability. Some companies choose litigation to defend the legality of their concessions, including the use of criminal charges against community leaders or environmental activists deemed to disrupt operations. This strategy often intensifies conflict and creates horizontal tensions within communities [1]. Additionally, some companies pursue civil lawsuits against community land claims or face class actions from affected groups. However, legal channels often require lengthy processes, high costs, and outcomes that do not always favor communities with limited access to legal support or formal documentation.

Conversely, some companies have begun to adopt more dialogical, participatory, and locally grounded approaches as part of their conflict management strategies. In regions such as Sulawesi and Kalimantan, mining companies have facilitated multi-stakeholder forums for negotiations and grievance resolution, even involving customary leaders as key mediators [4]. The presence of NGOs and religious institutions has also strengthened non-litigious pathways, such as community-based mediation, legal standing, and facilitation through the "Sahabat Peradilan" (Friends of Justice) approach [2]. These approaches emphasize social reconciliation, recognition of local norms, and restorative justice principles—and have proven to be more effective in building long-term, constructive relationships between companies and communities.

2. RESEARCH METHODS

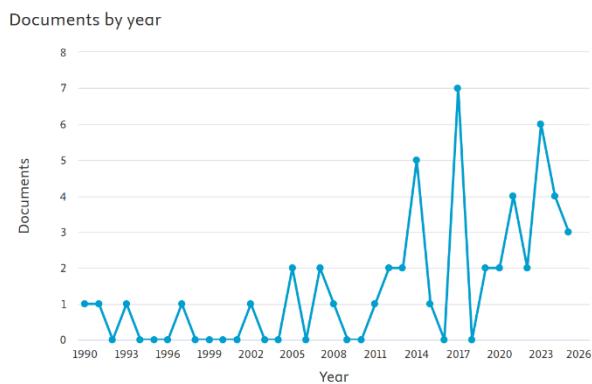
This study employs a quantitative approach through bibliometric analysis to identify and map research trends related to conflict management strategies between local communities and mining companies. Bibliometric analysis involves various mathematical and statistical methods to evaluate bibliometric data [9]. The purpose of this analysis is to uncover the dynamics of the topic, key actors, and dominant themes in scientific publications. Bibliometric data were collected from the Scopus database due to its broad and credible coverage of international scientific journals. The data collection process involved the use of keywords such as: "conflict management"; "mining"; "community"; and "agrarian conflict". Filters were applied to the title, abstract, and keyword fields (TITLE-ABS-KEY) for publications ranging from the year 2000 to 2024. The search results were exported in CSV format from Scopus for further processing. The bibliometric analysis was conducted using VOSviewer software (version 1.6.18).

The study was carried out in three main stages. The first stage involved identifying the scope of the study, during which the researchers defined the topic and analytical coverage by selecting relevant keywords and ensuring a sufficient number of documents (≥ 200 publications) to ensure the validity of the analysis. The second stage was the collection of bibliometric data, which was performed by extracting data from the Scopus database in CSV format using selected keywords focused on sustainability in oil and gas production. The third stage involved data analysis, which included performance analysis to evaluate publication and citation productivity, science mapping to explore relationships among keywords and other attributes, and network analysis using VOSviewer to visualize thematic connections and identify major clusters within the analyzed literature.

