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BRIN's Position in Indonesian Research and Innovation Discourse: A Semantic Network Analysis of News Media Coverage 2022-2024

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Abstract
As a newly established organization, BRIN needs to build institutional legitimacy in research and innovation performance, one of which is pursued through media coverage. However, this legitimacy can be distorted by media logic that prioritizes sensationalism and the dramatization of issues. BRIN's position within the discourse on research and innovation needs to be analyzed to understand the extent to which media coverage contributes to constructing its institutional legitimacy. This study aims to examine and test the semantic-structural similarity between the discourse on BRIN and that on research and innovation. The data were drawn from 5,716 articles published in Indonesia's top five news media outlets between 2022 and 2024. Semantic network analysis was employed to assess centrality and semantic similarity. The findings reveal significant fluctuations in the relationship between BRIN discourse and research and innovation discourse, illustrating the negotiation of institutional legitimacy through media representation. The weakening correlation observed in 2023 indicates the dominance of media logic, which prioritizes sensational and controversial aspects, generating

representations that do not always align with BRIN's core institutional mission and suggesting a partial alignment between the discourse on BRIN and that on research and innovation.

***Keywords**: Research and Innovation Discourse, Media Logic, Semantic Network Analysis, News Media*

1. Introduction

The establishment of the National Research and Innovation Agency (BRIN) of the Republic of Indonesia has provided a clear direction for the overarching discourse on research and innovation in Indonesia in recent years. BRIN's mission has the potential to shape research agendas by prioritizing research and innovation activities that can contribute to national economic growth (Burhani et al., 2021), not only as a driving force for the research- and innovation-based economy, but also in responding to current challenges such as climate change, technological disruption, and global economic dynamics (Hiskia et al., 2025). This condition puts BRIN in a strategic position to raise awareness and enthusiasm for research and innovation activities throughout Indonesia.

In this case, the media can make an essential contribution to shaping the institutional legitimacy of BRIN and, more broadly, public institutions as centers of research and innovation. The media can frame research institutions through scientific reputation, expert sources, and methodological legitimacy, thereby building or undermining public trust (Yutainten et al., 2025). News coverage emphasizes the direct benefits and "impact" of research for society or industry, making practical relevance a measure of newsworthiness and public legitimacy (Peters, 2011). Furthermore, reporting can highlight the commercialization and financial impact of research, leading research institutions to often be perceived as economic actors rather than purely academic ones (Sapir, 2020). This opportunity is significant for building the legitimacy of a public institution, especially given that BRIN was only fully operationalized in 2021.

Although BRIN serves as a national epicenter for research and innovation, the media may report on it from different perspectives. News coverage of public institutions sometimes focuses on figures, conflicts, and resolutions, portraying the institution as a hero, a wrongdoer, or a victim, which can influence public empathy and legitimacy (Panica et al., 2026). Political and social contexts shape agendas, leading to shifts in public discourse that redirect media attention and alter which identity attributes of an institution are prioritized over time (Brandt et al., 2024). Through mediatization, crises or scandals rapidly shape public institution identity, as media logic amplifies both positive and negative reputational effects

(Samoilenko, 2025). This mediatization practice can undoubtedly lead to BRIN being framed differently in different contexts.

Media Logic theory holds that mass media do not simply convey information but also shape how people think and behave through their internal formats, styles, and logic (Altheide & Snow, 1979). Media logic encourages framing as a "competition" or process, meaning coverage highlights dynamics and strategies rather than policy substance (Roslyng & Dindler, 2023). Editorials tend to use direct interaction, sensational framing, and reporting logic that emphasizes visuals and emotional narratives (Arwansyah et al., 2025). Political news reports often become exclusive sources of coverage that attract more attention compared to other types of reporting (Balles et al., 2025). A numerical comparative analysis shows that media logic plays a role in determining engagement levels, not only among readers but also among journalists (Shin et al., 2025). Based on this perspective, it is necessary to examine how the media has framed BRIN.

Several studies show that sensational news stories frame BRIN based on factors other than its research and innovation achievements, and that this effectively grabs public attention. The public criticized BRIN for not supporting the Nikuba invention. They felt the institution looked down on an innovation created by a local inventor (Ramadhan & Eriyanto, 2024). Accusations that BRIN has become too political have also led to a belief that there is academic suppression for its researchers (Pramesty, 2024). Furthermore, the involvement of political figures in BRIN's organization has prompted the public to pay closer attention and comment on the institution's future performance (Gora & Girsang, 2022). This situation suggests that the media's portrayal of BRIN as a national center for research and innovation could become distorted.

Online news media is now considered an important source that shapes public understanding in Indonesia, primarily because of the high number of online news consumers. The 2023 Indonesian Telecommunications Statistics, published by Statistics Indonesia, show that at least 76.08% of internet users aged five years and older use the internet to access information or news (Statistics Indonesia, 2024). In addition, the Reuters Institute Digital News Report 2024 reveals that online news has been the main source of news for Indonesians since 2021, surpassing television, social media, and print media (Newman et al., 2024). Based on these trends, it is clear that online news articles play a significant role in spreading information widely across Indonesian society.

Several previous studies have not analyzed media logic down to the level of word structure, even though formatting and framing are its main features. Using qualitative Critical Discourse Analysis, one study found

that political news on an online portal followed media logic, shifting from independence to algorithmic economics (Arzeti et al., 2025). Through manual content analysis, another study found that media logic, which highlights certain issues, can create a platform for public figures to interact with their audiences (Jost, 2023). Meanwhile, using qualitative content analysis, previous research has also examined how social media content is fabricated to create values that contrast with the original news values (Disseldorp & Bouko, 2025). These studies remain at the level of themes or topics that are already interpretive in nature, even though media logic influences the features and editorial construction of news (Arwansyah et al., 2025).

To understand how the editorial structure of BRIN news coverage relates to the broader discourse on research and innovation, an appropriate methodology is required, namely, Semantic Network Analysis. Semantic networks can be used to examine text patterns quantitatively and to identify representative keywords for a given word cluster (L. D. Kim & Jang, 2018). This analysis can extract essential concepts that shape the discourse, enabling the identification of the main ideas conveyed based on their degree of centrality (Chen et al., 2022). In addition to observing network structures, semantic network analysis can also identify similarities or alignments between word networks. This methodology facilitates the conclusion of whether news coverage is homogeneous through Quadratic Assignment Procedure (QAP) correlation analysis (Guo et al., 2023; B. Kim et al., 2024; Lee et al., 2026). Through this method, the role of media logic in shaping BRIN and Research & Innovation news coverage through its editorial practices can be understood. Moreover, BRIN public relations practitioners can better understand the direction of media discourse, thereby enabling earlier, more strategic responses to safeguard institutional legitimacy.

This study aims to explore the discourse conveyed by online news portals in Indonesia regarding BRIN, research, and innovation between 2022 and 2024. Through media logic, coverage of BRIN may become associated with sensational or controversial issues, ultimately weakening its institutional legitimacy. In this context, BRIN's efforts to build its legitimacy through research and innovation can be distorted, as the media tends to focus on certain issues, including sensational topics. The analysis of this time period aims to understand the dynamics of media logic year by year, as digital media is known for rapidly changing news characteristics (Navon, 2025).

Semantic network analysis is employed to examine patterns of relationships among words that emerge within these discourses as a product of media logic. The networks of "research and innovation"

discourse and "BRIN" discourse are comparatively analyzed to assess the extent to which BRIN is relevant to and aligned with the broader research and innovation narratives. The null hypotheses to be tested in this study are: There is no significant correlation between the BRIN semantic network and the research and innovation semantic network in 2022 (H_1), 2023 (H_2), and 2024 (H_3).

The research question guiding this study is: (1) What are the structural characteristics and the central concepts identified each year within the semantic networks of the BRIN discourse and the Research and Innovation discourse based on centrality analysis (2) To what extent is the structural alignment between the semantic networks of the BRIN discourse and the Research & Innovation discourse each year based on QAP correlation?

