

UNDERSTANDING THE IMPACT OF PRECISION JOURNALISM ON INDONESIAN JOURNALISTS IN THE DIGITAL ERA

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ABSTRAK

Penelitian ini mengkaji peran jurnalisme presisi di tengah meningkatnya tantangan misinformasi dan dilema etika dalam proses produksi berita *online*. Selain itu juga dalam rangka membentuk sikap dan praktik para jurnalis Indonesia di era digital. Tujuan dari Penelitian ini adalah mengkaji bagaimana jurnalisme presisi berfungsi sebagai metode ilmiah dalam produksi berita serta memahami persepsi dan pengalaman jurnalis Indonesia dalam menerapkan pendekatan tersebut. Dengan menerapkan studi kasus kualitatif, wawancara mendalam yang melibatkan 9 informan yakni jurnalis profesional, editor dan analis data yang berasal dari tiga platform media digital terkemuka di Indonesia yakni: Tempo.co, Kompas.com dan Katadata.co.id. Temuan pada penelitian ini mengungkapkan bahwa jurnalisme presisi berakar pada penerapan metode penelitian ilmiah dan autentikasi data yang akurat, yang berkontribusi terhadap peningkatan kredibilitas berita serta mendorong praktik peliputan yang etis. Para responden menekankan bahwa potensi jurnalisme presisi sangat krusial dalam menjembatani kesenjangan antara penyebaran informasi yang masif dengan akurasi konten yang dihasilkan, serta mengidentifikasi hambatan sistemik yang terjadi seperti rendahnya literasi data, keterbatasan sumber daya dan kebutuhan tim kerja yang solid. Penelitian ini menyimpulkan bahwa jurnalisme presisi tidak hanya merupakan perkembangan metodologis di era digital namun juga menjadi strategi kunci dalam memulihkan kepercayaan publik dan memperkuat akuntabilitas profesional di tengah lanskap media digital di Indonesia yang mengalami perkembangan yang sangat pesat.

Kata kunci

Etika Jurnalisme, Indonesia, Jurnalisme Data, Jurnalisme Presisi, Media Digital

ABSTRACT

This study investigates the role of precision journalism amidst the growing challenges of misinformation and ethical dilemmas in online news production. In addition, it aims to shape the attitudes and practices of Indonesian journalists in the digital era. Employing a qualitative case study design, in-depth interviews were conducted with 9 informants that consist of journalists, editors and data analysts from three leading digital media news platform : Tempo.co, Kompas.com, and also Katadata.co.id. The findings reveal that precision journalism was grounded in scientific research methods and accurate data authentication which enhances news credibility and fosters ethical reporting practices. The respondents underscored its potential to bridge gaps between rapid spread of information and its accuracy while also identifying systemic barriers, such as limited data literacy, resource constraints, and solid teamwork. Conclusively, the research concludes that precision journalism serves not only as a methodological advancement in digital media era but also a pivotal strategy for restoring public trust and professional accountability in Indonesia Journalists rapidly evolving digital media landscape.

Keywords

Data Journalism, Digital Media, Indonesia, Journalism Ethics, Precision Journalis.

Introduction

The digital age has transformed journalism in Indonesia, presenting new opportunities and challenges for press freedom, law, and ethics (Emeraldien et al., 2021; Maharani, 2024). The rapid dissemination of news through online platforms and social media has led to ethical dilemmas, particularly concerning the accuracy and verification of information (Perreault & Ferrucci, 2020; Triwulan et al., 2024). Studies have shown high levels of inaccuracy in Indonesian online media, with grammatical errors and unbalanced reporting being prevalent issues (Emeraldien et al., 2021). The pressure to deliver news quickly in the digital era often conflicts with adherence to journalistic ethical codes, highlighting the need for updated ethical guidelines that respond to the evolving media landscape (Fahmy Fotaleno et al., 2024). These challenges underscore the importance of maintaining journalistic integrity while adapting to technological advancements, as the media continues to play a crucial role in public discourse and democracy in Indonesia (Maharani, 2024).

