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THE ROLE OF DATA JOURNALISM IN INFORMING PUBLIC FACTS: A CASE STUDY OF WHOOSH HIGH-SPEED TRAIN NEWS IN ONLINE MEDIA (KOMPAS.COM, TEMPO.CO, AND DETIK.COM)

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Abstract

The rapid development of digital media has accelerated the flow of information about national strategic infrastructure projects, including the Whoosh High Speed Train in Indonesia. This condition increases the risk of information flooding and the emergence of unverified data claims, thus confirming the importance of the role of data journalism in conveying public facts accurately and transparently. This study aims to examine the role of data journalism in the news of the Whoosh High Speed Train in online media by analyzing how data is collected, verified, analyzed, and presented by three national online media, namely Kompas.com, Tempo.co, and Detik.com. This study uses a qualitative approach with a case study design. The analysis technique used is a qualitative content analysis of selected news that contains data elements. The analysis was carried out using the data journalism framework of Gray, Chambers, and Bounegru, and was associated with gatekeeping and verification theories as well as media innovation theories. The results of the study show that there is significant variation in the application of data journalism in the three media. Tempo.co demonstrate the most comprehensive application of data journalism, characterized by a diversity of data sources, consistent verification practices, in-depth data analysis, and the use of analytical visualization. Kompas.com show a moderate level of adoption with a balance between the use of data and the context of the narrative, while Detik.com tend to use data descriptively and minimally with an emphasis on the speed of news presentation. This study concludes that data journalism plays an important role in improving the quality of public information when applied as a systematic journalistic process, not just as a complement to numbers. The effectiveness of data journalism is greatly influenced by the capacity of the newsroom, editorial orientation, and the level of innovation of the media organization. This study contributes to the study of data journalism and digital journalism by showing how editorial decisions and media innovation shape the epistemic quality of news infrastructure in the digital era.

Keywords: data journalism, online media, high-speed train, public information, digital journalism

Abstrak

Perkembangan pesat media digital telah mempercepat arus informasi mengenai proyek infrastruktur strategis nasional, termasuk Kereta Cepat Whoosh di Indonesia. Kondisi ini meningkatkan risiko banjir informasi dan munculnya klaim data yang tidak terverifikasi, sehingga menegaskan pentingnya peran jurnalisme data dalam menyampaikan fakta publik secara akurat dan transparan. Penelitian ini bertujuan untuk mengkaji peran jurnalisme data dalam pemberitaan Kereta Cepat Whoosh di media daring dengan menganalisis bagaimana data dikumpulkan, diverifikasi, dianalisis, dan disajikan oleh tiga media daring nasional, yaitu Kompas.com, Tempo.co, dan Detik.com. Penelitian ini menggunakan pendekatan kualitatif dengan desain studi kasus. Teknik analisis yang digunakan adalah analisis isi kualitatif terhadap berita-berita terpilih yang memuat unsur data. Analisis dilakukan dengan menggunakan kerangka jurnalisme data dari Gray, Chambers, dan Bounegru, serta dikaitkan dengan teori gatekeeping dan verifikasi serta teori inovasi media. Hasil penelitian menunjukkan adanya variasi yang signifikan dalam penerapan jurnalisme data di ketiga media. Tempo.co menunjukkan penerapan jurnalisme data yang paling komprehensif, ditandai dengan keberagaman sumber data, praktik verifikasi yang konsisten, analisis data yang mendalam, serta penggunaan visualisasi analitis. Kompas.com menunjukkan tingkat penerapan yang moderat dengan keseimbangan antara penggunaan data dan konteks narasi, sementara Detik.com cenderung menggunakan data secara deskriptif dan minimal dengan penekanan pada kecepatan penyajian berita. Penelitian ini menyimpulkan bahwa jurnalisme data berperan penting dalam meningkatkan kualitas informasi publik apabila diterapkan sebagai proses jurnalistik yang sistematis, bukan sekadar sebagai pelengkap angka. Efektivitas jurnalisme data sangat dipengaruhi oleh kapasitas newsroom, orientasi editorial, dan tingkat inovasi organisasi media. Studi ini berkontribusi pada kajian jurnalisme data dan jurnalisme digital dengan menunjukkan bagaimana keputusan editorial dan inovasi media membentuk kualitas epistemik pemberitaan infrastruktur di era digital.