2. Method

2.1. Data Collection

This study draws data from news articles published by online news media in Indonesia. Our data sources were detik.com, kompas.com, tribunnews.com, tvonenews.com, and cnnindonesia.com, all of which were among the top 5 most popular online media outlets from 2022 to 2024, according to the Reuters News Report (Newman et al., 2022, 2023, 2024). In 2023, tvonenews.com (a top 6) dropped out of the top 5 and was replaced by metrotvnews.com. Owing to their high popularity, these media outlets are assumed to play a significant role in shaping public discourse on BRIN and on research and innovation more broadly within Indonesian society. However, this study did not include data from metrotvnews.com to maintain consistency across sources. Additionally, tags related to BRIN, research, or innovation on metrotvnews.com did not span the same time period as the articles from the other sources.

The news articles we collected contained the keywords (index tags) "BRIN," "research," and "innovation," and were published between 2022 and 2024. The strategy of selecting and collecting data using index tags has been employed in previous research to limit coverage to specific topics in news media (Colladon et al., 2023). Index tagging is an editorial technique that allows readers to find related stories (Allahdadi et al., 2024). Therefore, it is relevant to media logic, which treats tags as editorial products. The keywords "BRIN," "research," and "innovation" were used as an approach to observe the discourse networks of BRIN and of research and innovation. The data collection process used a Python script to scrape data. The libraries BeautifulSoup4, ChromeDriver, and Selenium were employed to parse and extract HTML structure and content. Given that each news outlet uses a distinct website structure, the scraping scripts were

customized accordingly. Each article was categorized based on whether it originated from the "BRIN" tag or from the "research" and "innovation" tags. The scraping was carried out between May and July 2025. Several attributes were extracted from each article, including the headline, article URL, article content, and publication date. We analyzed the headlines and the first two sentences of each article, adopting a strategy employed in prior studies (Colladon et al., 2023). This approach is based on the finding that most readers only read the headline and the initial sentences of an article.

2.2. Data Preprocessing

This process is carried out to obtain clean text data ready for analysis. First, we check for data duplication, excluding duplicate news links, leaving unique news links. Subsequently, links directing to video content and photo galleries were filtered out, as non-textual news coverage was excluded from the dataset. No filtering was applied by media channel (e.g., technology, science, or other sections); instead, articles from all channels were included in accordance with the initial search results. Based on this initial preprocessing stage, the dataset was reduced from 7,041 articles (3,754 articles tagged as research and innovation and 3,287 articles tagged as BRIN) to a total of 5,716 articles for analysis, comprising 2,665 research and innovation–tagged articles and 3,051 BRIN-tagged articles. The unit of analysis was the sentence, with a total of 17,148 sentences analyzed.

The preprocessing stage of text data in this process is called data cleaning. We performed lowercase conversion, removed punctuation, numbers, and special characters, and removed Indonesian stopwords. The preprocessing process was carried out using a Python pipeline using a combination of the pandas library, re for regex cleansing, and Sastrawi for stopwords. Our dictionary uses the Sastrawi stopword dictionary. Each author manually validated the data for each year to ensure that the data still retained its meaning. We did not remove slang words because the editorial team had curated the words in the news articles to use formal language. Stemming was not performed in order to preserve the words so that they would be more meaningful during interpretation. The entire data cleaning process was carried out without changing the sentence's meaning structure, only on surface linguistic elements for text analysis purposes.

2.3. Data Analysis

This study uses semantic network analysis to understand narrative patterns in BRIN discourse across news media, research, and innovation. In the semantic network model, nodes represent semantic or lexical units, and edges represent co-occurrence, or the strength of the relationship between nodes (Tsuboyama-Kasaoka et al., 2021). At a glance, this analytical method shares similarities with topic modeling as a clustering technique; however, whereas topic modeling classifies documents,

semantic network analysis clusters words based on their proximity or co-occurrence patterns (Segev, 2022). The primary function of network analysis is to examine interactions among nodes, which requires a precise specification of the types of interactions that constitute the network. The overall analytical workflow adopted in this study is illustrated in Figure 1.

The semantic network analysis developed in this study is a co-occurrence network that depicts word interactions. In a co-occurrence network, nodes represent lexical units (words), while edges indicate the co-occurrence relationship between two words in a given context. This relationship reflects conceptual proximity and the frequency of semantic associations, allowing researchers to identify thematic patterns, relationships between concepts, and the possibility of narrative focus on particular ideologies or tendentious forms of representation (Segev, 2022). The unit of network analysis is a unigram (single word). However, to maintain meaningful institutional representations, multi-word expressions were retained. These include organizational terms such as "*kepala brin*" (head of BRIN), "*organisasi riset*" (research organization), and "*pusat riset*" (research center), as well as frequently occurring acronyms, for example, "*Badan Riset dan Inovasi Nasional* (BRIN)," "*Badan Meteorologi, Klimatologi, dan Geofisika* (BMKG)," "*Lembaga Andi Pangeran Hasanudin* (APH)," "*Biologi Molekuler* (LBM) *Eijkman*," "*artificial intelligence* (AI)," and "*Energi Sumber Daya Mineral* (ESDM)." Co-occurrence is calculated based on the occurrence of two words or phrases in the same sentences. This approach is grounded in the assumption that words co-occurring within the same document are more likely to be semantically or ideologically related.

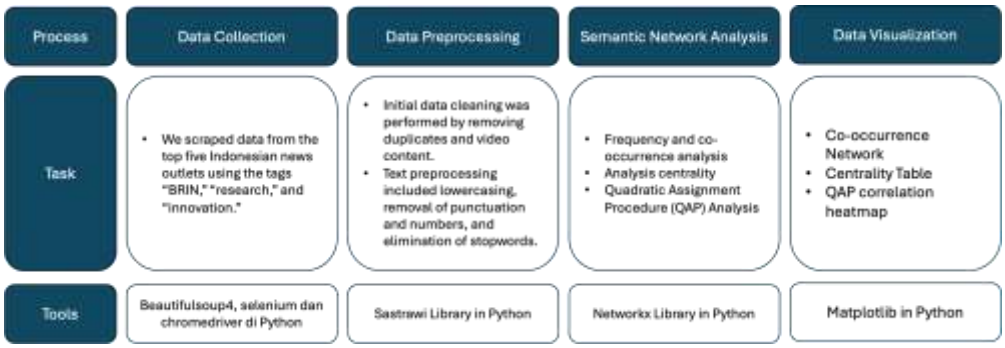

Figure 1. Research Workflow

In analyzing the network topology, we reported various statistics in the network analysis, including degree centrality, weighted degree centrality, density, average path length, and modularity (S.-A. Kim & Kim, 2022; Schöps & Jaufenthaler, 2024). Degree centrality measures the number of direct connections a node has; weighted degree centrality accounts for the

weight of co-occurrence; and betweenness centrality identifies words that serve as connectors between thematic groups. We also reported network density and average path length to describe the connectedness and efficiency of information flow within the network. To detect community structures, we applied the Louvain algorithm and reported modularity values, which indicate the strength of word grouping. In addition to presenting the top five nodes for each centrality metric, we tested their statistical significance by comparing them with random networks to ensure that the observed centrality values were not due to chance. The clustering coefficient (C) was reported to measure the density of connections among words within a community, with higher values indicating a more cohesive structure. A total of 500 random networks were simulated to test the significance of centrality at $\alpha = 0.05$ (Fredrickson & Chen, 2019).

To quantitatively assess the structural similarity between the research and innovation discourse network and the BRIN discourse network, we employed the Quadratic Assignment Procedure (QAP). As a non-parametric permutation test, QAP is specifically designed to address the issue of network autocorrelation, where observations are not independent. The procedure first computes the observed Pearson correlation coefficient between the two networks. It then tests the null hypothesis of no association by repeatedly permuting the rows and columns of one matrix and recalculating the correlation thousands of times, thereby generating a distribution of coefficients under the assumption of randomness. The statistical significance of the observed correlation is determined by comparing it against this empirically derived reference distribution (S.-A. Kim & Kim, 2022). Correlation values ranging from 0.00 to 0.30 indicate a weak relationship, values from 0.30 to 0.70 indicate a moderate relationship, and values above 0.70 indicate a strong relationship (Ratner, 2009).

The construction of the semantic network model was entirely carried out using Python scripts in a Jupyter Notebook environment. The semantic network model was created entirely using Python scripts in the Jupyter Notebook. The analysis was assisted by the networkx library for processing network algorithms and matplotlib for visualization. For data visualization, we presented only the 100 nodes with the highest weighted degree, but the network topology statistics were still reported using the entire network. The size of the nodes represents the number of connections with other nodes, while the thickness of the edges represents the weighted degree of the relationships between nodes.