The growing challenges of digital journalism in Indonesia, particularly concerning accuracy and verification, have led to an increased focus on data journalism as a potential solution. However, data journalism in Indonesia faces unique challenges, including issues with data credibility, digital divide, and journalists' competence in data skills (Aunul et al., 2024). Despite these challenges, data journalism offers opportunities to improve the quality of online journalism by providing in-depth, meaningful, and contextual narratives (Utami, 2017). The practice of "trial by the press" persists in online media despite being ethically prohibited, highlighting the tension between institutional regulations and the demands of digital journalism (Lindén, 2017; Wahyudi & Sujoko, 2024).

To address these challenges, journalists must navigate complex ethical dilemmas while upholding press freedom and combating misinformation (Maharani, 2024). Contextual and situational elaboration of institutional regulations and online media working mechanisms can help journalists avoid ethical pitfalls in the digital age (Wahyudi & Sujoko, 2024). This is where precision journalism becomes increasingly relevant. By integrating social science research techniques and data-driven approaches, precision journalism offers a solution to mitigate inaccuracies and uphold journalistic integrity (Kusumawati, 2023). Precision journalism, introduced by Philip Meyer in the 1970s, emphasizes the use of social science research techniques to enhance reporting accuracy and depth (Meyer, 1991). This approach has gained renewed significance in the digital age, where data-driven journalism based on big data analytics is emerging in Indonesia, albeit with challenges in knowledge and technology adoption (Hidayat & Hidayat, 2020). The application of precision journalism principles during critical times, such as the COVID-19 pandemic, has been demonstrated by some Indonesian media outlets, showcasing its potential to inform and alert the public while also highlighting the risk of sensationalism (Benmetan & Nathania, 2023). As information from institutional sources becomes increasingly complex and numerical, training in precision journalism techniques is becoming a practical asset for reporters, with newspapers ranging from large metropolitan dailies to smaller local publications finding quantitative methods useful (Farid, 2023; Utami, 2017).

In Indonesia, a few online media platforms have demonstrated efforts to incorporate precision journalism by verifying sources, using valid data, and presenting

in-depth analyses (Hidayat & Hidayat, 2020). Katadata.co.id, for instance, focuses on economic and business news, integrating statistical data, infographics, and analytical reports to provide a comprehensive perspective on economic developments (Muthmainnah et al., 2022). Similarly, Kompas.com, owned by Kompas Gramedia, delivers national and international news while offering in-depth analyses on economic, technological, and cultural issues (Kusumawati, 2023). Tempo.co, known for its investigative journalism, upholds accuracy and independence in its reporting by utilizing meticulous fact-checking and data verification methods (Ramadhani, 2020). These media outlets have set a precedent for data-driven journalism in Indonesia. Nevertheless, broader efforts are needed to foster precision journalism, including journalist training in data mining, data analysis, and visualization (Muthmainnah et al., 2022). Workshops and professional development programs could bridge the gap between traditional reporting and data-oriented journalism, ultimately improving the quality of news reporting and strengthening public trust in media (Z Hidayat & Debra Hidayat, 2020).

At the same time, Indonesia's legal framework governing online media is primarily outlined in Law No. 40 of 1999 on the Press and Law No. 11 of 2008 on Electronic Information and Transactions (UU ITE) (Fakih, 2024). These regulations emphasize the importance of accuracy, objectivity, and factual integrity in journalism. While the Press Law safeguards journalistic freedom, the UU ITE law penalizes the dissemination of false or misleading information, imposing legal consequences on media organizations that fail to verify their reports properly (Ghofur, n.d.). Despite existing regulatory measures, online media in Indonesia frequently face legal challenges due to non-precise reporting, including defamation cases, privacy violations, and the spread of misinformation (Dunan et al., 2022).

Several notable incidents illustrate the consequences of journalistic negligence. In 2019, *Harian Indopos* published an article titled "*Ahok to Replace Ma'ruf Amin*," which was deemed misleading by the Press Council and found to violate journalistic ethics. Similarly, in 2020, *Banjarhits* faced legal consequences under the *UU ITE* after publishing a report titled "*Land Seized by Jhonlin, Dayak Complain to South Kalimantan Police*," which contained ethnic and religiously sensitive content. Another case occurred in 2021 when *Detik.com* was subjected to legal action for its articles "*Funds Released for Governor Wahidin*" and "*Ghost Islamic Boarding Schools Receiving Banten Grant Funds*," which were found to breach ethical journalism standards.