Kata kunci: *jurnalisme data, media daring, kereta cepat, informasi public, jurnalisme digital*

INTRODUCTION

The launch of the Whoosh High Speed Train as one of Indonesia's national strategic projects is an important event that not only marks the progress of transportation infrastructure, but also gives rise to complex public discourse dynamics. From the planning, construction, to operational stages, the project continues to be in the spotlight of the media and the public because it involves large investments, international cooperation, and broad social, economic, and environmental implications. In this context, online media news is developing very quickly and massively, presenting a variety of perspectives ranging from factual reports, policy analysis, public opinion, to data claims that are not always accompanied by an adequate verification process. This condition shows how the issue of strategic infrastructure is not only a technical issue, but also an arena for information contestation in the digital public space.

At the same time, Indonesian people are in a situation of "information flood" or information overload which is marked by the abundance of news flows from various

digital platforms. This phenomenon causes the public to often have difficulty distinguishing between information based on verified data and information that is speculative or biased. It is in this context that the need for data-driven journalism becomes increasingly urgent. Data journalism is understood as a journalistic practice that relies on the systematic collection, analysis, and presentation of data to produce accurate, transparent, and accountable information. Coddington (2015) emphasizes that data journalism emerged as a response to the demands of accuracy and credibility in the digital age, where journalists are no longer enough to just quote sources, but must also be able to process raw data into meaningful public knowledge (Saputra, 2024).

This thinking is reinforced by Gray, Chambers, and Bounegru who state that data journalism is not just presenting numbers or graphs, but an epistemological process that transforms raw data into a narrative that can be understood by the public (Syam et al., 2021). In the context of the Whoosh High Speed Train issue, data journalism has the potential to play a strategic role in explaining project funding issues, projected economic benefits, passenger occupancy rates, environmental impacts, and comparisons with other modes of transportation. However, this potential is not always optimally realized in online media practices in Indonesia.

A number of previous studies have shown that the study of data journalism in Indonesia is still focused on certain issues such as politics and elections, the COVID-19 pandemic, and economic and public health issues. These studies generally assess the effectiveness of data visualization, the use of infographics, or the existence of data as a news supporting element. Although they make important contributions, these studies tend to not delve deeply into how the processes of data collection, source verification, quantitative analysis, and editorial decisions in newsrooms affect the quality of information received by the public (Wahyudi, 2020). Especially on the issue of strategic transportation infrastructure such as the Whoosh High Speed Train, data journalism research is still very limited, so there is a significant academic gap.

The gap in this study lies in the lack of a study that comprehensively assesses the depth of data analysis, transparency of sources, and data presentation models used by national online media in reporting on high-speed train projects. In fact, infrastructure issues have a long-term impact on people's lives and public policies, so they require news that is not only fast, but also accurate and contextual. Therefore, this study departs from the assumption that the quality of data journalism greatly determines how the public understands and assesses national strategic projects.

This research focuses attention on three main aspects. First, how data journalism practices are applied in the news of the Whoosh High Speed Train in the national online media. This aspect includes the extent to which the media collects data from primary sources, uses official or open data, and integrates quantitative analysis in the news narrative. Second, internal and external factors that affect the quality of the application of data journalism, including the capacity of human resources in the newsroom, editorial policies,

time pressure, economic-political interests, and access to public data. Third, the formulation of an ideal model of data journalism that can be developed as a strategic reference for Indonesian online media in covering large-scale infrastructure issues.

The main argument of this study is that data journalism has a significant contribution in improving the quality of public information, especially on sensitive and complex issues such as the Whoosh High Speed Train. However, the quality of such contributions is highly dependent on the newsroom's internal capacity to collect, examine, analyze, and present data responsibly. Without this capacity, data journalism risks being reduced to just a visual element that embellishes the news without reinforcing the substance of the information.