3. Results

This section examines the annual structure of the semantic networks and identifies the central concepts in both the BRIN and Research and Innovation discourses. It further evaluates the extent of structural alignment between the two networks using QAP correlation. Together, these analyses provide an integrated view of how closely the two discourses converge.

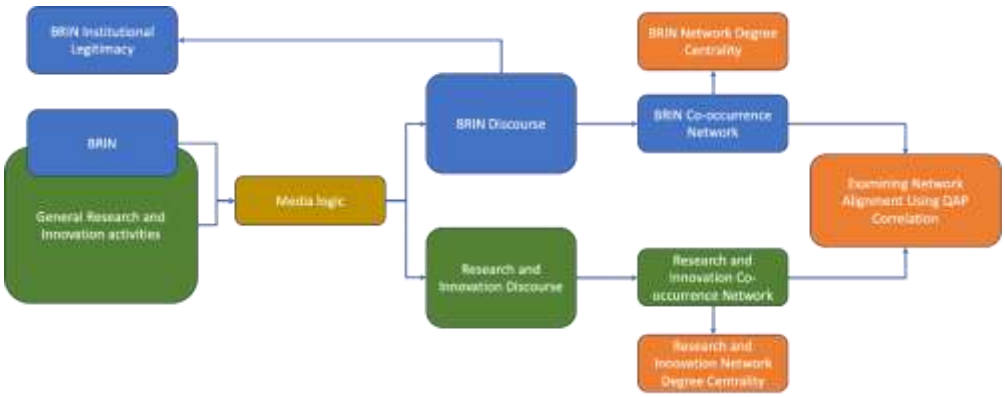

Figure 2. Discourse Alignment Process Flow

As an overview of the analytical framework, Figure 2 illustrates the workflow for assessing the alignment of BRIN-related coverage with the broader Research and Innovation discourse. The process begins with two institutional input domains, namely BRIN performance in terms of mission and mandate and general research and innovation activities, which are filtered through media logic to produce two distinct media discourses; notably, BRIN itself constitutes an integral part of the broader research and innovation discourse. Importantly, the BRIN discourse also contributes to the formation of BRIN institutional legitimacy through mediatization. Each discourse is then modeled as a co-occurrence semantic network, from which degree centrality is calculated to identify key concepts, and structural alignment between the two networks is subsequently evaluated using QAP correlation.

3.1. Semantic Structure of Research, Innovation, and BRIN Discourse

This section focuses on the analysis of semantic network topology to understand how the discourse structure concerning research, innovation, and BRIN is formed. By examining topological metrics such as density, modularity, average path length, and centrality, this section reveals patterns of connectivity, levels of cohesion, and the positions of key nodes that shape the configuration of discourse during the observation period.

Table 1. Network Statistics in 2022

Metric	BRIN 2022	Research and Innovation 2022
Density	0.0109	0.0087
Modularity	0.4155	0.3410
Community (n)	10	15
Average Length	5.4487	5.8252
Degree Centrality (Top 5)	1. *BRIN* [BRIN]: 0.8768* 2. *Indonesia* [Indonesia]: 0.3578* 3. *peneliti* [researcher]: 0.2929* 4. *riset* [research]: 0.2026* 5. *Pusat Riset* [Research Center]: 0.1819*	1. *riset* [research]: 0.5052* 2. *Indonesia* [Indonesia]: 0.4342* 3. *inovasi* [innovation]: 0.3861* 4. *teknologi* [technology]: 0.1849* 5. *pendidikan* [education]: 0.1165*
Weighted Degree Centrality (Top 5)	1. *BRIN* [BRIN]: 11,909* 2. *Indonesia* [Indonesia]: 3,219* 3. *peneliti* [researcher]: 3,117* 4. *Pusat Riset* [Research Center]: 1,721* 5. *research* [research]: 1,686*	1. *research* [research]: 3,040* 2. *Indonesia* [Indonesia]: 2,575* 3. *inovasi* [innovation]: 2,132* 4. *teknologi* [technology]: 961* 5. *pendidikan* [education]: 605*
Betweenness Centrality (Top 5)	1. *BRIN* [BRIN]: 0.346084* 2. *Indonesia* [Indonesia]: 0.131924* 3. *peneliti* [researcher]: 0.048905* 4. *riset* [research]: 0.035473* 5. *Pusat Riset* [Research Center]: 0.027944*	1. *riset* [research]: 0.2348* 2. *inovasi* [innovation]: 0.1701* 3. *Indonesia* [Indonesia]: 0.1510* 4. *mahasiswa* [student]: 0.0459* 5. *teknologi* [technology]: 0.0407*
Cluster Coefficient (Top 3)	1. *ketua* [chairperson]; *kerja* [work]; *dewan* [council]; *dpr* [parliament]; *komisi* [commission]: 0.3774	1. *mahasiswa* [student]; *universitas* [university]; *lingkungan* [environment]; *berhasil*

Metric	BRIN 2022	Research and Innovation 2022
	2. *fenomena* [phenomenon]; *Antariksa* [space]; *langit* [sky]; *barat* [west]; *penjelasan* [explanation]: 0.3080 3. *BRIN* [BRIN]; *riset* [research]; *Lembaga* [institution]; *LBM Eijkman* [LBM Eijkman]; *teknologi* [technology]: 0.1438	[successful]; *tim* [team]: 0.2311 2. *riset* [research]; *laporan* [report]; *pasar* [market]; *terkait* [related]; *penelitian* [study]: 0.1099 3. *Indonesia* [Indonesia]; *inovasi* [innovation]; *industry* [industry]; *Jakarta* [Jakarta]; *kolaborasi* [collaboration]: 0.0816

Note: * Significant at $\alpha = 0.05$

Based on the 2022 semantic network metrics, the BRIN network exhibited slightly higher cohesion than the Research and Innovation network. This is reflected in its higher density (0.0109 vs. 0.0087), indicating a tighter interconnection of concepts within the discourse on BRIN. Its modularity was also higher (0.4155 vs. 0.3410), suggesting a more defined and thematically segmented community structure. Although the BRIN network contained fewer communities (10 vs. 15), this points to stronger topical consolidation. Conversely, its shorter average path length (5.4487 vs. 5.8252) indicates a relatively more efficient flow of conceptual associations.

Regarding key conceptual actors, the BRIN network was highly centralized around the institutional node "*BRIN*," which dominated degree, weighted degree, and betweenness centrality measures. This reveals an institution-centric discourse pattern, with "*Indonesia*" and "*peneliti*" (researchers) serving as secondary connectors. In contrast, the Research and Innovation network was more topic-centric. "*Riset*" (research) emerged as the primary hub, followed by "*inovasi*" (innovation) and "*teknologi*" (technology), demonstrating a substantive focus on research and innovation activities themselves rather than on a specific institution. The relatively high betweenness centrality of "*riset*" and "*inovasi*" indicates their role as bridges between discourse communities. Furthermore, the presence of "*mahasiswa*" (students) and "*pendidikan*" (education) within the centrality measures of this network highlights the involvement of the higher education sector.

