

Collaborative Governance in Local Policy Dynamics: A Scientometric Analysis of Tripartite Actor Engagement in Makassar City, Indonesia

Erniwati¹, Sitti Murniati Muhtar², Fatma³

^{1,3}Universitas Pancasakti Makassar, Andi Mangerangi St. No. 73 Makassar

²Universitas Hasanuddin, Perintis Kemerdekaan St. Km. 10 Makassar

Corresponding Author: ernifipo@gmail.com

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Abstract: *This study examines the dynamics of collaborative governance in Makassar City, Indonesia, through a scientometric analysis of academic discourse spanning a decade (2016–2026). Employing the OpenAlex catalog with a Triple-Helix keyword strategy, 14,085 scholarly articles were extracted to investigate perceptual disparities among tripartite governance actors government agencies (OPD), civil society organizations (OMS), and private sector entities using IndoBERT-based sentiment analysis. Findings reveal a competitive academic landscape: positive sentiment (37.0%) marginally surpasses negative sentiment (33.6%), with neutral discourse comprising 29.4%. Cross-actor analysis uncovers significant perceptual dissonance: civil society organizations receive the highest academic criticism (37.1%), whereas government (38.6%) and private sectors (41.9%) dominate positive sentiment. Applying Collaborative Governance Theory, this study argues that the identified actor-specific sentiment disparities reflect structural asymmetries in trust-building mechanisms, institutional design deficits, and facilitative leadership gaps that impede genuine tripartite collaboration.*

INTRODUCTION

The evaluation of public policy and local government performance constitutes a cornerstone of sustainable urban governance discourse. In the contemporary era of networked governance, the traditional hierarchical model of public administration has increasingly given way to more horizontal, multi-stakeholder arrangements that emphasize collaborative decision-making processes (Ansell & Gash, 2008; Emerson, Nabatchi, & Balogh, 2012). Collaborative governance, defined as "a governing arrangement where one or more public agencies directly engage non-state stakeholders in a collective decision-making process that is formal, consensus-oriented, and deliberative" (Ansell & Gash, 2008, p. 543), has emerged as a predominant paradigm for addressing complex public problems that transcend organizational boundaries.

Within the Southeast Asian context, Indonesia's decentralization reforms initiated in 1999 have fundamentally restructured the relationship between governmental, civil society, and private sector actors in local governance. The principle of tripartite collaboration, wherein government agencies, civil society organizations, and private sector entities function as interdependent partners rather than hierarchically arranged actors, represents an aspirational framework enshrined in Indonesian local governance legislation. However, the translation of this aspirational collaborative model into operational reality remains contested, particularly in Indonesia's secondary metropolitan cities where institutional capacity and actor coordination mechanisms remain developmental.

Makassar City, as the provincial capital of South Sulawesi and the primary metropolitan hub of Eastern Indonesia, presents a compelling case study for investigating collaborative governance dynamics. The city functions as a strategic nexus for inter-island trade, governmental administration, and regional development coordination, thereby housing complex governance

challenges that necessitate multi-actor collaboration. These challenges span urban transportation infrastructure, public health delivery systems, and food security governance policy domains that, theoretically, should benefit substantially from tripartite collaborative arrangements given their cross-cutting nature and multi-stakeholder implementation requirements.

This study employs Collaborative Governance Theory as the primary analytical lens for interpreting the scientometric findings. Originating from the seminal work of Ansell and Gash (2008) and subsequently elaborated by Emerson, Nabatchi, and Balogh (2012), Collaborative Governance Theory provides a multi-dimensional framework for understanding the conditions under which cross-sector collaboration succeeds or fails in public management contexts. The theory posits that collaborative governance outcomes are contingent upon several interdependent variables organized into a system dynamics model: starting conditions establish the pre-collaborative context; institutional design dimensions address the formal rules and procedures that structure the collaborative process; and facilitative leadership represents the critical component referring to the capacity of designated leaders to guide the collaborative process through trust-building, commitment maintenance, and procedural fairness assurance.