Theoretically, this research is based on the data journalism framework developed by Gray, Chambers, and Bounegru, which views the practice of data journalism as a series of four main stages, namely finding data, examining data, analyzing data, and presenting data. The stage of finding data is related to the ability of journalists and editors to access open data, official documents, or independent databases relevant to the issue of high-speed trains. The data examining stage emphasizes the importance of verification, validation, and cross-checking to ensure data reliability. The data analysis stage involves the use of simple statistical or computational methods to interpret data, while the data presentation stage focuses on constructing narratives, visualizations, and contexts that can be understood by the broad public (Susilo & Harliantara, 2023).

This framework is used as an analytical tool to assess whether national online media implements data journalism in its entirety or uses only some of its elements. In practice, not a few media display graphs or figures without adequate methodological explanations, so they have the potential to cause misinterpretation. Therefore, the comprehensive application of the data journalism framework is an important indicator in assessing the quality of news.

In addition, this study also utilizes the theory of gatekeeping and verification as a basis to analyze the factors that determine the quality, accuracy, and transparency of data. Shoemaker and Vos explain that the gatekeeping process in a newsroom involves a series of editorial decisions that determine what information is selected, omitted, or highlighted. In the context of data journalism, the decision includes the selection of data sets, analytical viewpoints, and how information is presented to the public. Meanwhile, Kovach and Rosenstiel affirm that verification is at the core of journalism practice, which distinguishes professional journalism from simply producing informational content (Sastro Atmodjo et al., 2025).

The application of verification theory became very relevant in the news of the Whoosh High Speed Train, given the high political and economic importance attached to this project. Without a rigorous verification process, the data presented by the media has the potential to be biased, partial, or even misleading. Therefore, an analysis of gatekeeping

and verification practices helps explain why the quality of data journalism between online media can differ significantly.

Furthermore, K  ng's media innovation theory was used to formulate an ideal model for the application of data journalism. This theory emphasizes that media adaptation to digital technology is not only technical, but also involves changes in work culture, organizational structure, and editorial strategies. In the context of Indonesian online media, data journalism innovation demands cross-role collaboration between journalists, data analysts, visual designers, and editors. In addition, a managerial commitment is required to provide adequate training, technology infrastructure, and production time for data journalism practices (Ndraha et al., 2024).

By integrating the three theoretical foundations, this study seeks to produce a comprehensive understanding of data journalism practices in the reporting of the Whoosh High Speed Train. Theoretically, this research is expected to enrich the study of data communication and digital journalism, especially in the context of developing countries. Practically, the results of this study are expected to provide concrete recommendations for national online media in improving the quality of coverage of strategic infrastructure issues through the application of more accurate, transparent, and contextual data journalism. Socially, this research is expected to help the public gain a more rational and data-based understanding of national infrastructure projects, so that they can participate more critically in public policy discourse. Thus, the study of data journalism in Whoosh High Speed Train news is not only academically relevant, but also has significant practical and social implications. In the midst of an increasingly fast and complex flow of digital information, data journalism has the potential to be an important instrument in maintaining the quality of information democracy and public trust in the media

METHOD

This study uses a qualitative approach with a case study design to analyze the role of data journalism in informing public facts on the news of the Whoosh High Speed Train in national online media, namely Kompas.com, Tempo.co, and Detik.com. The qualitative approach was chosen because it allows researchers to understand in depth journalistic practices, news production processes, and the meaning that the media builds through the use of data in the context of strategic infrastructure issues (Creswell & Poth, 2017).

The unit of analysis in this study is online news that contains elements of data or number-based claims related to the Whoosh High Speed Train. The sampling technique was carried out by purposive sampling with the following criteria: (1) news published in the initial operational period of the Whoosh High Speed Train, (2) containing quantitative data such as project cost, number of passengers, travel time, or economic impact, and (3) displaying elements of data analysis, tables, graphs, or information visualizations. Data was collected through digital documentation by browsing news archives in the three media.

Data collection techniques are carried out through document analysis and systematic recording of news content. Furthermore, the data was analyzed using qualitative content analysis with reference to the data journalism framework from Gray, Chambers, and Bounegru which includes the stages of finding data, examining data, analyzing data, and presenting data. In addition, gatekeeping theory is used to examine editorial decisions in data selection and prominence, while verification principles are used to assess the accuracy and transparency of data sources (Shoemaker & Vos, 2009).