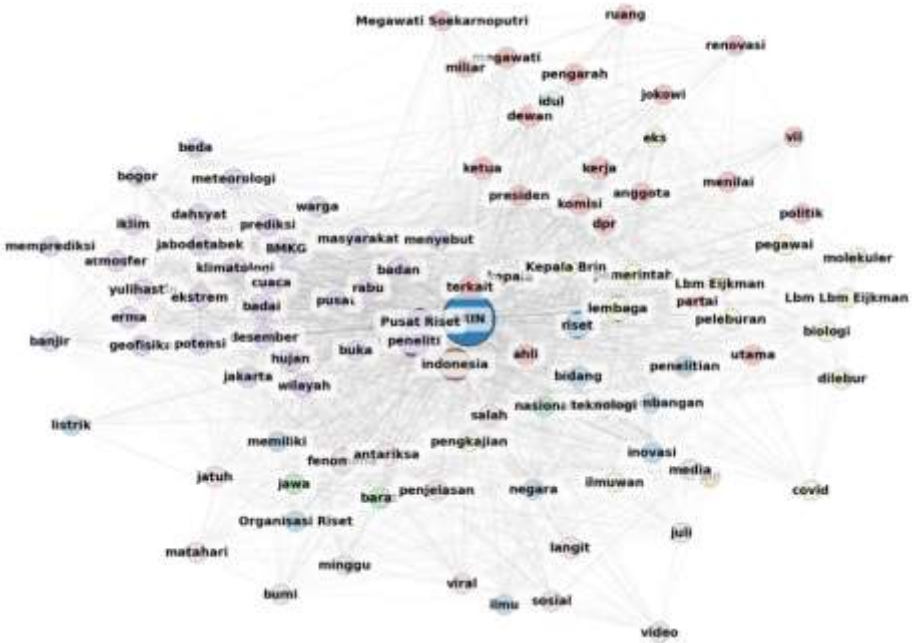

Figure 3. Semantic Network of BRIN, 2022

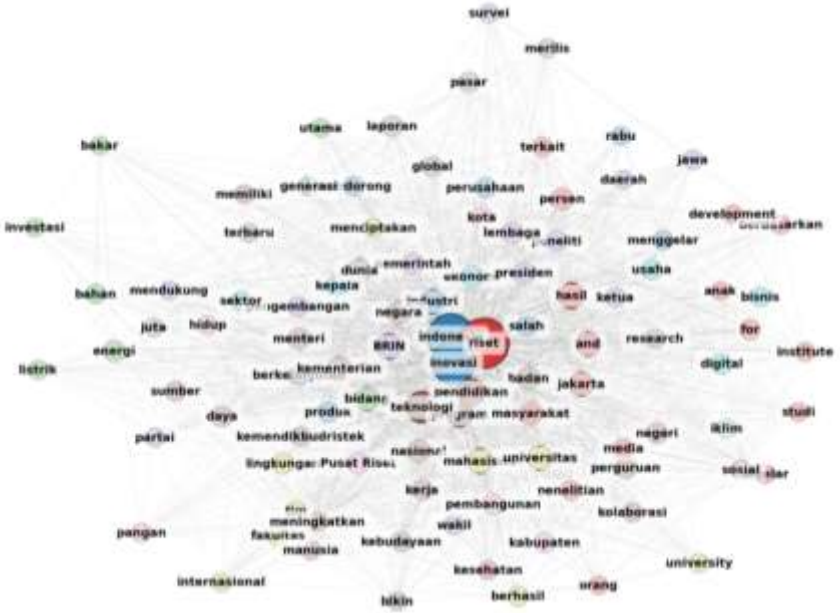

Figure 4. Semantic Network of Research and Innovation 2022

Clustering coefficient analysis reveals that the BRIN network exhibited a more cohesive discourse structure within its political cluster, dominated by actors such as "*dewan*" (council), "*dpr*" (parliament), and "*komisi*" (commission) (C = 0.377). This reflects how the media frames

BRIN as a political-institutional entity. This framing is illustrated by headlines such as "*PKS Risau Potensi Intervensi Politik usai Eijkman Dilebur ke BRIN*" (PKS Worries About Potential Political Intervention After Eijkman is Merged into BRIN) (CNN Indonesia, 2022), highlighting the politicization of a research institution, and "*Batalnya Renovasi Ruang Tidur Dewan Pengarah BRIN Senilai Rp 6,1 Miliar*" (Cancellation of the Rp 6.1 Billion Bedroom Renovation for BRIN's Steering Committee) (kompas.com, 2022), which emphasizes a controversial administrative issue. Both examples demonstrate how media logic prioritizes political and administrative concerns over substantive research. In contrast, the Research and Innovation network exhibited substantially lower cohesiveness across its clusters (C = 0.231 to 0.081), with discussion of academic topics, market research, and innovation occurring in a more fragmented, loosely connected manner. This contrast indicates that media discourse on BRIN is structurally more centralized and dense. In contrast, the discourse on research and innovation is dispersed across a wider range of loosely connected topics.

Table 2. Network Statistics in 2023

Metric	BRIN 2023	Research and Innovation 2023
Density	0.0104	0.0080
Modularity	0.3918	0.3194
Community (n)	14	23
Average Length	5.4781	5.7560
Degree Centrality (Top 5)	1. *BRIN* [BRIN]: 0.8385* 2. *peneliti* [researcher]: 0.4069* 3. *Indonesia* [indonesia]: 0.3120* 4. *muhammadiyah* [muhammadiyah]: 0.2268* 5. *warga* [citizens]: 0.2048*	1. *indonesia* [indonesia]: 0.4467* 2. *inovasi* [innovation]: 0.4386* 3. *riset* [research]: 0.3810* 4. *teknologi* [technology]: 0.1691* 5. *jakarta* [jakarta]: 0.1538*
Weighted Degree Centrality (Top 5)	1. *BRIN* [BRIN]: 19,833* 2. *peneliti* [researcher]: 9,334* 3. *muhammadiyah* [muhammadiyah]: 6,705* 4. *APH* [APH]: 6,034*	1. *inovasi* [innovation]: 4,389* 2. *indonesia* [indonesia]: 4,216* 3. *riset* [research]: 3,430*

Metric	BRIN 2023	Research and Innovation 2023
	5. *warga* [citizens]: 4,683*	4. *teknologi* [technology]: 1,302* 5. *BRIN* [BRIN]: 1,176*
Betweenness Centrality (Top 5)	1. *BRIN* [BRIN]: 0.2373* 2. *indonesia* [indonesia]: 0.0818* 3. *peneliti* [researcher]: 0.0776* 4. *riset* [research]: 0.0306* 5. *kepala brin* [head of brin]: 0.0213*	1. *riset* [research]: 0.1610* 2. *inovasi* [innovation]: 0.1555* 3. *indonesia* [indonesia]: 0.1482* 4. *mahasiswa* [student]: 0.0335* 5. *BRIN* [BRIN]: 0.0298*
Cluster Coefficient (Top 3)	1. *peneliti* [researcher]; *muhammadiyah* [muhammadiyah]; *APH* [APH]; *warga* [citizens]; *ancaman* [threat]: 0.3071 2. *Indonesia* [indonesia]; *fenomena* [phenomenon]; *badan* [agency]; *wilayah* [region]; *jakarta* [jakarta]: 0.2700 3. *BRIN* [BRIN]; *riset* [research]; *nasional* [national]; *teknologi* [technology]; *Lembaga* [institution]: 0.1085	1. *mahasiswa* [student]; *universitas* [university]; *listrik* [electricity]; *berhasil* [succesfu]; *produk* [product]: 0.2234 2. *riset* [research]; *penelitian* [study]; *dunia* [world]; *hasil* [result]; *digital* [digital]: 0.1622 3. *inovasi* [innovation]; *indonesia* [indonesia]; *jakarta* [jakarta]; *industri* [industry]; *negara* [state]: 0.1061

Note: * Significant at $\alpha = 0.05$

In 2023, the BRIN semantic network maintained stronger cohesion than the Research and Innovation network, despite a slight decline in consolidation from the previous year. This is reflected in its higher density (0.0104 vs. 0.0080) and greater modularity (0.3918 vs. 0.3194), indicating a relatively more organized community structure. However, BRIN's communities increased to 14 from a more consolidated state, suggesting emerging thematic fragmentation. In contrast, the Research and Innovation network had substantially more communities (23), reflecting a

more dispersed discourse. BRIN's shorter average path length (5.4781 vs. 5.7560) indicates continued efficiency in conceptual associations.