Despite the proliferation of collaborative governance scholarship internationally, significant gaps persist in understanding how collaborative governance dynamics manifest in Indonesian local contexts. First, existing studies predominantly rely on primary data collection methods (surveys, interviews, case studies) that constrain sample size and temporal coverage. Crucially, there is a theoretical and methodological gap in conceptualizing and utilizing 'scholarly sentiment' as a valid proxy for local policy dynamics. Analyzing scholarly sentiment matters because academic discourse functions as an 'evaluative mirror' for the governance ecosystem (Rusliadi, et al., 2024). Scholars critically dissect policy successes and failures; thus, the collective sentiment within the scientific community reflects the actual structural health, trust deficits, and coordination realities of local governance at a macro level, overcoming the micro-level limitations of primary data. Second, the application of computational methods—particularly scientometric and sentiment analysis techniques—to collaborative governance research remains underdeveloped. Third, the specific question of how academic perception of tripartite actors differs across governance domains has received insufficient scholarly attention.

To contextualize these objectives, a clarifying boundary must be established: This study does not measure local governance dynamics directly, but rather captures the scholarly representation and academic discourse surrounding tripartite actor engagement. By treating academic literature as an evaluative mirror, we operate on the premise that scholarly sentiment systematically reflects broader systemic realities. This study addresses these gaps by pursuing the following objectives: (1) to map the distribution of academic sentiment regarding Makassar City's public policy through a scientometric analysis of scholarly discourse from 2016 to 2026; (2) to evaluate perceptual disparities among tripartite governance actors (government, civil society, private sector) as reflected in academic literature; (3) to interpret identified sentiment patterns through the lens of Collaborative Governance Theory; and (4) to generate evidence-based recommendations for improving collaborative governance practices in Makassar City.

RESEARCH METHODS

This study employs a quantitative scientometric research design utilizing secondary data systematically extracted from the OpenAlex global scientific catalog (<https://openalex.org>). OpenAlex represents a comprehensive, open-access database of scholarly publications that indexes articles, books, datasets, and other research outputs across all disciplines, making it particularly suitable for interdisciplinary governance research. The decision to utilize academic literature as the primary data source reflects the study's theoretical commitment to understanding how the scientific community perceives and evaluates local governance dynamics.

Data extraction was executed through the OpenAlex API. To mitigate the risk of institutional affiliation bias (e.g., capturing all publications from Makassar-based universities regardless of topic), the search strategy employed a strict Title-Abstract-KeyWord (TAK) constraint. The query required the geographic entity 'Makassar' to co-occur with governance-

related terminology (e.g., 'public policy,' 'collaborative governance,' 'civil society,' 'private sector') specifically within the title, abstract, or designated keyword fields, rather than a general affiliation search.

The temporal scope encompassed publications from January 1, 2016, to December 31, 2026. The initial extraction yielded a broad corpus of 14,085 scientific works. We acknowledge that this macro-level dataset inherently contains topical noise, as scientometric searches at the city level often capture interdisciplinary studies that merely mention the location. Therefore, subsequent analytical stages—specifically the Named Entity Recognition (NER) for actor identification and the thematic clustering for policy hotspots—acted as a secondary, rigorous filtering mechanism. For instance, the Policy Hotspots analysis represents a highly refined subset of this corpus, isolating only those documents where negative sentiment explicitly co-occurred with specific policy keywords, thereby explaining the lower, targeted document counts for specific thematic clusters.

Prior to sentiment classification, the extracted dataset underwent systematic data preprocessing. Text preprocessing operations encompassed title and abstract extraction, Indonesian-language text normalization addressing orthographic variations, inverted index reconstruction for compressed abstracts, and missing data handling wherein records with unavailable abstracts were excluded from sentiment analysis while retaining their availability for bibliographic analysis.

Actor identification constituted a critical analytical stage, enabling the disaggregation of sentiment patterns by governance actor category. A Large Language Model (LLM)-based Named Entity Recognition (NER) model was developed and deployed to identify and categorize policy actors mentioned in the scientific literature. The model categorized identified entities into three actor categories: (1) Government Agencies (OPD) municipal, provincial, and national governmental entities; (2) Civil Society Organizations (OMS) non-governmental organizations, community-based organizations, advocacy groups, professional associations; and (3) Private Sector Entities business corporations, industry associations, financial institutions.