The validity of the data is maintained through the source triangulation technique by comparing information between media and matching the data used with official documents or public reports. With this method, the research is expected to be able to comprehensively describe how data journalism is applied and the extent of its contribution in improving the quality of public information about the Whoosh High Speed Train.

RESULTS AND DISCUSSION

This section presents the results of an analysis of the application of data journalism in the news of the Whoosh High Speed Train in three national online media, namely Kompas.com, Tempo.co, and Detik.com. The results of the research are compiled based on the main stages of data journalism which include data sources, verification processes, data analysis, and information presentation models. In addition, internal newsroom factors that affect the quality of data journalism implementation are also empirically described.

General Characteristics of Whoosh High Speed Train News

The results of the data search showed that the three media intensively reported on the Whoosh High Speed Train, especially in the period leading up to and after the initial operation. The news covers issues of development costs, funding schemes, travel time, number of passengers, occupancy levels, as well as economic and environmental impacts. However, not all news contains the characteristics of data journalism comprehensively.

Based on content analysis, news is classified into three categories, namely data-driven informative news, data-driven analytical news, and news with minimal data usage. The distribution of these categories shows differences in editorial orientation between media.

Table 1. Categories Whoosh High Speed Car News

MEDIA	DATA-DRIVEN INFORMATIVE	DATA-DRIVEN ANALYTICS	DATA MINIMAL
KOMPAS.COM	8	10	4
TEMPO.CO	6	12	3
DETIK.COM	14	5	6

Table 1 shows that Tempo.co have the highest proportion in the data-driven analytical news category, while Detik.com are more dominant in informative news with limited data usage.

Sources and Types of Data Used

At the data discovery stage, the results of the study showed variations in the use of data sources between media. Kompas.com and Tempo.co use relatively diverse data sources, including official government documents, state-owned enterprise reports, data from the Ministry of Transportation, and the results of independent agency studies. Instead, Detik.com rely more on data sourced from official statements and press conferences.

Tempo.co show a tendency to explicitly mention the origin of the data, including the time of release and the data provider institution. Kompas.com also use official data, although it is not always accompanied by detailed methodological explanations. Detik.com in some cases present numbers without a clear source information.

Table 2. Types of Data Sources in News

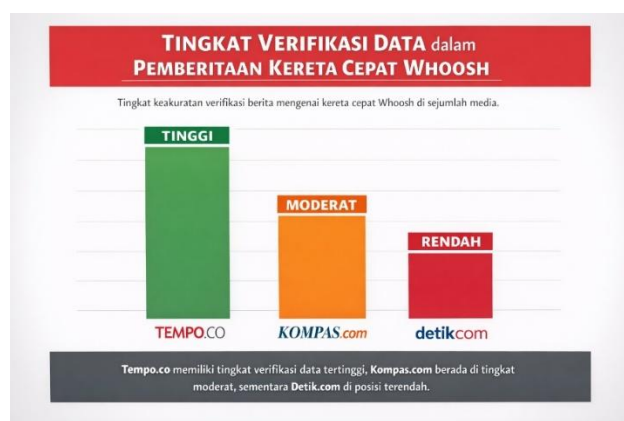
TYPES OF DATA SOURCES	KOMPAS.COM	TEMPO.CO	DETIK.COM
GOVERNMENT/SOE DOCUMENTS	Height	Height	Medium
OFFICIAL STATEMENT	Height	Medium	Height
INDEPENDENT RESEARCH REPORT	Medium	Height	Low
DATA WITHOUT EXPLICIT REFERENCES	Low	Low	Height

Data Verification and Checking Practices

The results show that data verification practices have not been applied evenly. Tempo.co most consistently cross-check data by comparing government claims and alternative data from observer agencies or audit reports. In some news, the verification process is displayed explicitly through the comparison of different numbers and statements.

Kompas.com demonstrate verification practices at a moderate level, especially by confirming data to more than one source. However, the verification process is not always explicitly described in the news text. Detik.com relatively rarely feature an advanced verification process and tend to use a single primary source.