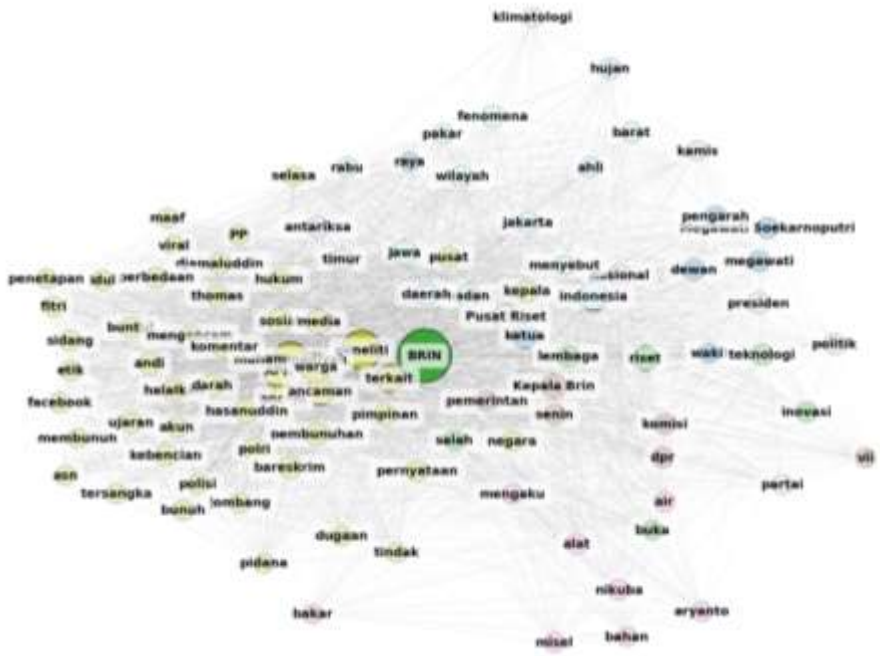

Figure 5. Semantic Network of BRIN Discourse, 2023

From a centrality perspective, BRIN's discourse remained institution-centric, with "*BRIN*" significantly dominating degree, weighted degree, and betweenness centrality. The presence of actors such as "*peneliti*" (researchers), "*muhammadiyah*", "APH" (Andi Pangerang Hasanuddin), and "warga" (citizens) in prominent positions suggests an expanding actor spectrum. However, it remains centered on BRIN as the primary hub. Conversely, the Research and Innovation network again exhibited a topic-centric pattern, with "*inovasi*" (innovation), "*riset*" (research), and "*indonesia*" serving as main connectors between communities. Their relatively balanced betweenness scores indicate a more polycentric, thematic discourse structure. The emergence of "*BRIN*" in weighted degree and betweenness centrality suggests the institution began engaging more prominently within research and innovation discourse. Overall, 2023 confirms that BRIN's discourse remained institutionalized despite increasing topical diversification, while the Research and Innovation discourse strengthened as an increasingly dispersed thematic ecosystem.

Figure 6. Semantic Network of Research and Innovation 2023

In 2023, the highest cohesiveness within the BRIN network (C = 0.307) was found in a controversy-driven cluster dominated by "peneliti" (researchers), "APH" (Andi Pangerang Hasanuddin), "*muhammadiyah*", and "*ancaman*" (threat), reflecting how media framed BRIN through the lens of conflict and personalization. This is illustrated by the headline "*BRIN Buka Suara Usai Andi Pangerang Tersangka Ancam Warga Muhammadiyah*" (BRIN Speaks Out After Andi Pangerang is Named a Suspect for Threatening Muhammadiyah Residents) (detik.com, 2023), highlighting media logic's preference for dramatic elements over research achievements. Conversely, BRIN's substantive research cluster exhibited the lowest cohesiveness (C = 0.108), confirming that controversial narratives marginalized research and technology coverage. In contrast, the Research and Innovation network displayed a more stable pattern, with moderately cohesive academic (C = 0.223) and digital research (C = 0.162) clusters. Thus, 2023 marked the dominance of media logic in constructing BRIN as a controversial entity, while its research identity remained fragmented and loosely connected.

Table 3. Network Statistics in 2024

Metric	BRIN 2024	Research and Innovation 2024
Density	0.0106	0.0084
Modularity	0.3872	0.2567
Community (n)	15	18
Average Length	5.3904	5.7560
Degree Centrality (Top 5)	1. *BRIN* [BRIN]: 0.8682* 2. *Indonesia* [Indonesia]: 0.4032* 3. *peneliti* [researcher]: 0.3451* 4. *Pusat Riset* [Research Center]: 0.2897* 5. *riset* [research]: 0.2307*	1. *Indonesia* [Indonesia]: 0.5174* 2. *riset* [research]: 0.4794* 3. *inovasi* [innovation]: 0.4447* 4. *teknologi* [technology]: 0.2192* 5. *perusahaan* [company]: 0.1689*
Weighted Degree Centrality (Top 5)	1. *BRIN* [BRIN]: 10,993* 2. *Indonesia* [Indonesia]: 3,905* 3. *peneliti* [researcher]: 3,418* 4. *Pusat Riset* [Research Center]: 2,831* 5. *research* [research]: 2,212*	1. *Indonesia* [Indonesia]: 10,246* 2. *research* [research]: 8,769* 3. *inovasi* [innovation]: 8,466* 4. *teknologi* [technology]: 3,238* 5. *energi* [energy]: 2,433*
Betweenness Centrality (Top 5)	1. *BRIN* [BRIN]: 0.3611* 2. *Indonesia* [Indonesia]: 0.0908* 3. *peneliti* [researcher]: 0.0570* 4. *Pusat Riset* [Research Center]: 0.0415* 5. *riset* [research]: 0.0330*	1. *Indonesia* [Indonesia]: 0.134*8 2. *riset* [research]: 0.1293* 3. *inovasi* [innovation]: 0.0873* 4. *teknologi* [technology]: 0.0350* 5. *masyarakat* [citizens]: 0.0268*
Cluster Coefficient (Top 3)	1. *riset* [research]; *inovasi* [innovation]; *bidang* [field]; *terkait* [related]; *nasional* [national]: 0.4404 2. *jawa* [java]; *fenomena* [phenomenon]; *pakar*	1. *Indonesia* [indonesia]; *perusahaan* [company]; *program* [program]; *industry* [industry]; *berkelanjutan* [sustainable]: 0.1313

Metric	BRIN 2024	Research and Innovation 2024
	[expert]; *wilayah* [region]; *iklim* [climate]: 0.3380 3. *BRIN* [BRIN]; *Indonesia* [Indonesia]; *peneliti* [researcher]; *Pusat Riset* [Research Center]; *teknologi* [technology]: 0.0.0663	2. *inovasi* [innovation]; *digital* [digital]; *penghargaan* [award]; *bisnis* [business]; *raih* [achieve]: 0.2017 3. *riset* [research]; *hasil* [result]; *Masyarakat* [citizens]; *dunia* [world]; *Lembaga* [institution]: 0.1050

Note: * Significant at $\alpha = 0.05$

In 2024, the BRIN semantic network maintained stronger structural cohesion than the Research and Innovation network. This is evidenced by its consistently higher density (0.0106 vs. 0.0084) and substantially greater modularity (0.3872 vs. 0.2567), indicating more structurally defined communities within the BRIN network. While BRIN's communities grew to 15, suggesting thematic expansion, its fragmentation remained more contained than that of Research and Innovation, which featured 18 communities and lower modularity. Furthermore, BRIN's shorter average path length (5.3904 vs. 5.7560) reflects continued efficiency in conceptual associations, indicating a relatively more integrated network.

From a centrality perspective, BRIN's discourse in 2024 remained strongly institution-centric. The node "BRIN" again dominated degree, weighted degree, and betweenness centrality, reinforcing its role as the primary hub controlling meaning within the network. The presence of "*Indonesia*," "*peneliti*" (researchers), and "*Pusat Riset*" (Research Center) as key nodes suggests the need to strengthen institutional narratives and research actor positioning. Conversely, the Research and Innovation network increasingly exhibited a mature topic-centric configuration, with "*Indonesia*," "*riset*" (research), and "*inovasi*" (innovation) sharing roles as primary connectors between communities. The relatively balanced betweenness distribution among these concepts indicates a more polycentric discourse structure grounded in substantive issues. Overall, 2024 confirms BRIN's consistency as an institutionalized discourse, while Research and Innovation evolved as a more dispersed yet structurally less consolidated thematic ecosystem.