Sentiment classification employed an IndoBERT-based architecture, leveraging the contextual embedding capabilities of Bidirectional Encoder Representations from Transformers (BERT) models pre-trained on Indonesian language corpora. The IndoBERT model was fine-tuned on a domain-specific dataset comprising Indonesian-language public policy texts annotated for sentiment polarity. The classification taxonomy comprised three sentiment categories: (1) Positive Sentiment text segments expressing appreciative evaluation, acknowledging policy effectiveness; (2) Negative Sentiment text segments expressing critical evaluation, identifying policy failures or governance deficits; and (3) Neutral Sentiment text segments lacking evaluative language or presenting balanced assessments. The fine-tuning process utilized a supervised learning approach with labeled training data, wherein human annotators with expertise in Indonesian public policy discourse categorized sample texts according to the three-category taxonomy. Inter-annotator agreement was assessed using Cohen's Kappa ($\kappa \geq 0.80$ threshold), ensuring annotation reliability.

RESULTS AND DISCUSSION

Distribution of Academic Sentiment

The data extraction and validation protocol yielded a comprehensive dataset of 14,085 scientific works addressing public policy and governance dynamics in Makassar City from 2016 to 2026. The sentiment analysis revealed a highly competitive distribution of academic sentiment regarding Makassar's public policy landscape.

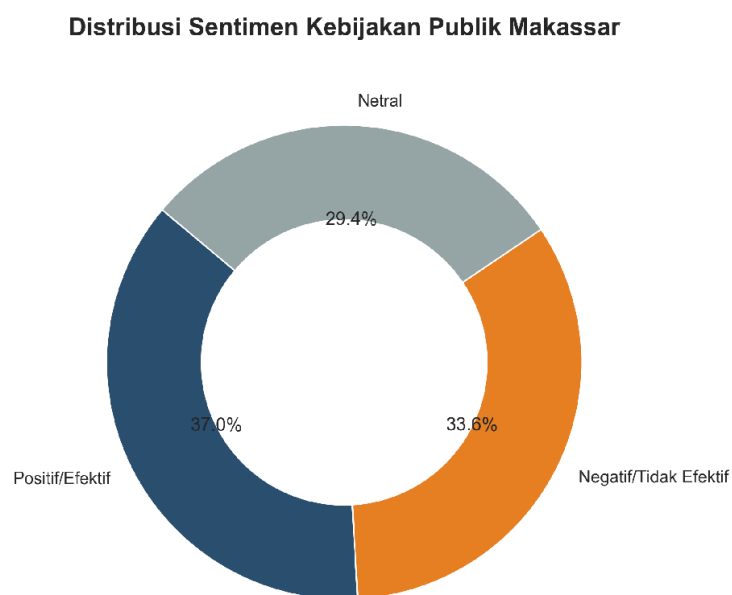


Figure 2. Distribution of Sentiment in Academic Discourse on Makassar Public Policy (2016–2026)

Source: Author's Analysis

This near-parity distribution merits careful theoretical interpretation. The competitive balance between positive and negative academic sentiment suggests a governance landscape characterized by neither unidimensional praise nor wholesale criticism. The distribution reflects the theoretical expectation that collaborative governance outcomes are inherently mixed some policy domains and actor engagements generate positive evaluations while others produce critical assessments. The heterogeneity of academic discourse thus constitutes evidence of a functioning deliberative space wherein scholarly evaluation maintains both appreciative and critical orientations.

Actor-Specific Sentiment Profiles

The disaggregation of sentiment patterns by governance actor category constitutes this study's most theoretically significant empirical contribution. Cross-actor analysis uncovered substantial "perceptual dissonance" in academic evaluations of tripartite governance actors, with sentiment distributions varying markedly across actor categories.