These incidents underscore the critical need for media organizations to uphold precision journalism principles to mitigate legal risks and maintain ethical integrity. Implementing fact-checking mechanisms, strengthening editorial oversight, and ensuring strict compliance with journalistic codes of conduct are essential steps in fostering responsible and accurate reporting (Jones & Jones, 2021).

In light of this context, this research aims to explore the role of precision journalism as a scientific approach to news production and to understand how journalists in Indonesia perceive and experience this methodology. To achieve this, two primary research questions have been formulated. The first question seeks to examine how journalists from notable online media outlets in Indonesia perceive the role of precision journalism in news production. This question is crucial as it uncovers the understanding and significance of precision journalism within the contemporary journalistic landscape in Indonesia, where the digital shift is rapidly transforming news practices. The second

question delves into the experiences of journalists, specifically how their personal and professional encounters influence their attitudes toward precision journalism. Understanding these experiences is essential as it reveals the underlying factors that shape how journalists adopt, resist, or modify scientific approaches to news reporting. Together, these research questions aim to offer a comprehensive understanding of the dynamics surrounding precision journalism in Indonesia, which is vital for both the academic field of journalism and the evolving practices of news production in a digital media environment.

The urgency of this research stems from the increasing prevalence of misinformation and disinformation in Indonesian online media. Online media in Indonesia exhibit high levels of inaccuracy, particularly in economic and business news, with speed often compromising balanced reporting (Emeraldien et al., 2021). While online media strive to balance novelty and clarity, profit motives often overshadow adherence to journalistic principles (Rizkiansyah et al., 2020). However, the digital landscape also poses new legal and ethical challenges for Indonesian media, including issues of ownership, censorship, and misinformation (Maharani, 2024; Robinson et al., 2021). As the media adapts to these changes, maintaining press freedom and ethical standards while combating misinformation remains crucial for upholding democracy and public discourse in Indonesia's digital age. In addition to its legal and journalistic significance, this study holds broader implications for media literacy and public trust in journalism. As digital platforms become primary sources of news consumption, ensuring that these platforms adhere to high journalistic standards is essential for maintaining credibility.

Method

This study employs a qualitative approach with a case study design to answer the research questions. By focusing on how online media outlets in Indonesia implement the principles of precision journalism, especially in terms of accuracy and information verification, in-depth interviews and data coding manually were conducted with journalists and editors from three leading digital media platforms: Tempo.co, Kompas.com, and Katadata.co.id. Tempo.co becoming one of Indonesia's first online news portals that demonstrating adaptability in the digital era. Kompas.com launched its online presence in 1995 which making it one of Indonesia's earliest adopters of digital news dissemination. Meanwhile, Katadata.co.id focuses on delivering data driven news and research particularly in economics and business sectors. In addition,, these media outlets were selected also based on specific criteria: (1) their relevance to the study's focus on precision journalism, (2) their status as prominent national digital media platforms with extensive readership across Indonesia, and (3) their use of big data and computational analysis in news production. These criteria make them representative of digital media organizations in Indonesia and suitable for understanding the application of precision journalism principles.

The interview questions centered on the journalists' and editors' understanding and application of precision journalism, their experiences with using data-driven methodologies in reporting, and how they approach accuracy and information verification in their daily work. These questions explored their perceptions of the role of precision journalism in improving news production, as well as the challenges they face in maintaining accuracy and credibility within the fast-paced digital media environment.

Furthermore, the interviews examined how journalists' and editors' experiences influenced their attitudes toward adopting precision journalism and whether they believed it was a sustainable practice in the context of online media in Indonesia. The gathered data provided insights into the practical implementation of precision journalism, its effectiveness, and its impact on journalistic attitudes toward scientific approaches to news production.