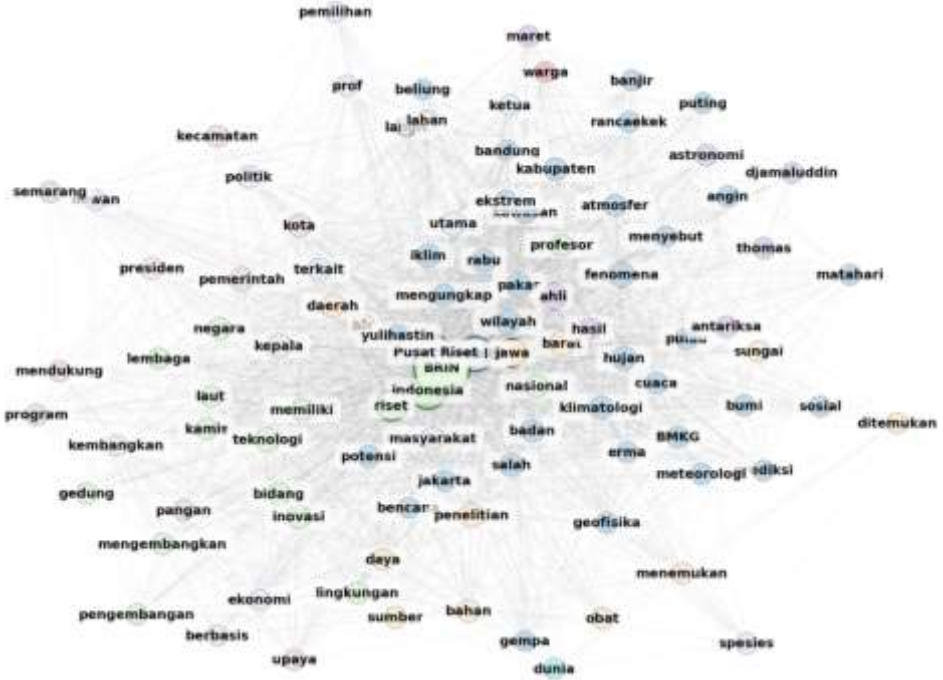

Figure 7. Semantic Network of BRIN, 2024

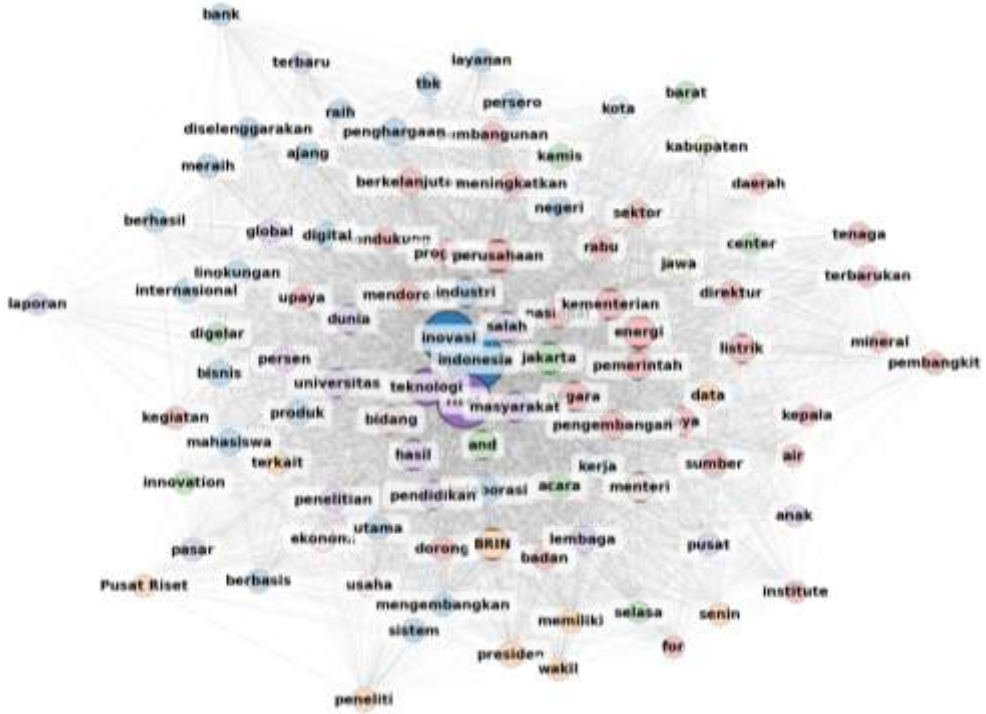

Figure 8. Semantic Network of Research and Innovation, 2024

In 2024, a shift occurred in BRIN's discourse structure. The cluster with the highest cohesiveness (C = 0.440) was dominated by substantive topics, including "*riset*" (research), "*inovasi*" (innovation), "*bidang*" (field), "*terkait*" (related), and "*nasional*" (national). This indicates a convergence between BRIN and research discourses that were previously fragmented. An example headline containing the word "bidang" (field) illustrates this: "*Profesor Riset BRIN Ungkap Bidang Keilmuan Kunci Mitigasi Perubahan Iklim*" (BRIN Research Professor Reveals Key Scientific Fields for Climate Change Mitigation) (detik.com, 2024). A second cluster discussing climate and regional phenomena (C = 0.338) suggests a strengthening of popular science discourse. Most notably, the cluster explicitly mentioning BRIN exhibited very low cohesiveness (C = 0.066). Meanwhile, the Research and Innovation network displayed a more diversified pattern, with clusters on digital innovation (C = 0.201), sustainable industry (C = 0.131), and institutional research (C = 0.105). These clusters exhibited low to moderate cohesiveness. These findings suggest that in 2024, substantive research discourse began integrating into the BRIN network through research-related topics without always explicitly naming the institution, while explicit representations of BRIN remained loosely connected.

3.2. Network Similarity Analysis

QAP correlation analysis revealed that all year-pairs tested exhibited significant structural similarity between the BRIN and Research & Innovation discourse networks. Correlation coefficients ranged from r = 0.22 to r = 0.36, falling within the low to moderate category. These findings indicate that while the two networks share certain similarities in their patterns of conceptual connections, the degree of similarity is insufficient to consider them identical.

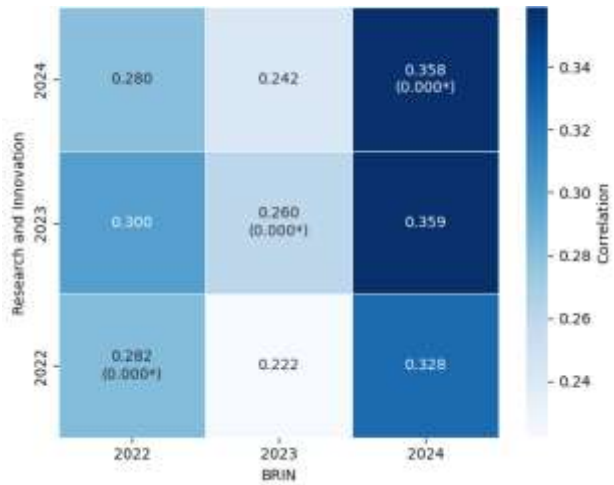

Figure 9. QAP Correlation Heatmap

Temporally, an interesting fluctuation pattern emerged. In 2022, correlations were relatively moderate, ranging from 0.280 to 0.300. In 2023, correlations weakened to between 0.222 and 0.260, marking a period of divergence where BRIN's discourse structure temporarily moved away from the research discourse pattern. However, this trend reversed in 2024, with correlations increasing sharply to between 0.328 and 0.359. This increase indicates a process of reconciliation or convergence between the two networks, as BRIN's discourse realigned itself with the research and innovation discourse structure.

All correlation coefficients were statistically significant at $\alpha = 0.05$. This significance confirms all hypotheses (H_1, H_2, H_3) that a relationship exists between the BRIN network and the research and innovation network in each year. However, since the correlation magnitudes remain within the low and moderate categories, the most appropriate interpretation is that the two networks experience partial structural alignment. In other words, BRIN and research and innovation are indeed significantly connected within media discourse, yet each maintains its own topological autonomy, preserving the distinct characteristics of its respective discourse.

4. Discussion

The results of the semantic network structure and centrality analysis between the BRIN discourse and the research and innovation discourse indicate a divergence in their respective discursive centers. Compared to the more fragmented issues within the research and innovation discourse network, the BRIN semantic network is more centrally oriented around organizational and structural issues. Previous studies employing an agenda-setting perspective have reported similar findings, demonstrating that the focal points of policy discourse and public discourse within a given issue tend to differ, as journalists are inclined to produce content that attracts broader audience attention (Lee et al., 2026). Moreover, variations in the centrality of media discourse in framing an issue may be influenced by political interests that shape the salience and emphasis of certain issues over others (Guo et al., 2023). The central structure of a political issue network in news portals may even shift when it is rearticulated by social media influencers (B. Kim et al., 2024). These findings underscore the role of media discourse as a site of meaning construction, wherein processes of selection and salience reconfigure issues, resulting in differentiated representations between institutional discourse and public discourse on research and innovation.