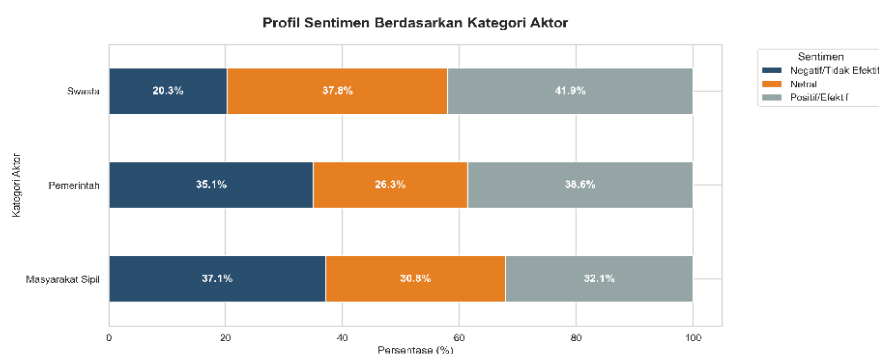


Figure 3. Sentiment Profile by Governance Actor Category

Source: Author's Analysis

The private sector demonstrated the highest positive sentiment proportion (41.9%) among all actor categories, with negative sentiment comprising only 20.3%. This distribution suggests that academic discourse predominantly evaluates private sector engagement with

Makassar's governance in favorable terms. The optimistic academic evaluation may reflect genuine collaborative effectiveness in public-private partnership arrangements, wherein private sector actors contribute resources and implementation capacity to jointly pursued governance objectives.

Government agencies received the second-highest positive sentiment proportion (38.6%), with negative sentiment comprising 35.1%. This pattern suggests that academic discourse maintains a partially positive orientation toward governmental actors while simultaneously expressing significant criticism. The high positive sentiment may reflect government agencies' central positioning in collaborative governance arrangements, wherein they serve as "anchor tenants" (Ansell & Gash, 2008) providing institutional legitimacy, resource mobilization capacity, and regulatory authority.

Civil society organizations (OMS) exhibited the most distinctive sentiment profile, with negative sentiment (37.1%) substantially exceeding positive sentiment (32.1%). This distribution represents the highest negative-to-positive ratio among all actor categories. Collaborative Governance Theory posits that genuine collaboration requires inclusive participation from all stakeholder categories, with civil society actors providing representation of citizen interests, advocacy for marginalized constituencies, and accountability monitoring. The high negative sentiment toward civil society suggests that academic discourse perceives civil society actors as failing to fulfill these collaborative functions effectively or alternatively, that institutional arrangements prevent civil society from engaging in collaborative processes with sufficient effectiveness.

Policy Hotspots: Collaborative Coordination Failures

To identify specific 'policy hotspots,' this study applied a sequential, intersectional filtering process to the initial macro-corpus of 14,085 documents. It is crucial to clarify that the initial corpus represents the broad universe of academic discourse mentioning Makassar and general governance terms. To isolate specific policy failures, the dataset was rigorously filtered through four intersecting criteria: (1) explicit mention of a specific policy domain (e.g., transportation, public health), (2) identification of tripartite actor involvement, (3) classification as negative sentiment by the IndoBERT model, and (4) exclusion of peripheral or purely technical interdisciplinary studies.

Consequently, the document volumes presented in Figure 4 represent a highly refined, specific subset of the broader dataset, not a contradiction. This methodological funnel explains why the highest-ranking negative hotspot, traffic congestion, comprises a targeted cluster of 55 to 88 documents, rather than thousands. These documents represent the concentrated core of academic criticism regarding collaborative failures, stripped of the broader, neutral, or tangentially related metadata present in the initial 14,085 corpus.

Traffic congestion emerged as the most critical policy hotspot within this refined subset. Academic literature on transportation policy in Makassar exhibited concentrated negative sentiment, with researchers critiquing both policy design and implementation effectiveness. From a Collaborative Governance Theory perspective, transportation policy represents a paradigmatic 'wicked problem' requiring coordination across multiple governmental agencies, private sector actors, and civil society representatives. The concentrated negative sentiment indicates a perceived deficit in this specific tripartite coordination.