Figure 1. The Level of Data Verification in Whoosh High Speed Train News



The Form and Depth of Data Analysis

Data analysis is the main differentiator of the quality of data journalism between media. Tempo.co consistently conduct comparative and trend analyses, such as comparing project costs with similar projects in other countries or analyzing the development of passenger numbers in a given period. Kompas.com conduct contextual analysis that links data to national and regional conditions. Detik.com generally present data in the form of raw numbers without further analysis. Data is used as a complement to information, not as the main basis for the development of news narratives.

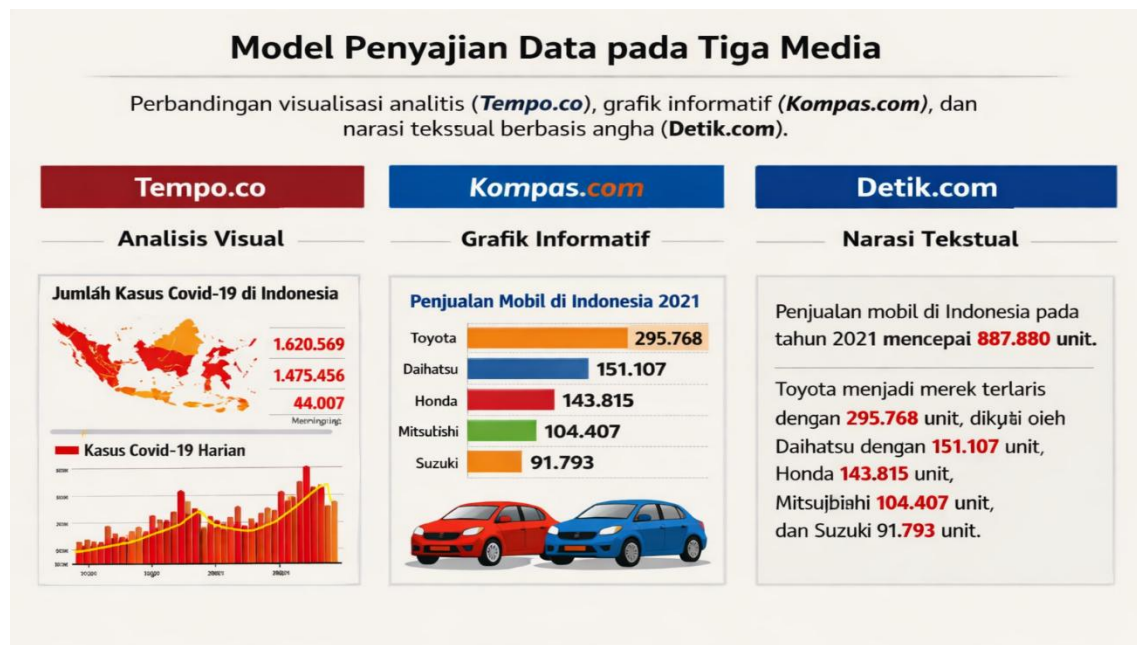
Table 3. Forms of Analysis of Found Data

FORM ANALYSIS	KOMPAS.COM	TEMPO.CO	DETIK.COM
COMPARATIVE ANALYSIS	Medium	Height	Low
TREND ANALYSIS	Medium	Height	Low
PRESENTATION OF RAW FIGURES	Low	Low	Height

Data Presentation and Visualization Model

In the aspect of data presentation, Tempo.co most often use infographics, comparison tables, and data-driven visualizations. This visualization serves as the main tool in explaining the complexity of the data to the reader. Kompas.com use static charts and simple tables that are integrated with text narratives. Detik.com is relatively minimal in the use of data visualization and relies more on text narratives with direct mention of numbers.

Figure 2. Data Presentation Model on Three Media



Newsroom Internal Factors

The results of the study also identified internal newsroom factors that affect the quality of data journalism implementation. These factors include journalists' data literacy competencies, the existence of a special data team, and editorial orientation. Tempo.co has an organizational structure that supports data journalism through research and data teams. Kompas.com integrate data functions within the general editorial team. Detik.com emphasizes the speed of news production.