Although BRIN has frequently been reported in relation to specific controversies (Gora & Girsang, 2022; Pramesty, 2024; Ramadhan & Eriyanto, 2024)The results of the semantic structure analysis of the

discourse reveal substantive concepts, such as the recurring presence of "*peneliti"* [researcher] across different years. A similar pattern was identified in previous research, which found that media coverage of policy discourse may be partially distorted by public discourse, even though policy-related concepts remain central within the semantic network (Lee et al., 2026). This pattern indicates that while the semantic network preserves substantively important concepts as structurally central nodes, variations in co-occurrence ties remain responsive to issue salience, thereby encoding episodic controversies within a relatively stable conceptual architecture.

The alignment analysis employing QAP correlation reveals a significant but fluctuating structural relationship between BRIN-related discourse and research and innovation discourse in media coverage over the period 2022–2024. The observed fluctuation pattern offers a dynamic portrait of how the legitimacy of a public institution is negotiated and reconstructed through media representation. Within the framework of media logic theory, this phenomenon can be understood as a natural consequence of how media process and present reality (Arwansyah et al., 2025). The media do not act as neutral channels that transparently reflect BRIN's institutional legitimacy as a research agency. Instead, media possess their own internal logic, including preferences for personalization, dramatization, conflict, and ceremonial events, that selectively shape certain aspects of an institution for public consumption (Arzeti et al., 2025; Roslyng & Dindler, 2023). Consequently, media representations of BRIN do not always align with its core institutional mission. Instead, they emerge as a compromise between institutional identity and journalistic logic.

The level of network similarity observed in this study is consistent with previous research, which has shown that structural homogeneity across news networks often falls within low to moderate ranges (Guo et al., 2023; B. Kim et al., 2024; Lee et al., 2026). According to Guo et al. (2023)Such moderate correlation suggests that media outlets pursue distinct agenda-setting priorities when reporting on an issue, resulting in differences in issue salience. Each news organization also demonstrates particular framing preferences, with some adopting neutral tones while others tend to emphasize controversy (B. Kim et al., 2024). This pattern indicates that media issue preferences often capture public-facing narratives more strongly than policy substance, reflecting the agenda-shaping power of media actors (Lee et al., 2026). Consequently, media representations of BRIN do not always align with its core institutional mission but instead reflect a compromise between institutional identity and journalistic logic.

These findings contribute to understanding the dynamics of institutional legitimacy formation in the digital media era. Theoretically, this study extends media logic theory by demonstrating that institutional

legitimacy is continuously negotiated through semantic networks (Peters, 2011; Sapir, 2020; Yutainten et al., 2025) and that QAP analysis offers a novel methodological framework for measuring alignment between institutional discourse and media representation. In practice, BRIN's communication strategists should recognize that while media coverage is filtered through journalistic preferences for controversy (Shin et al., 2025)The persistent semantic centrality of core concepts like "research center" indicates that substantive institutional identity can still permeate public discourse. This study provides public relations practitioners with an empirical tool to evaluate communication effectiveness by tracking which core concepts remain central in public discourse over time, enabling institutions to navigate media logic to sustain their legitimacy.

This study has several limitations that offer opportunities for future research. First, the selection of discourses remains conceptual in approach, thus requiring more operational boundaries. Second, this study is limited to analyzing media logic through media content analysis, rather than directly exploring the news production process. Third, this study has not fully explored the audience reception dimension in understanding the construction of BRIN's discourse in the media, leading to a one-directional view of media logic's impact on institutional legitimacy. The use of a broader and more contextually grounded theoretical framework on media text production can further enrich the discussion of findings in future research.

This study opens several broader research agendas. First, comparative studies across institutions could examine whether similar fluctuation patterns occur in other public institutions, such as ministries, state-owned enterprises, or research institutions in different countries. Second, longer-term research spanning, for example, a decade is needed to understand whether the observed fluctuations represent a normal cycle or part of a longer-term trend toward more permanent convergence or divergence. Third, methodological development could integrate network analysis with qualitative methods such as critical discourse analysis or framing analysis to involve the media industry's environment or culture. The production of media texts cannot be disentangled from the broader contextual environment of the media industry; a contextualized understanding is essential to deepen the findings of this study.

5. Conclusion

The findings demonstrate a statistically significant and fluctuating structural alignment between media discourse on BRIN and broader research and innovation narratives during the 2022–2024 period. This main finding confirms that, although BRIN is institutionally positioned as

the epicenter of national research, its media discourse is not entirely synonymous with that on research and innovation. Nevertheless, the two discourses share certain structural similarities while retaining their respective topological characteristics. BRIN appears to occupy a central yet not fully dominant position, indicating partial embeddedness rather than complete discursive convergence.

This study contributes to the development of media logic theory in the context of public institutional legitimacy in the digital era. The findings on structural correlation fluctuations between BRIN's discourse and research and innovation discourse demonstrate how media logic can periodically distort, shift, or even align representations of institutional legitimacy. These fluctuations confirm that media do not act as neutral channels transparently reflecting institutional reality. Instead, they possess internal logic, including preferences for personalization, dramatization, and controversy, that selectively shape certain aspects of an institution for public consumption. Thus, this study enriches the understanding of the fact that institutional legitimacy in the digital media era is not a fixed or given entity, but rather the outcome of ongoing negotiation between institutional reality and media construction.

Reference

Allahdadi, M. R., Fretheim, T., & Vindedal, K. (2024). Value of climate change news: A textual analysis. *Global Finance Journal*, *63*. https://doi.org/10.1016/j.gfj.2024.101052

Altheide, D., & Snow, R. (1979). *Media logic.* Sage.

Arwansyah, O. D., Wiflihani, W., Suroso, P., Sigalingging, H., & Bangun, D. P. (2025). Politik dalam Bingkai Media: Studi Mediatization of Politics terhadap Konten Sosial Media Dedi Mulyadi. *Journal of Education, Humaniora and Social Sciences (JEHSS)*, *8*(1), 190–197. https://doi.org/10.34007/jehss.v8i1.2720

Arzeti, D. S. D. P., Elviria, S., Mairita, D., & Maghfirah, N. K. (2025). Deconstructing The Narrative of Power: A Critical Discourse Analysis of Tempo.co "Bagi-Bagi Konsesi Tambang" in Youtube. *Jurnal Ilmu Komunikasi*, *14*, 200–207. https://doi.org/10.33508/jk.v14i2.7795

Balles, P., Matter, U., & Stutzer, A. (2025). The Political Economy of Attention: Media Salience, Voter Cognition, and Electoral Accountability. *Journal of Economic Surveys*. https://doi.org/10.1111/joes.70051

Brandt, E., Rodriguez, A., Bezboruah, K., & Nwakpuda, E. (2024). Core Values in Public Administration and Policy: Three Levels of

Evaluation in the Public Sector. *Public Affairs Dissertations*. https://mavmatrix.uta.edu/publicaffairs_dissertations/165

Burhani, A. N., Mulyani, L., & Pamungkas, C. (2021). *The National Research and Innovation Agency (BRIN): A new arrangement for research in Indonesia*. ISEAS, Yusof Ishak Institute. https://www.iseas.edu.sg/articles-commentaries/trends-in-southeast-asia/the-national-research-and-innovation-agency-brin-a-new-arrangement-for-research-in-indonesia-by-ahmad-najib-burhani-lilis-mulyani-and-cahyo-pamungkas/

Chen, B., Zhu, X., & Shui, H. (2022). Socio-Semantic Network Motifs Framework for Discourse Analysis. *ACM International Conference Proceeding Series*, 500–506. https://doi.org/10.1145/3506860.3506893

CNN Indonesia. (2022). *PKS Risau Potensi Intervensi Politik usai Eijkman Dilebur ke BRIN*. https://www.cnnindonesia.com/nasional/20220104195452-32-742583/pks-risau-potensi-intervensi-politik-usai-eijkman-dilebur-ke-brin