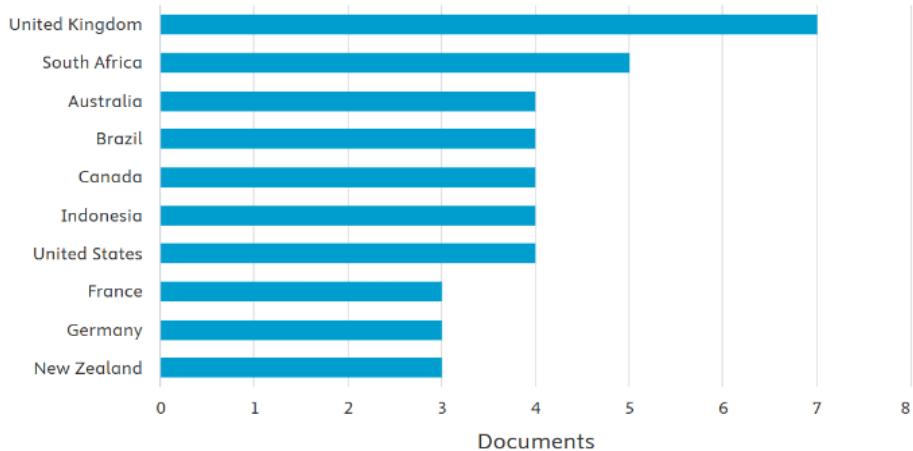
3. RESULT AND ANALYSIS

3.1. Bibliometric data

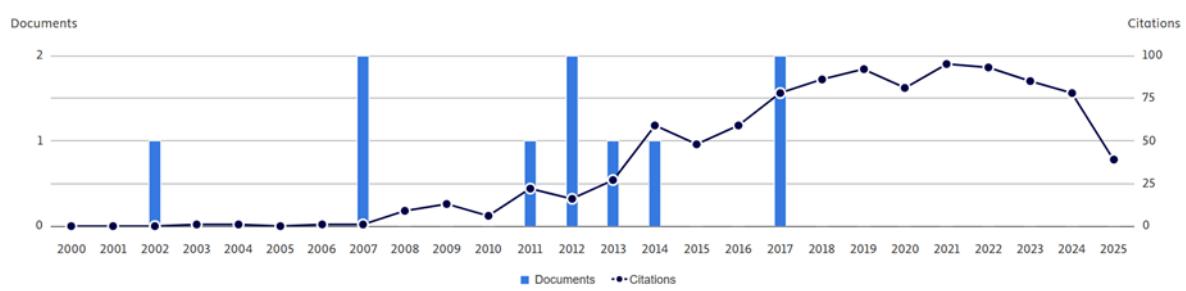
The process of searching, measuring, and analyzing research data was conducted through the Scopus website at <https://www.scopus.com>. The search focused on research articles using the keywords: (TITLE-ABS-KEY (model OR strategy)) AND (TITLE-ABS-KEY (conflict AND resolution)) OR (TITLE-ABS-KEY (conflict AND management)) AND (TITLE-ABS-KEY (mining)) AND (TITLE-ABS-KEY (local AND community)).

**Fig. 1** Document by year

The "Documents by Year" graph shows the trend in the number of publications related to conflict management between extractive companies and local communities from 1990 to 2025. A significant increase is observed after 2012, with the highest peak in 2017 (7 documents) and a new surge in 2023–2024, reflecting growing academic interest in this issue over the past decade.

**Fig. 2** Document by Countries

The number of documents originating from various countries on the topic of conflict management between extractive companies and local communities indicates that the United Kingdom ranks the highest with 7 documents, followed by South Africa with 5 documents. Australia, Brazil, Canada, Indonesia, and the United States each have 4 documents, while France, Germany, and New Zealand contributed 3 documents each. This suggests that countries with strong extractive sectors are actively engaged in research on community conflict issues.

**Fig. 3** Annual publication growth of bibliometric papers from 2000 to 2025.

This graph illustrates the trend in the number of documents and citations per year from 2000 to 2025. The number of documents (represented by blue bars) appears sporadic, with peaks in 2007, 2012, and 2016—each producing two documents. Meanwhile, the number of citations (represented by the dotted line) shows a consistently increasing trend since 2010, reaching a peak around 2019–2021 with nearly 100 citations per year, then declining after 2023. This indicates that although the number of publications is not always high, their influence or impact on academic literature has continued to grow in recent years.