Table 4. Internal Factors Affecting Data Journalism

INTERNAL FACTORS	KOMPAS.COM	TEMPO.CO	DETIK.COM
JOURNALIST DATA LITERACY	Medium	Height	Low
DEDICATED DATA TEAM	Limited	There	None
PRODUCTION SPEED PRIORITY	Medium	Low	Height

DISCUSSION

The findings of this study show that the application of data journalism in the news of the Whoosh High Speed Train in national online media has not taken place uniformly and comprehensively. The variation in practices between Tempo.co, Kompas.com, and Detik.com indicates that data journalism in Indonesia is still in a transition stage, where the use of data has become part of the news routine, but has not been fully internalized as a complete journalistic framework. To understand this phenomenon more deeply, the following discussion relates the results of the research to the data journalism framework of Gray, Chambers, and Bounegru, gatekeeping and verification theory, and media innovation theory.

In the perspective of the Data Journalism Framework put forward by Gray, Chambers, and Bounegru, data journalism is understood as a layered process that includes four main stages, namely finding data, examining data, analyzing data, and presenting data (Ulfa, 2018). The findings of this study show that most national online media have not implemented these four stages consistently and balanced. Tempo.co emerged as the media that most closely resembled the ideal data journalism practice, because it was relatively consistent in carrying out all of these stages. This media not only cites data from official sources, but also cross-checks, comparative analysis, and presents it in the form of visualizations that strengthen public understanding.

Instead, Kompas.com shows a partial application of the data journalism framework. This medium is relatively strong at the stage of finding data and presenting information, but data analysis is still moderate and more contextual than analytical. Kompas.com tend to use data to enrich news narratives, rather than as the main foundation in building journalistic arguments. Meanwhile, Detik.com shows the most limited application of data journalism, where data is more often presented as raw numbers without adequate analysis and verification processes. This pattern confirms Gray's view. that data journalism is often

reduced to mere visualization or mention of numbers, without transforming data into meaningful public knowledge.

The difference in the application of the data journalism framework is also closely related to the gatekeeping process in the newsroom. The gatekeeping theory put forward by Shoemaker & Vos, (2009) emphasizes that news is the result of a series of selective decisions influenced by individual factors, organizational routines, media institutions, and broader social contexts. The findings of this study show that the decision to use or not to use data in depth in the news of the Whoosh High Speed Train is greatly influenced by the editorial orientation of each media. Tempo.co, with its tradition of investigative and analytical journalism, tends to open "gates" for data to become a major actor in the news narrative. In contrast, Detik.com, which is oriented towards the speed and volume of production, is more selective in opening up space for data analysis that requires more time and resources.

In the context of gatekeeping, data is not neutral, but must go through a selection and interpretation process by journalists and editors (Dharmajaya & Setiawan, 2024). The findings of this study show that in Detik.com, data that passes the gatekeeping process is generally data that is easy to cite, sourced from officials, and does not require further verification. This reflects gatekeeping that is oriented towards production efficiency. Instead, Tempo.co point to stricter gatekeeping of data, where each number is treated as a claim that needs to be verified and contextualized. Kompas.com is in the middle position, with gatekeeping relatively balanced between the importance of speed and accuracy.

Verification aspects emphasized by Kovach & Rosenstiel, (2007) It is also the main differentiator of the quality of data journalism in this study. Verification is understood as the intellectual discipline of journalism that ensures that the information presented is trustworthy. The study's findings suggest that data verification practices are most clearly visible in Tempo.co, especially through comparisons between government claims and alternative data from observer agencies or independent reports. This practice strengthens the function of journalism as a provider of information oriented to the public interest, not just a conveyor of official statements.

On the contrary, the lack of data verification in Detik.com has the potential to weaken the function of journalism as a tool of social control. When data is presented without cross-checking or contextual explanation, the public risks receiving information partially or even misleadingly. In strategic issues such as the Whoosh High Speed Train, this condition can reinforce the polarization of public opinion or create perceptions that are not based on comprehensive facts. These findings corroborate Kovach and Rosenstiel's argument that without verification, journalism loses its epistemological legitimacy.

The depth of data analysis of different media can also be understood through the lens of media innovation theory from (Küng, 2023). This theory emphasizes that media innovation is not only related to the adoption of technology, but also changes in

organizational culture, work structure, and editorial strategy. Tempo.co seems to be more successful in internalizing data journalism innovations because it has a work culture that supports collaboration between journalists, researchers, and visual designers. The existence of a research and data team allows this media to process data in a more in-depth and systematic manner.