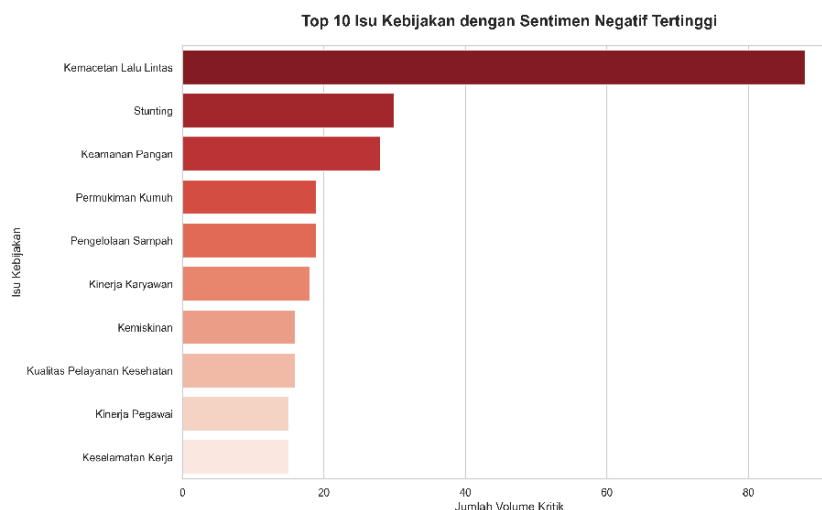


Figure 4. Top 10 Policy Issues with Highest Negative Sentiment

Source: Author's Analysis

Stunting (childhood malnutrition) received substantial academic attention with a predominantly negative evaluative orientation within this filtered subset. Indonesian national data indicate that stunting prevalence in South Sulawesi exceeds national average thresholds. The negative academic sentiment in this domain reflects scholarly recognition of collaborative deficits, wherein civil society actors are often perceived as excluded from policy design and implementation, producing suboptimal outcomes despite governmental resource commitment.

Similarly, food security governance in Makassar exhibited negative academic sentiment within this specific cluster. Researchers identified persistent challenges in achieving equitable food access and sustainable food system governance. The relatively positive academic evaluation of private sector actors in the broader dataset might generate expectations of effective public-private collaboration in food system governance; yet, the negative evaluation within this specific hotspot suggests that this potential collaboration remains unrealized in practice.

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Model Validity and Data Reliability