Table 2. Most Cited Articles on Conflict Management Strategies Between Extractive Companies in the Mining and Palm Oil Sectors and Local Communities in Indonesia

Document Title	Authors	Publication Year	ISSN	Journal Title	Journal h-index	Total Citations
An overview of land use conflicts in mining communities	Hilson, Gavin R.	2002	02648377	Land Use Policy	171	376
'Farming miners' or 'mining farmers'?: Diamond mining and rural development in post-conflict Sierra Leone	Maconachie, R., Binns, T.	2007	07430167	Journal of Rural Studies	146	181
Corporate social responsibility in the mining industry: Perspectives from stakeholder groups in Argentina	Mutti, D., Yakovleva, N., Vazquez, Brust, D., Di Marco, M.H.	2012	03014207	Resources Policy	138	149
Community mining consultations in Latin America (2002–2012): The contested emergence of a hybrid institution for participation	Walter, M., Urkidi, L.	2017	00167185	Geoforum	151	113
A systems-based conceptual framework for assessing the determinants of a social license to operate in the mining industry	Prino, J., Slocombe, D.S.	2014	0364152X	Environmental Management	148	110
Re-agrarianising livelihoods in post-conflict Sierra Leone?	Maconachie, R.	2011	10991328	Journal of International Development	83	91
Mineral wealth and rural change in artisanal and small-scale mining communities						

Document Title	Authors	Publication Year	ISSN	Journal Title	Journal h-index	Total Citations
Beyond the resource curse? Diamond mining, development and post-conflict reconstruction in Sierra Leone	Maconachie, R., Binns, T.	2007	0301-4207	Resources Policy	138	55
A clash of cultures (and lawyers): Anglo Platinum and mine-affected communities in Limpopo Province, South Africa	Farrell, L.A., Hamann, R., Mackres, E.	2012	0301-4207	Resources Policy	138	41
Strategies for managing large-scale mining sector land use conflicts in the global south	Moomen, A.-W.	2017	0301-4207	Resources Policy	138	26
Generating rights for communities harmed by mining: Legal and other action	North, L.L., Young, L.	2013	2158-9100	Canadian Journal of Development Studies	44	24

Leading scientific publications discussing land conflicts, mining, and local community engagement in the extractive industry originate from various reputable journals such as Land Use Policy, Resources Policy, Geoforum, and Environmental Management, with most articles published between 2002 and 2017. Titles such as “An Overview of Land Use Conflicts in Mining Communities” [10] and “Corporate Social Responsibility in the Mining Industry” by [11] highlight a focus on agrarian conflict, corporate social responsibility (CSR), and post-conflict social dynamics. In terms of academic influence, Hilson’s article recorded the highest number of citations (376), indicating a significant contribution to academic literature. Additionally, multiple articles by Maconachie and Binns appear, reflecting their active role in studying the social impacts of mining in Sierra Leone. The table also shows that Resources Policy is the journal most frequently publishing articles on this topic, underscoring its critical role in the global discourse on mining conflict management and the rights of affected communities.

Table 2. Most highly co-occurring keywords.

No	Keywords	Cluster Number	Link	Total Link Strength	Occurrences
1	Models	1	15	38	15
2	Sustainable Development	1	16	31	10
3	Interest	3	12	28	11
4	Mining sector		12	20	10
5	Livelihoods	1	13	22	10
6	Corporate social responsibility	2	15	29	6
7	Sustainability	3	13	28	9
8	Environment	1	14	24	8
9	Tension	1	11	21	7
10	Corporate social responsibility	2	15	29	6

The ten main keywords resulting from the bibliometric analysis are grouped into several thematic clusters based on their frequency and interconnections within the literature. The keyword Models ranks highest in Cluster 1, with 15 occurrences and a total link strength of 38, indicating the significant role of modeling concepts in studying conflicts in the extractive sector. Sustainable development and Livelihoods are also dominant in Cluster 1, reflecting the close relationship between sustainable development and the socio-economic impacts on communities. Keywords such as Corporate social responsibility (which appears twice in Cluster 2) and Environment highlight attention to corporate environmental and social responsibility. Meanwhile, Interest and Sustainability appear in Cluster 3, indicating a focus on the complexity of stakeholders and the dynamics of interests in conflict situations. This table underscores the importance of a multidimensional approach to understanding mining conflicts and managing their impacts.