Research Informants: (1) DataAnalyst, Tempo.co (code:i1). (2) Reporter, Tempo.co (code:i8). (3) Reporter, Tempo.co (code:i4). (4) Editor, Kompas.com (code:i2). (5) Reporter, Kompas.com (code:i5). (6) Reporter, Kompas.com (code:i6). (7) Editor, Katadata.co.id (code:i3). (8) Reporter, Katadata.co.id (code:i7). (9) Data Research, Katadata.co.id (code:i9)

Result and Discussion

Precision Journalism as a Scientific Approach to News Production

Findings from interviews with media practitioners at Tempo.co, Kompas.com, and Katadata.co.id highlight the growing importance of precision journalism in the digital era. This journalistic approach integrates scientific research methods into news production, enabling journalists to ground their reporting in credible and verifiable data rather than speculation or subjective interpretation. This perspective aligns with Meyer's (1991) concept of precision journalism as a bridge between journalism and the social sciences. By applying the logic of research design—including sampling, hypothesis formulation, measurement, and statistical analysis—precision journalism enhances the accuracy and objectivity of news reporting. A Data Analyst from Tempo.co (i1) emphasized that precision journalism is fundamentally a research-based practice, requiring journalists to possess a comprehensive understanding of scientific methodologies. These methods guide journalists in identifying key issues, mapping data needs, and determining how to process and present information effectively. However, a significant challenge in implementing this approach lies in the limited availability of skilled personnel with research competencies. As a result, collaborative teamwork becomes essential for the successful application of precision journalism in digital newsrooms.

"Precision journalism is more about a method—how a news story can be presented in its entirety with the support of valid data from credible sources. Precision journalism requires journalists to have a comprehensive understanding of scientific research methods because its basic knowledge lies there. Without a fundamental understanding of research methodology, this concept cannot be practiced. This is one of the challenges for us and other media outlets—the availability of resources with such competencies (i.e., scientific research skills). Working with the concept of precision journalism is a team effort; it cannot be done by solo. In the past, gathering information and data was solely the responsibility of journalists in the field, without guidance from scientific techniques or methods. But with this concept, we now have guidelines and frameworks. It provides clarity on how to identify issues, map the focus of a problem, determine the necessary data, identify relevant references, and decide how to process and present the data. This includes how to display data effectively to internal stakeholders as well as to the public." (i1, interview on October 8, 2023)

The findings indicate that teamwork plays a pivotal role in the implementation of precision journalism. Journalists are required to collaborate closely with data analysts, researchers, and editors to ensure the accuracy and objectivity of their reporting. In line

with this, the Editor from Kompas.com (i2) emphasized that precision journalism relies heavily on the integration of scientific research methods into news production. At Kompas.com, the Litbang Kompas (Kompas Research and Development Team) contributes by providing survey and research-based data, which are further enriched through interviews and the analysis of relevant documents. This methodological integration allows journalists to validate both qualitative and quantitative data, reinforcing a commitment to accuracy over speed. Such practices reflect a broader discourse on the importance of balancing immediacy and verification in digital journalism (Perreault & Ferrucci, 2020). In this context, journalists are expected not only to collect facts but also to interpret and contextualize data in a meaningful way a process that is systematically structured through the principles of precision journalism.

"The method used to gather information is, of course, related to the type of news we produce. We have the Kompas Research and Development (Litbang Kompas) team, which supplies survey or research data. We also conduct interviews. However, gathering information is not just about interviews—it must often be combined with reviewing relevant public documents. This combination is precisely what Precision Journalism provides, and it is what we have adapted in our work environment. The Precision Journalism method, which leans more toward scientific research methodology in the news production process, serves as a guide for journalists to work scientifically in obtaining both qualitative and quantitative data and determining how that data should be processed and utilized." (i2, interview on October 23, 2023)

Furthermore, the emergence of digital journalism has accelerated news consumption patterns, with audiences demanding instant access to information. However, as the Editor from Katadata.co.id (i3) pointed out, this digital shift has also led to the rise of pragmatic journalism, where the pursuit of clicks sometimes takes precedence over data accuracy. The Editor from Katadata.co.id (i3) noted that the rapid evolution of the internet has significantly impacted journalism, creating pressure to publish news quickly. However, this has also led to pragmatic journalism where accuracy is sometimes compromised for clicks. Precision journalism, as conceptualized by Philip Meyer, provides a structured approach to data collection, analysis, sorting, and visualization, ensuring that news remains credible.