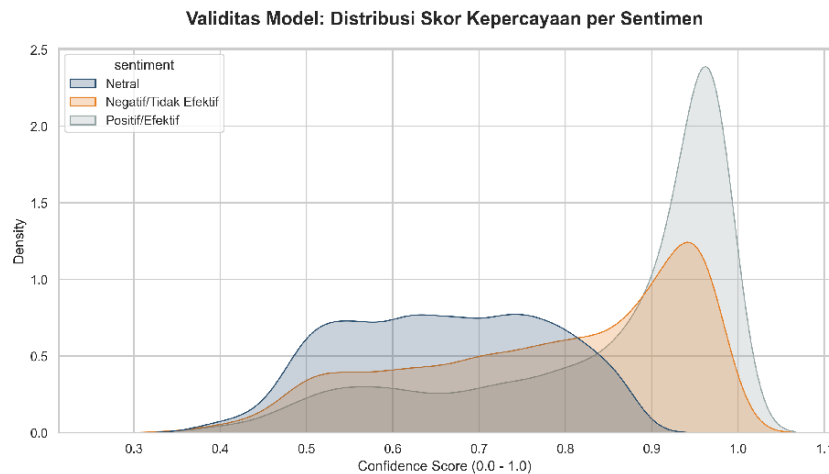


Figure 5. Model Validity: Confidence Score Distribution by Sentiment

Source: Author's Analysis

The classification model's performance was evaluated using a held-out test set (20% of the annotated corpus), yielding an F1-Score of 0.70. While this metric is moderate compared to standard benchmark datasets (e.g., product reviews), it represents a robust and pragmatic threshold for this specific domain. Achieving a higher F1-Score in this context is inherently constrained by three factors: First, linguistic nuance in Indonesian policy discourse: Academic abstracts frequently employ formal, passive, or indirect language to express criticism, which blurs the boundaries between neutral and negative sentiment. Second, severe class imbalance: The vast majority of scientific abstracts are inherently neutral or descriptive, making the accurate classification of minority classes (strongly positive or negative policy evaluations) statistically challenging. Third, short text length: Abstracts provide limited contextual windows for the IndoBERT model to resolve coreference. Therefore, an F1-Score of 0.70 is deemed methodologically acceptable for macro-level scientometric trend analysis. The goal of this study is not to achieve perfect micro-level classification of every single document, but rather to reliably detect aggregate sentiment distributions and thematic patterns across a large corpus.

The high model confidence in detecting academic criticism provides a strong empirical foundation for evidence-based decision-making. This methodological assurance validates that each article has undergone objective computerized inference processes, mitigating subjectivity in public policy evaluation.

CONCLUSION

This study has examined collaborative governance dynamics in Makassar City, Indonesia, through a scientometric analysis of academic discourse spanning a decade (2016–2026). By applying Collaborative Governance Theory as the primary analytical framework, the study interprets actor-specific sentiment disparities as evidence of underlying structural asymmetries in collaborative governance mechanisms.

The principal findings may be summarized as follows:

1. **Competitive Sentiment Landscape:** Academic discourse regarding Makassar's public policy exhibits near-parity between positive (37.0%) and negative (33.6%) sentiment, reflecting a heterogeneous evaluation environment consistent with the mixed outcomes that Collaborative Governance Theory predicts for multi-actor governance arrangements.
2. **Actor-Specific Asymmetry:** Cross-actor analysis reveals significant perceptual dissonance, with private sector actors receiving the most favorable academic evaluation (41.9% positive, 20.3% negative), followed by government actors (38.6% positive, 35.1% negative), while civil society organizations receive predominantly critical evaluation (32.1% positive, 37.1% negative).

3. Policy Hotspot Identification: Traffic congestion, stunting, and food security emerge as critical areas generating concentrated negative academic sentiment, indicating collaborative coordination failures that transcend individual actor performance.
4. Theoretical Contribution: The identified patterns constitute evidence of systemic collaborative governance deficits, including asymmetric starting conditions, institutional design inadequacies, trust-building deficits, and facilitative leadership gaps that constrain effective tripartite collaboration in Makassar City.

This study contributes to the collaborative governance literature by demonstrating scientometric methods for collaborative governance assessment, enabling large-scale, longitudinal analysis that complements traditional case study and survey approaches. The findings extend collaborative governance theory's applicability to developing country contexts, where institutional arrangements, power configurations, and civil society positioning differ substantially from Western democratic settings.

Based on the empirical findings and theoretical analysis, this study offers the following evidence-based recommendations for improving collaborative governance practices in Makassar City: (1) Government agencies should strengthen facilitative leadership functions by institutionalizing inclusive participation mechanisms that ensure civil society actors possess genuine decision-making voice; (2) Civil society organizations should invest in governance expertise, policy analysis capacity, and coalition-building capabilities that enhance their effective participation; and (3) Multistakeholder governance task forces with genuine authority, adequate resources, and accountability mechanisms should be established for priority intervention areas including traffic congestion, stunting, and food security.

Research limitations include the reliance on academic literature as the primary data source, which captures scholarly perception rather than direct stakeholder assessment. Furthermore, we acknowledge a methodological limitation regarding data volume: the initial corpus of 14,085 works, while comprehensive, may still contain residual topical noise inherent to large-scale bibliometric searches (e.g., interdisciplinary papers from local institutions that only peripherally mention governance). Future research should employ more granular, manual systematic review protocols (e.g., PRISMA) to validate a smaller, highly curated subset of this scientometric data. Suggestions for further research include longitudinal sentiment analysis to examine temporal evolution of collaborative governance perceptions, comparative analysis across Indonesian cities, and integration of scientometric sentiment analysis with primary data collection including stakeholder surveys and elite interviews.

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