Data Journalism in Indonesia in the Time of Hoaxes

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Certificate of Original Authorship

I, Adek Roza, declare that this thesis is submitted in fulfilment of the requirements for the award of Doctor of Philosophy in the School of Communication, Faculty of Arts and Social Sciences, at the University of Technology Sydney.

This thesis is wholly my own work unless otherwise referenced or acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

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Abstract

News media outlets in Indonesia have been struggling to maintain their businesses and roles in society in these challenging times. News outlets have dealt with the digital disruption that has been decimating the news industry during the past ten years. In that period, Indonesia has also held three contentious elections – the presidential elections of 2014 and 2019 and the Jakarta gubernatorial election of 2017 – all of which were affected by hoaxes and disinformation on social media platforms. Hence, news media outlets striving to find sustainable business models are now facing a complex information ecosystem that demands rigorous verification.

This thesis examines how local Indonesian media outlets have adopted data journalism to fight against hoaxes and disinformation and to support their businesses. It also explores how some government institutions have implemented data journalism skills to improve their websites and public communications. Through a thematic analysis of rich natural data, semi-structured interviews, and a case study of five online news outlets, this research has revealed the changes brought by data journalism in Indonesian newsrooms and how agents outside the journalistic field are influencing the development of data journalism.

After presenting the current news media situation in Indonesia as a background and applying the propaganda model, this study demonstrated the challenges the news industry players faced in the wake of the digital disruption caused by the arrivals of new players in the journalistic field. The established players have been forced to improve their journalism products by adopting data journalism. As well, the impact of the government's micro-level policy and human resources on data availability is a key obstacle to the performance of data journalism. Yet, these obstacles are not discouraging journalists. News outlets that are not affiliated with legacy media organisations appear to have greater capacity to adapt to the new journalistic genres.

This thesis offers a picture of the dynamics of news production in Indonesia: the emerging new roles in the newsroom, the supporting roles that have become

instrumental, and how journalists need to distribute their authority and renegotiate journalistic doxa to maintain their journalistic cultural capital and at the same time strengthen their economic capital. On a macro level, this research has identified interactions between news outlets, technology companies, not-for-profit organisations, and government institutions crucial to the adoption of data journalism.

This study's findings provide a timely critique of the role of journalism in Indonesia against a backdrop of digital disruption of the news industry in an era of disinformation. This thesis suggests that rather than competing with social media in terms of speed and productivity, news media need to embrace journalistic cultural capital, including intelligent commentary, accuracy, and clarity. It also encourages news outlets and their journalists to deploy technology and collaborate to improve the quality of their work and to initiate new business models.

Chapter 1

Introduction: The Internet, Hoaxes, and the Media in Indonesia

As a journalist deeply involved in the early evolution of data journalism as a core professional practice in Indonesia, I have witnessed the challenge of hoaxes and misinformation in the public sphere. I have also seen how data journalism has developed as a professional, industrial, and governmental response to these threats to democracy and good governance in Indonesia. In this doctoral study, I investigated the profound changes to journalism engendered by the embedding of data journalism practices into the digital news media industry. To contextualise my investigations and discoveries, in this chapter I document my involvement and map the political and economic landscape, explain the challenges posed by hoaxes and misinformation, review key scholarship, and explore the evolution in journalism that was necessary for the incorporation of data journalism as a vital part of news media practice. I also explain my motivation for embarking on this PhD project, outline its aim, scope and significance, and present an overview of the structure of this thesis.

1.1 When Data Goes Viral

On 6 November 2014, after serving nearly 12 years as a journalist with the media group Tempo[1], I joined Katadata.co.id[2], an online news and research outlet established in 2012 that focuses on economic issues. While I was adapting to the research team, my colleagues prepared a series of infographics to clarify the issue surrounding the

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[1] Tempo is a media group in Indonesia that was founded in 1971. Tempo has been known for being critical of the government. In 1994, *Tempo* weekly magazine was banned from publication because it published stories about the purchase of second-hand German warships involving the Research and Technology Minister, BJ Habibie. The banning did not stop Tempo. Its journalists kept on writing. They moved to an online platform, which was beyond government control. After the collapse of Suharto's regime in 1998, *Tempo* Magazine came back to the audience and consolidated its business by publishing *Tempo* daily and Tempo TV. Steele (2003) describes Tempo as one of the most respected media organisations in the country.