"The rapid development of the internet has made it easier for people to access online media through mobile phones or gadgets. This demand for speed from the public can threaten media integrity because online mass media, in particular, may take a pragmatic approach—publishing content just for the sake of clicks, while data accuracy becomes secondary. You can see and read for yourself how the structure of most online news articles looks today. The question then is, how can this issue be addressed? One answer is the presence of Precision Journalism, which, if I'm not mistaken, was introduced by John Meyer. This concept has become a guide for us, both before and after news production. It provides guidelines on how to identify issues, how to collect and analyze data, how to sort the data, and how to present it visually." (i3, Interview on November 15, 2023)

The implementation of precision journalism is increasingly regarded as a strategic response to maintaining public trust in the digital era. As the demand for fast yet reliable information intensifies, media organizations are confronted with a critical dilemma: whether to uphold journalistic integrity—often referred to as the "gatekeeper ideal"—

or to yield to the pressures of click-driven content. This tension mirrors the broader conflict between market-oriented journalism and normative ethical standards, as highlighted by Fahmy Fotaleno et al. (2024), who argue that the pursuit of speed is frequently rewarded at the expense of accuracy. In this context, precision journalism emerges as a normative corrective, offering a principled framework that prioritizes accuracy, verification, and methodological rigor. By establishing structured guidelines for sourcing, analyzing, and presenting data, precision journalism serves as a powerful countermeasure against misinformation and reinforces the ethical foundations of responsible news production. There is an ongoing debate between journalistic freedom and accountability. Tempo.co (i1) follows a combination of existentialist and social responsibility approaches, ensuring that journalism remains independent yet accountable. This balance helps journalists act as reliable sources of information while serving the public interest.

Katadata.co.id (i3) allows its journalists to experiment with literary writing techniques while adhering to precision journalism standards. This flexibility encourages creativity and enhances storytelling, making news more engaging. This shift aligns with Arnon Grünberg's existentialist perspective, which advocates for journalistic freedom to explore new storytelling methods (Harbers, 2010). While traditional journalistic practices dominate, there is growing recognition of the importance of literary journalism in shaping public discourse.

"Katadata must stand out from conventional or print media. As one of the online mass media platforms, Katadata has remained relevant to this day because we have been able to establish that distinction. First, Katadata can maximize its broad reach in disseminating information that transcends geographical boundaries, age groups, genders, social statuses, demographics, as well as differences in understanding and orientation (psychographics). Second, the media's extraordinary ability to amplify messages. Third, we can discuss an idea or work from various perspectives. And with the agenda-setting function that remains within the framework of Precision Journalism, we have a broad opportunity to report on ideas or works." (i3, Interview on November 15, 2023).

One of the major challenges facing online journalism today is the rapid spread of unverified information. As noted by Kompas.com (i2), media outlets must continuously evolve and adopt advanced techniques to remain relevant in the fast-paced digital environment. Precision journalism offers a promising solution by prioritizing verification and objectivity, thereby ensuring that news content remains factual, credible, and trustworthy.

The adoption of precision journalism, however, necessitates a significant shift in the skill set required of contemporary journalists. While traditional journalism has emphasized storytelling, interviewing, and source management, precision journalism demands data literacy, critical thinking, and technical proficiency in using digital tools for data analysis and visualization. According to Utami (2017), the effectiveness of data journalism in Indonesia depends not only on access to open data but also on journalists' ability to process, analyze, and present data meaningfully. Without such competencies, even publicly available data may remain underutilized in shaping public discourse. Interviewees consistently acknowledged that digital journalists must now possess both editorial instincts and foundational knowledge in statistics, survey methodology, and

basic coding. For example, Katadata.co.id (i3) incorporates internal training sessions on data interpretation and visualization, underscoring the growing need for interdisciplinary competencies within newsroom teams. This integration of diverse skills reflects the hybrid nature of modern journalism, where practitioners must operate at the intersection of communication and data science to produce impactful and evidence-based stories.