3.2. Bibliometric Mapping and Geographical distribution

The analysis is divided into two parts: co-occurrence mapping and co-authorship mapping. Co-occurrence, also referred to as a semantic network, refers to the relationships between keywords, while co-authorship pertains to interactions among authors, contributing countries, or affiliations in the development of a particular field or research area.

In the co-occurrence mapping, all keywords are treated as units of analysis, using the full counting method. The study also applies certain limitations in its analysis. For instance, a minimum threshold of five (5) occurrences for a keyword is set as a filtering criterion. Out of a total of 2,302 terms, only 60 terms appeared at least five times and met the defined threshold. *Links* refer to the co-occurrence between one item (e.g., a keyword) and another, while *total link strength* indicates the total number of references cited between one item and others.

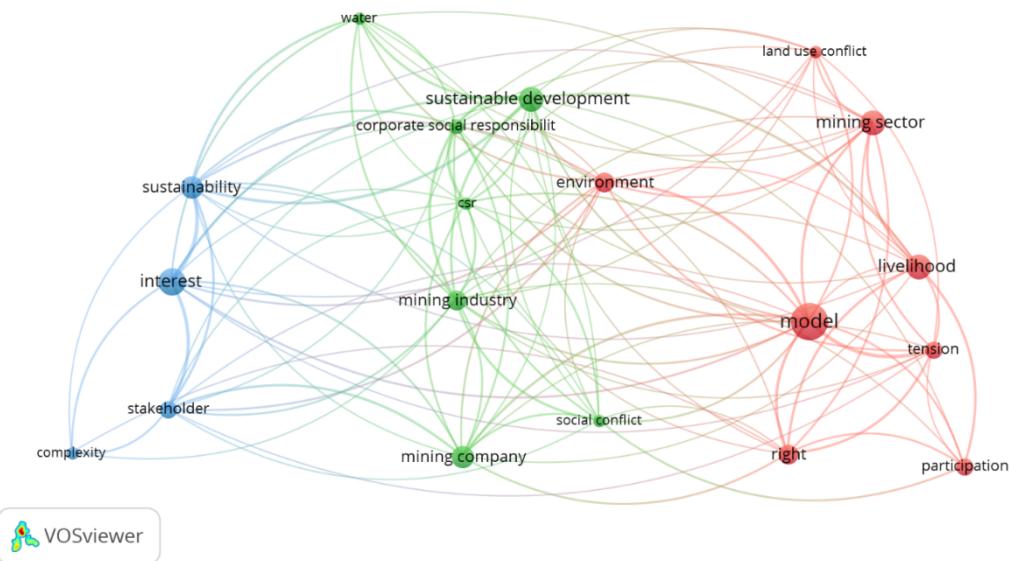


Fig. 4. Co-occurrence map of the keywords.

Cluster 1 (Red) relates to Social Conflict Issues and Conflict Management Models. This cluster reflects themes directly associated with conflicts in the extractive sector, particularly land disputes and community rights. Key keywords such as model, mining sector, land use conflict, livelihood, right, participation, and tension dominate this cluster. The connections among these terms indicate a strong focus on developing models for managing social conflict and highlight how community participation and land rights are central points of contention. This cluster also emphasizes the close relationship between the mining sector and social tensions at the local level.

Cluster 2 (Green) represents the Sustainability Dimensions and CSR in the Mining Industry. The green cluster illustrates sustainability aspects related to corporate activities and environmental concerns. Keywords such as sustainable development, corporate social responsibility, environment, CSR, mining industry, mining company, and water form a strong network, indicating a body of literature that discusses the integration of sustainability principles into extractive corporate practices. The interrelation among these terms demonstrates how companies attempt to build social legitimacy through CSR strategies and environmental management as a means of mitigating social and ecological conflicts.