[2] Katadata.co.id is an economics and business online media, data, and research firm. Set up on 1 April 2012 in Jakarta, two of its four founders were former Tempo journalists. After growing from six employees to 120, in 2018, Katadata announced its success in raising funding led by East Ventures, a venture capital outfit focused on the Southeast Asia and Japan.

government's plan to cut fuel subsidies. President Joko Widodo had just been inaugurated on 20 October 2014 and was immediately facing a dilemma because of the rise in the oil price to above USD120 per barrel. Cutting or limiting subsidies would harm his popularity and provide his opponents – who controlled the majority in the House of Representatives – with an opportunity to undermine him. Adding more subsidies would jeopardise the national budget.

Instead of providing clarity to the public, the news media allowed any politician, activist, or public figure – even those who did not have knowledge of oil and gas – to comment on the matter. The rejection of the government plan escalated. The widespread idea was that Indonesia is an oil-rich country, therefore raising the oil prices would be unacceptable. Protests were held in many cities. The new government was framed as having too little commitment to the poor. Even worse, some politicians from the same political party (the Indonesia Democratic Party of Struggle/PDIP) as the president opposed the plan to cut subsidies. The PDIP declared themselves to be the party of the poor, even though their previous president, Megawati Sukarno Putri, also cut the fuel subsidies between 2001 and 2004.

On 13 November 2014, Katadata's infographics were published. They explained that Indonesia had not been an oil exporting country since 2003. The country's oil reserves were 3.7 billion barrels, far below those of Venezuela and Saudi Arabia, which had 298 and 265 billion barrels, respectively. One of the graphics showed how imports had gradually affected the trade balance and weakened the Indonesian rupiah. Instead of helping the poor people, the subsidies were mostly enjoyed by car owners, who are generally considered to have more financial capability. The infographics went viral and were used in public discussions. A Facebook account named "Joko Widodo" (the ownership of this account is obscure) posted the infographic website link on the same day. In less than 24 hours, more than 50,000 users had accessed the link, and the Katadata website went down because it had not expected so many site visits.

The president cut the subsidies, with or without the influence of the infographics. However, I was amazed by how people shared the infographics to confront disinformation and hoaxes about the state of the oil industry in Indonesia. I am proud that I was a member of the media that contributed to the debate by presenting reliable

data that was easy to understand. Looking back at the infographics team, I witnessed the change in journalistic work and the journalist's role. The infographics, which Katadata asserts were an output of data journalism, were collaboratively created by journalists, data analysts, and graphic designers. More than by just doing interviews and quoting sources, Katadata had moved forward by doing verification, that is, working with data and presenting it to the public. The infographics were also a milestone for Katadata, which then started to attract the attention not only the public attention but also of the policymakers.

1.2 Context of this Study

In this section, I present the context of my study. I start by discussing the spread of hoaxes in Indonesia that targeted the government and its policies, highlighting research on journalism and data journalism in the country, and explaining the emergence of data journalism and its adoption around the globe, including in Indonesia.

The Case of Ratna Sarumpaet

In the first week of October 2018, political tension was high leading up to the 2019 General Election to determine the presidency and membership of the House of Representatives. It was interrupted by the "plastic surgery scandal" involving a senior actress and activist, Ratna Sarumpaet. On 2 October 2018, photos of her bruised and swollen face were circulated on social media, some of them tweeted by @cumarachel, a Twitter account of Rachel Maryam, a member of the House of Representative from the Great Indonesia Movement Party (Gerindra). This account had 56,000 followers. In her post – which was later deleted – Ms Maryam said that Ms Sarumpaet was suffering from severe injuries to her face after being beaten by a group of men on 21 September (Prasongko 2018). As quoted by Tempo.co, Ms Maryam[3] tweeted: "The news (of persecution) did not come out due to Mrs. @Ratnaspaet request, she was scared and traumatised. Please pray!" (Prasongko 2018).

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[3] In 2016 Maryam was reportedly asked the Indonesian Embassy in France to facilitate her personal visit to Paris (Newsdesk 2016).

The news went viral. Ms Maryam's colleague, Fadli Zon[4], Deputy Chairman of Gerindra and Deputy Chairman of the House of Representatives, condemned the "act of persecution" and called it "very evil and barbaric" on his Twitter account. He said he met Ms Sarumpaet twice after the incident. A similar condemnation came from Daniel Azhar Simanjuntak, the spokesperson for Gerindra's candidate for the 2019 presidential election[5]. Mr Simanjuntak offered an even more detailed story: that Ms Sarumpaet had been pulled into a car in the city of Bandung – a two-hour drive from the capital city Jakarta, where she lives – and had been beaten by two or three men. She was then kicked out of the car and abandoned until a taxi driver took her to the nearest hospital (Prasongko 2018). The drama became more intense when, after visiting Ms Sarumpaet, Gerindra's presidential and vice-presidential candidates Prabowo Subianto and Sandiaga Uno, accompanied by their leading supporters[6], held a press conference urging the government to investigate the persecution and bring the perpetrators to justice (Rosana 2018). The comments made by the politicians indirectly pointed the finger at President Joko Widodo as the person ultimately responsible for the tragedy, because Ms Sarumpaet would often challenge the government (Putri 2018).