Moreover, the successful implementation of precision journalism is heavily influenced by newsroom culture and organizational structure. Newsrooms that foster collaboration among journalists, researchers, designers, and data scientists are more likely to effectively embody the principles of precision journalism. This is supported by Lindén (2017), who emphasizes that institutional innovation is as critical as individual capability. The presence of data desks, in-house research divisions, and editorial support systems creates a systemic infrastructure that promotes both accuracy and accountability.

Tempo.co and Kompas.com, for instance, highlight the role of editorial leadership in cultivating a data-driven mindset. Editors function not only as content supervisors but also as facilitators who bridge investigative curiosity with methodological rigor. The establishment of dedicated research units such as Litbang Kompas exemplifies how institutional support can sustain long-term, data-informed reporting practices. Without such supportive ecosystems, efforts to implement precision journalism risk being superficial, inconsistent, or short-lived.

The rising prominence of precision journalism also carries important implications for journalism education and professional development. Echoing the concerns of Farid (2023), there is a pressing need to modernize journalism curricula by integrating data-centric methodologies, digital verification tools, and frameworks for ethical decision-making. Without pedagogical reform, precision journalism may become confined to well-resourced, elite newsrooms—widening the gap between national and regional media institutions.

Academic institutions and training centers must adapt by incorporating modules on quantitative and qualitative research methods, data storytelling, and digital media ethics. Many practitioners interviewed expressed concern that recent journalism graduates often enter newsrooms without adequate preparation for data-intensive reporting. This skills gap underscores the urgency of aligning journalism pedagogy with the realities of a media landscape increasingly shaped by misinformation, algorithmic amplification, and fragmented audiences. By embedding scientific thinking and methodological discipline at the core of journalism education, future journalists will be better equipped to uphold the principles of accuracy, accountability, and public service—values central to the ethos of precision journalism.

The Experience of Journalists and Its Impact on Their Attitudes Toward Precision Journalism

Journalism, as a profession, operates under the influence of political, economic, social, cultural, and technological developments worldwide. There is no doubt that journalism performs several functions in modern society, such as being a source of information, analysis, and commentary on current events. Journalists believe that journalism must be practiced in the workplace and cannot be taught. The preparation should equip them to become responsible journalists with both broad general knowledge and specialized knowledge essential to journalism. They must not only be

equipped with strong linguistic abilities but also with knowledge of technological advancements and changes in media reporting. However, understanding the best practices of precision journalism must align with professional and responsible media industry practices.

In the following interview with a reporter from Tempo.co (i4), the reporter shares their experience and knowledge as a journalist:

“When I first started as a journalist, my understanding of journalism was simply about gathering news. The 5W+1H formula seemed like essential knowledge for anyone in the profession, and I initially thought that was enough, regardless of whether someone had formal journalism education. However, that understanding was not enough as technology advanced, and the demand for fast yet accurate, factual, and objective reporting grew. Especially now, AI (Artificial Intelligence) has entered the media industry. Additional competencies are now needed” (i4, interview, October 13, 2023).

Next, a reporter from Kompas.com (i5) shares their knowledge and experience as a journalist:

“Times have changed, and so has the methodology. That’s the situation for journalists now. In the past, having technical knowledge of 5W1H was enough. Now, it’s a different story. Especially for journalists working at big media like Kompas. You’re not just responsible for interviewing sources; you also have to know how to gather supporting data. If a journalist doesn’t have the skill and knowledge to acquire that data, the media can’t use it. You must be ready to be replaced by someone new. So, we are required to have research skills, the ability to find data, and to identify reliable sources” (i5, interview, November 4, 2023).

A reporter from Kompas.com (i6) added:

“To improve our research competencies, Kompas provides training sessions, there's always an upgrade for the team. We're introduced to the use of Big Data, research methods, and the concept of precision journalism, which is more focused on scientific research techniques” (i6, interview, November 4, 2023).

Competence transfer refers to the ability to convey mass media messages to the audience. Technical competence includes basic computer skills, as well as handling the Internet and electronic databases. In addition to these general skills, journalists need specialized competencies in modern publishing and professional tools.