Colladon, A. F., Grippa, F., Guardabascio, B., Costante, G., & Ravazzolo, F. (2023). Forecasting consumer confidence through semantic network analysis of online news. *Scientific Reports*, *13*(1). https://doi.org/10.1038/s41598-023-38400-6

detik.com. (2023). *BRIN Buka Suara Usai Andi Pangerang Tersangka Ancam Warga Muhammadiyah*. https://news.detik.com/berita/d-6698498/brin-buka-suara-usai-andi-pangerang-tersangka-ancam-warga-muhammadiyah

detik.com. (2024). *Profesor Riset BRIN Ungkap Bidang Keilmuan Kunci Mitigasi Perubahan Iklim Baca artikel detikedu, "Profesor Riset BRIN Ungkap Bidang Keilmuan Kunci Mitigasi Perubahan Iklim*. https://www.detik.com/edu/detikpedia/d-7443914/profesor-riset-brin-ungkap-bidang-keilmuan-kunci-mitigasi-perubahan-iklim

Disseldorp, J., & Bouko, C. (2025). From news article to social media post: A quantitative and qualitative analysis of news outlets' social media logic. *Atlantic Journal of Communication*, *33*(3), 509–524. https://doi.org/10.1080/15456870.2025.2454948

Fredrickson, M. M., & Chen, Y. (2019). Permutation and randomization tests for network analysis. *Social Networks*, *59*, 171–183. https://doi.org/10.1016/j.socnet.2019.08.001

Gora, R., & Girsang, L. (2022). Sarkasme figur politik di media sosial Sarcasm of political figures on social media. *Jurnal Magister Ilmu Komunikasi*, *8*(2), 263–275.

Guo, M., Hwang, M. K., Zhu, P., & Zhou, Y. (2023). A Study on Transnational Media Coverage of Sino-US Trade through Semantic Network Analysis. *Journal of Multimedia Information System*, *10*(2), 191–198. https://doi.org/10.33851/jmis.2023.10.2.191

Hiskia, H., Priswantoro, A., Jauhari, R., Jinan, R., & Herlambang, H. (2025). Pengelolaan Risiko Sebagai Faktor Kunci Dalam Peningkatan Produktivitas Dan Komersialisasi Inovasi Di Badan Riset Dan Inovasi Nasional. *Jurnal Ilmiah Manajemen dan Bisnis (JIMBis)*, *3*(4), 275–296. https://doi.org/10.24034/jimbis.v3i4.6984

Jost, P. (2023). How politicians adapt to new media logic. A longitudinal perspective on accommodation to user-engagement on Facebook. *Journal of Information Technology and Politics*, *20*(2), 184–197. https://doi.org/10.1080/19331681.2022.2076271

Kim, B., Lin, H., & Kim, Y. (2024). Interplay of agenda setters in the digital age: The associative Issue network between news organizations and Political YouTube Channels. *Computers in Human Behavior*, *155*. https://doi.org/10.1016/j.chb.2024.108169

Kim, L. D., & Jang, D. H. (2018). Expert views on innovation and bureaucratization of science: Semantic network analysis of discourses on scientific governance. *Science and Public Policy*, *45*(1), 36–44. https://doi.org/10.1093/scipol/scx035

Kim, S.-A., & Kim, H. (2022). How do People Understand and Express Smart City Analysis of Transition in Smart-city Keywords through Semantic Network Analysis of SNS Big Data between 2011 and 2020? *ARCHITECTURAL RESEARCH*, *24*(2), 41–52. https://doi.org/https://doi.org/10.5659/AIKAR.2022.24.2.41

kompas.com. (2022). *Batalnya renovasi ruang tidur Dewan Pengarah BRIN senilai Rp 6,1 miliar yang tuai kritik*. https://nasional.kompas.com/read/2022/07/19/08015871/batalnya-renovasi-ruang-tidur-dewan-pengarah-brin-senilai-rp-61-miliar-yang?page=all

Lee, J., Lee, Y., & Kim, B. (2026). The Interplay of Agenda Building and Agenda Setting Across Policy, Media, and Public Agendas. *Journalism and Mass Communication Quarterly*. https://doi.org/10.1177/10776990261416905

Navon, S. (2025). The temporal logic of media practices: Mourning and the tooling of time on Facebook. *New Media and Society*. https://doi.org/10.1177/14614448251381725

Newman, N., Fletcher, R., Eddy, K., Robertson, C. T., & Nielsen, R. K. (2023). *Reuters Institute Digital News Report 2023*. https://reutersinstitute.politics.ox.ac.uk/digital-news-report/2023

Newman, N., Fletcher, R., Robertson, C. T., Arguedas, A. R., & Nielsen, R. K. (2024). *Reuters Institute Digital News Report 2024*. https://doi.org/https://dx.doi.org/10.60625/RISJ-VY6N-4V57

Newman, N., Fletcher, R., Robertson, C. T., Eddy, K., & Nielsen, R. K. (2022). *Reuters Institute Digital News Report 2022*. Reuters Institute. https://doi.org/10.60625/risj-x1gn-m549

Panica, D., Niculicea, A. M., & Sorescu, D. (2026). Heroes, villains, and victims: A narrative policy framework analysis of media discourse on CCUS in Greece, Romania, and Denmark. *Open Research Europe*, *6*, 6. https://doi.org/10.12688/openreseurope.21802.1

Peters, H. P. (2011). Scientific sources and the mass media: Forms and consequences of medialization. In *The Sciences' Media Connection–Public Communication and Its Repercussions* (pp. 217–239). Springer.

Pramesty, N. K. (2024). *Strategi Komunikasi Humas Badan Riset dan Inovasi Nasional (BRIN) Dalam Membangun Kembali Citra Positif Di Kalangan Masyarakat* [PhD Thesis, Universitas Nasional]. https://repository.unas.ac.id/id/eprint/10215/

Ramadhan, K., & Eriyanto, E. (2024). Misinformasi dalam Isu Nikuba: Analisis Linguistik Korpus Isu Nikuba pada Komentar Youtube Kata kunci. *JIIP (Jurnal Ilmiah Ilmu Pendidikan)*, *7*(4), 3813–3820. https://doi.org/https://doi.org/10.54371/jiip.v7i4.4118

Ratner, B. (2009). The correlation coefficient: Its values range between 1/1, or do they? *Journal of Targeting, Measurement and Analysis for Marketing*, *17*(2), 139–142. https://doi.org/10.1057/jt.2009.5

Roslyng, M. M., & Dindler, C. (2023). Media power and politics in framing and discourse theory. *Communication Theory*, *33*(1), 11–20. https://doi.org/10.1093/ct/qtac012

Samoilenko, S. A. (2025). Reputational Crisis in Politics. In *The Handbook of International Crisis and Risk Communication Research* (pp. 259–271). Wiley. https://doi.org/10.1002/9781394180844.ch21

Sapir, A. (2020). Mythologizing the Story of a Scientific Invention: Constructing the legitimacy of research commercialization. *Organization Studies*, *41*(6), 799–820. https://doi.org/10.1177/0170840618814575

Schöps, J. D., & Jaufenthaler, P. (2024). Semantic network analysis in consumer and marketing research: Application areas in phygital contexts. *Qualitative Market Research*, *27*(3), 495–514. https://doi.org/10.1108/QMR-06-2023-0084

Segev, E. (2022). *Semantic Network Analysis In Social Sciences*. Routledge.

Shin, J., Lewis, S. C., Kim, S., & Thorson, K. (2025). Does high-quality news attract engagement on social media? Mediatization, media logic, and the contrasting values that shape news sharing, liking, and commenting on Facebook. *New Media and Society*, *27*(6), 3637–3657. https://doi.org/10.1177/14614448241228851

Statistics Indonesia. (2024). *Statistik Telekomunikasi Indonesia 2023*. Statistics Indonesia. https://www.bps.go.id/id/publication/2024/08/30/f4b846f397ea452bdc2178b3/statistik-telekomunikasi-indonesia-2023.html

Tsuboyama-Kasaoka, N., Hamada, M., Ohnishi, K., Ueda, S., Ito, Y., Nakatani, H., Sudo, N., & Noguchi, R. (2021). Prolonged maternal and child health, food and nutrition problems after the Kumamoto earthquake: Semantic network analysis of interviews with dietitians. *International Journal of Environmental Research and Public Health*, *18*(5), 1–11. https://doi.org/10.3390/ijerph18052309

Yutainten, Kuswarno, E., Wahyudin, U., & Mirawati, I. (2025). Reframing Government Science Communication in the Digital Era: A Multi-Model Study of BRIN (Indonesia). *Publications*, *13*(3). https://doi.org/10.3390/publications13030045