Cluster 3 (Blue) refers to Stakeholder Engagement and Governance Complexity. This cluster focuses on the dynamics of stakeholder relationships within the context of sustainability and decision-making. Keywords such as stakeholder, sustainability, interest, and complexity suggest that the literature emphasizes the importance of both external and internal actors in shaping strategic decisions, as well as the complex challenges of managing diverse interests. This cluster also reflects a theoretical approach to sustainability and multi-actor interaction, underlining the importance of understanding power dynamics and interests in conflict resolution processes.

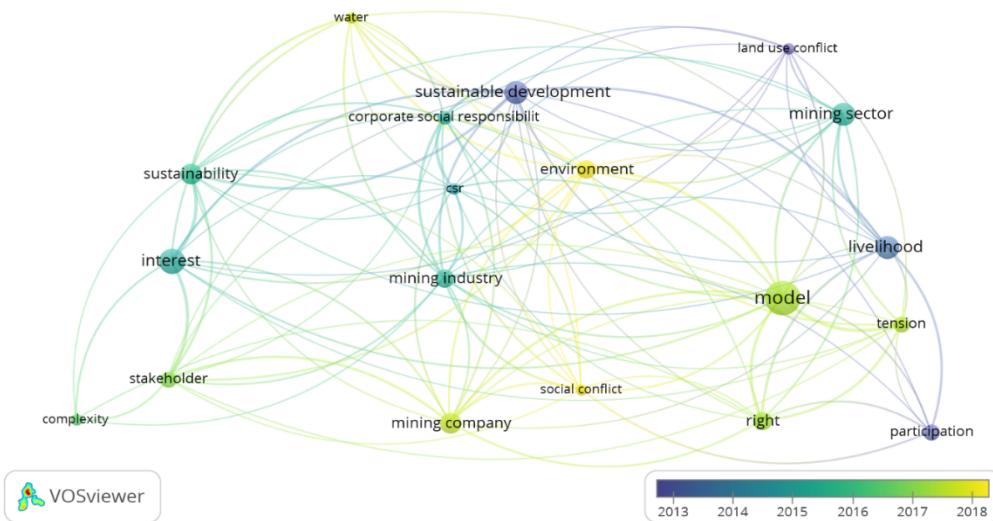


Fig. 5. Geographical distribution

The color blue indicates keywords that were more dominant in earlier publications, while yellow represents keywords that appear more frequently in more recent publications. It can be seen that keywords such as "sustainable development," "mining sector," and "land use conflict" are predominantly marked in blue, indicating that these issues have long been central topics in academic literature, particularly since 2013–2015. On the other hand, keywords like "model," "right," "tension," and "social conflict" appear more yellowish, showing that recent research has shifted its focus toward developing conflict resolution models, community rights, and the dynamics of social tension. In this context, geographical distribution does not refer to physical locations, but rather to the temporal dimension of topic popularity. In other words, the visual illustrates how research trends or attention toward certain keywords have evolved over time in academic literature on extractive sector conflicts and local communities. This helps researchers understand thematic evolution and identify emerging or underexplored areas of study.

4. CONCLUSION

Based on the results of the bibliometric analysis, it can be concluded that conflicts between extractive companies and local communities in Indonesia are complex and multidimensional issues. The focus of the literature has evolved from merely land-related disputes to participatory and sustainability-based approaches. The three main clusters identified—namely conflict management models, corporate social and environmental responsibility, and stakeholder engagement—highlight the importance of integrating local values, principles of restorative justice, and collaborative strategies in conflict resolution. This mapping provides direction for the development of more inclusive policies and practices and serves as a foundation for building constructive and sustainable relationships between companies and local communities.

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