Kompas.com shows a more gradual form of media innovation. The integration of data into the work of the editorial is carried out without forming a completely separate data unit. This model allows for flexibility, but it also limits the depth of analysis as journalists have to divide attention between routine reporting and data processing. Detik.com, on the other hand, shows media innovation that focuses more on the speed of distribution and optimization of digital platforms, rather than on the development of data journalism as an editorial practice. This shows that media innovation is selective and influenced by the business model and target audience of each media.

From the point of view of media innovation theory, the variation suggests that the application of data journalism is highly dependent on managerial commitment and organizational investment. Data journalism requires time, skills, and technological infrastructure that doesn't always align with the logic of fast-paced news production (Laksmono & Nurhaliza, 2025). The findings of this study reinforce the argument that without structural support, data journalism risks becoming a marginal practice that only appears on certain issues or certain media.

An important implication of these findings is that the role of data journalism in informing the public has not been fully optimal, especially on strategic infrastructure issues such as the Whoosh High Speed Train. When data is used comprehensively and verified, data journalism is able to help the public understand the complexity of a project, including its benefits and risks. However, when data is presented only as raw numbers, the educational and critical functions of journalism become limited. This shows that the quality of public information is not only determined by the existence of the data, but by the way the data is processed and presented. By linking empirical findings with the Gray framework, gatekeeping theory, and media innovation theory, this study shows that data journalism is a multidimensional practice influenced by epistemological, organizational, and structural factors. Tempo.co represent a relatively ideal model of data journalism in the current Indonesian context, while Kompas.com and Detik.com reflect the challenges and limitations faced by online media in fully adopting the practice.

Conceptually, these findings enrich the study of data journalism by showing that the application of the data journalism framework cannot be separated from the dynamics of gatekeeping and the capacity of media innovation. Practically, the results of this study confirm the importance of strengthening data literacy in newsrooms, developing transparent verification mechanisms, and organizational support for editorial innovation. Without these measures, data journalism risks becoming just a visual trend, not a substantive instrument in improving the quality of public information. Thus, this

discussion confirms that data journalism has great potential in informing the public facts accurately and meaningfully, but the realization of this potential is highly dependent on how the media manages the gatekeeping process, implements verification disciplines, and develops organizational innovation in a sustainable manner. These findings also open up space for further research to explore the relationship between data journalism, public trust, and the quality of democratic deliberations in the digital media era.

CONCLUSION

This study examines the role of data journalism in conveying public facts through news coverage of the Whoosh High-Speed Train project on three major online media platforms in Indonesia: Kompas.com, Tempo.co, and Detik.com. The findings show that data journalism has not been applied evenly across media organizations and is still inconsistent in depth, rigor, and editorial integration. Although data has become a visible element in infrastructure reporting, its function varies significantly depending on newsroom capacity, editorial orientation, and an organization's commitment to verification and analysis.

The study concludes that data journalism contributes meaningfully to public understanding when applied as a comprehensive journalistic process, rather than just an additional visual or numerical element. Media that consistently follow the stages of data discovery, verification, analysis, and presentation are better able to transform raw data into contextual public knowledge. Instead, the use of partial or surface data risks simplifying complex infrastructure issues into isolated numbers, potentially limiting critical public engagement. These findings reinforce the argument that the epistemic value of data journalism does not lie in the existence of data itself, but rather in the journalistic practices that surround its use.

Theoretically, this study expands the study of data journalism by integrating the Data Journalism Framework with the perspective of gatekeeping and media innovation, showing how editorial decision-making and organizational structure shape the quality of data-driven reporting. These findings highlight that the gatekeeping process determines whether data becomes central to the journalistic narrative or remains marginal, while media innovation influences the sustainability of data journalism practices in digital newsrooms.

In practical terms, the study suggests that online media organizations invest in data literacy training, cross-functional collaboration in newsrooms, and transparent verification standards to strengthen data journalism practices. For policymakers and public institutions, improving data accessibility and standardization is critical to supporting accountable media reporting. Socially, strengthening data journalism is crucial to enable citizens to participate critically on strategic infrastructure issues. Future research can explore audience acceptance of data journalism and its impact on public trust and democratic deliberation in a digital media environment.

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