As a media company established in 2012, Katadata.co.id focuses not only on news production but also claims to be a provider of data and online research in the fields of economics and business. Since its inception, Katadata.co.id has applied precision journalism techniques in its journalistic work, as explained by a reporter from Katadata.co.id (i7):

“Katadata is a media business that presents news, information, data, and research results in-depth for the benefit of business leaders and policymakers, but packaged in a clear and attractive way to make it easy for the public to understand. Because of this, the news and information are not only presented in text form but also in visually engaging formats. Due to this approach, the people who work here are expected to have skills, especially how to work in scientific ways. We don't mess around; our data is often used by companies as references for their business decisions. So, the scientific research atmosphere is already established from the moment you start here. Working

scientifically in journalism is a must because the news we deliver is consumed by the public. To ensure the news is valid and objective, the foundation lies in how journalists gather data and information. If the method is sloppy, the news will be trash. I believe precision journalism has been applied at Katadata from the start, even though we may not specifically call it 'Precision Journalism' in our daily work" (i7, interview, December 3, 2023).

Media is the plural form of "medium," which broadly refers to all communication channels, including everything from printed paper to digital data, encompassing news, art, educational content, and any form of information that can reach or influence people, such as television, radio, books, magazines, and the internet.

Media also refers to various formats and communication technologies used to share information, ideas, and opinions with a wide audience. The media plays a crucial role in shaping public opinion, disseminating news, and facilitating social interactions. Therefore, mass media must be able to present facts and objectivity, all of which begin with procedures that apply scientific methods. Precision journalism emerges as an alternative solution to provide guidance for mass media in applying scientific procedures in news reporting.

Media plays a critical role in everyday life by helping to educate the public and allowing them to follow current events, both locally and globally. Media is the best platform for people to get information about what is happening around the world and in the future. By analyzing the information they receive, people can develop their own opinions about various concepts and topics, while also (ideally) respecting differing viewpoints. Media is also crucial for education, as it helps children and adolescents develop critical thinking by teaching them to consider multiple perspectives. Additionally, media serves as a watchdog, investigating and reporting violations or policy inconsistencies.

The following interviews from each of the media outlets involved in this research describe the procedures related to the research process using scientific methodology. These departments are called different names at each subject of the research. Tempo.co has a Data Team, Kompas.com has a Research and Development (Litbang) division, and Katadata.co.id has a Data Research and Quality Content team. An excerpt from an interview with a Data Analyst from Tempo.co (i8) states:

"At our place (Tempo.co), we call it the Data Team. The core team consists of 4 people, and we are also supported by 12 staff members who all have competencies in data analysis, including data scientists and a solid understanding of research methods" (i8, interview, October 27, 2023).

Tempo.co's Data Team works through various stages, including planning, data collection, verification, validation, and data visualization. As explained by the informant:

"Our work starts at the planning stage. This is where we conduct research and analysis to identify trending or controversial topics; collect relevant information; validate the data by cross-checking across multiple sources; then edit and proofread to correct any writing errors; and finally, test and evaluate the content with the editorial team to ensure quality, feasibility, and continuity in news stories" (i8, interview, October 27, 2023).

Kompas.com has a Research and Development (Litbang) division. Litbang Kompas helps the editorial team by enriching content and adding research. According to informant i2:

“Litbang Kompas is a division at the daily Kompas that assists the editorial team with content enrichment for reporting and adding research. Under Litbang, we have a special division called KompasData, managed by the Data and Information Center, which is under Litbang. KompasData has been the portal for data and information for Kompas since 1965” (i2, interview, November 4, 2023).

Litbang Kompas works by applying scientific procedures at each stage, from planning to data visualization. As informant i2 mentioned:

“I’ve worked in Litbang Kompas. It’s the Data Library, the initial reference data source used by the entire Kompas network. Not only Kompas.com, but also Harian Kompas, Kompas TV, Sonora.id, and other Kompas media subsidiaries use it. Our job is to continuously research and analyze the latest information, then obtain the data to validate that information. We involve Kompas journalists in data collection, but always following scientific methods to ensure the data is correct, valid, factual, and objective. We also use big data from the internet. For survey data visualization, Litbang Kompas is responsible for presenting it. Other data visualizations are handled by each Kompas network and used to base the news content” (i2, interview, November 4, 2023).

A similar procedure was shared by a Data Research & Quality Content staff member from Katadata.co.id (i9):

“If the question is ‘Who is responsible for data search and analysis?’ at our media, there are several sections that do that. There’s the Research & Content Strategist, Analyst, Survey, and Data teams. Within our division, we handle data search and analysis, and we’re responsible for publishing credible, accurate, factual, and objective information. We regularly review and assess the data. In fact, from day one, Katadata has been adopting precision journalism” (i9, interview, December 3, 2023).

The adaptation of journalists to precision journalism practices is not merely an individual journey but is shaped significantly by the institutional culture and peer learning processes within the newsroom. Several informants described how informal mentoring and internal workshops facilitated knowledge transfer from experienced reporters or data analysts to newer staff. This horizontal flow of knowledge builds collective capacity and reinforces a culture of accuracy and accountability. For example, Katadata.co.id (i9) emphasized the value of routine internal discussions where staff members analyze case studies of successful data-driven reporting to refine their approaches. These internal learning ecosystems contribute to the normalization of scientific practices in journalistic routines, especially in digital-first media environments where traditional journalism training may fall short of current demands.

Furthermore, the willingness of journalists to embrace precision journalism is often influenced by their exposure to interdisciplinary collaboration. Journalists who have worked closely with statisticians, social researchers, or data scientists tend to develop a deeper appreciation for methodological rigor and are more inclined to embed it in their reporting. In the case of Tempo.co and Kompas.com, journalists working in tandem with research and data teams reported a shift in their perception of news production—from a task centered on narrative construction to one that involves

systematic inquiry and evidence verification. These collaborations not only improve the quality of content but also foster a shared responsibility for truth-telling in an increasingly complex and data-saturated information landscape.

Finally, integrating precision journalism into everyday journalistic practice holds important implications for media credibility and long-term sustainability. In an era characterized by public distrust in news and the proliferation of misinformation, precision journalism offers a mechanism for rebuilding audience confidence through transparent, evidence-based reporting. All three media outlets studied—Tempo.co, Kompas.com, and Katadata.co.id—recognized the growing importance of producing content that can withstand public scrutiny and algorithmic manipulation. By grounding their editorial processes in scientific methods, these media organizations position themselves as trusted sources in a competitive digital ecosystem. This not only enhances their public legitimacy but also secures their relevance in a future where journalistic quality, not just speed or virality, becomes the critical currency of survival.

Conclusion

The growing relevance and necessity of precision journalism in Indonesia's digital media landscape face unique challenges, including issues with data credibility, digital divide, and journalists' competence in data skills. In order to encounter the high spread of increasing in misinformation and ethical breaches, precision journalism offers a scientific, data-driven approach that reinforces journalistic integrity, accuracy, and public accountability. Through case studies of Tempo.co, Kompas.com, and Katadata.co.id, the findings demonstrate the integrating social science methodologies into newsroom practices that enables journalists to produce more credible, verifiable, and impactful news content. The implementation of precision journalism in these media outlets not only addresses the shortcomings of conventional reporting, such as speculative narratives and speed over accuracy dilemmas but also fosters a newsroom culture to be conducted in collaboration, research literacy, and ethical responsibility. However, the adoption of this approach remains uneven due to disparities in resources, skills, and lack of institutional support. Moreover, this research enriches academic discourse on precision journalism by offering empirical insights into how Indonesia digital media adopt scientific methods to enhance accuracy and uphold ethical standards in the accelerating digital sphere. Principally, every journalists need to upgrade their personal experiences and training opportunities that influence their capacity and capability in adopting precision journalism practices. As digital media continues to evolve, this study urges media institutions, journalism educators and policymakers to invest in capacity building efforts and strategies such as data journalism workshops, research skill training, and editorial support systems to enclose precision journalism as a standard practice in order to help the Indonesian media ecosystem to be better uphold press freedom, elevate content quality, and reinforce public trust in journalism. Yet, there is a limitation on this research that lies in its focus on only three major media platform which may not fully capture the diverse practices and challenges faced by smaller regional digital news organizations in Indonesia.

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