The next morning, about 8 am, an 11-page PDF document captioned "The Presidential Briefing for the Case of Ratna Sarumpaet", with the title *Investigative Report on the Viral News of the Beating of Ratna Sarumpaet*, circulated on journalists' WhatsApp groups. Based on the report compiled by the Indonesia National Police, the PDF detailed how instead of visiting Bandung, Ms Sarumpaet had been in a hospital in Jakarta during the time mentioned by Ms Maryam to undergo plastic surgery. The police denied any persecution took place in Bandung, as they had checked all hospitals in the city. They were also convinced that Ms Sarumpaet was not in Bandung during the period 20 to 24 September (Qodar 2018). The following hours were the anti-climax of the furore. In the late afternoon, Ms Sarumpaet, who was a member of Subianto-Uno campaign team, spoke in front of journalists at a press conference for the first time since

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[4] Zon also reportedly asked the Indonesian Embassy in the USA to facilitate his daughter's trip to the USA in 2016 (Newsdesk 2016).

[5] The 2019 presidential election would be a rematch of the 2014, where Prabowo Subianto faced Joko Widodo. Subianto, who were supported by Gerindra Party, would lose again. In 2019, Subianto's running mate was Sandiaga Uno.

[6] Among the supporters are Amien Raies (ex-Chairman of People's Consultative Assembly) and Gen. ret Djoko Santoso (ex-Commander of the Armed Forces, who was also Chairman of Subianto's Campaign Team).

the news of her "persecution" broke: "I apologise. There was no assault. That was just a delusion inspired by satan. It turns out I had become the best hoax creator; my lie had caused an uproar in this nation." (Shelton & Arifah 2018). In response, all politicians who had been deceived by Ms Sarumpaet's story condemned her for lying, and Mr Subianto held another press conference, not to offer an apology but to make the excuse that he had been in a hurry when he made the judgment. He also said he had sacked Ms Sarumpaet from his campaign team (Viva 2018). The day after her confession, she was arrested by the police just as she was about to board an airplane to fly to Santiago, Chile, for a conference (Salleh 2018) and she was named as a suspect for spreading the hoax (Puspita 2018)[7].

While the media outlets were highlighting the Subianto camp's struggle to restore confidence in them following the scandal and reporting Ms Sarumpaet as the culprit, people began to criticise the media. Apart from the fact that the media failed to assess the credibility of the actors surrounding the hoax, journalists were criticised for not doing the very basic task of their job: interviewing Ms Sarumpaet before her press conference (Rizky 2018). Some journalists had sourced Twitter accounts belonging to the politicians in the Subianto camp. It seems that in the race (with each other and social media) to be the fastest to inform audiences of the developments in the story, the media outlets neglected their professional responsibility to be accurate. The chairman of the Indonesian Press Council, Yosep Adi Prasetyo, questioned the journalists' failure to verify the facts: "Information that is widely shared on social media is not automatically appropriate for news" (Astungkoro 2018). He argued that in the heat of a presidential race involving two candidates, a hoax disseminated by one camp and amplified by the media could create a horizontal conflict and divide the nation; therefore, the media should apologise for failing to perform their task.

The political dynamics of Indonesia and the development of new technologies pose a combined challenge to the media in a country of 270 million people (World Bank 2019a) spread across 17,000 islands. While struggling to adapt to new technology, journalists are expected to provide the public with reliable information amid political

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[7] Sarumpaet was charged with breaching Law No. 11 of 2008 on Electronic Information and Transactions. In July 2019, South Jakarta District Court sentenced her to two years behind bars. She received parole after five months in prison.

battles flooded by hoaxes and disinformation. During the period 2014 to 2019, when three crucial elections took place (the 2014 presidential election, the 2017 Jakarta gubernatorial election, and the 2019 general election), newsrooms fell short when it came to carrying out verification, which is the essence of journalism (Kovach & Rosenstiel 2001b). Instead of fighting the hoaxes and disinformation that were spreading on social media, some media outlets, as noted by Prasetyo (Astungkoro 2018), helped to promulgate them. Moreover, if the hoaxes or disinformation were to be obtained from comments made by a public figure, they would be more attractive to journalists because celebrity actions satisfy the news value of prominence (Reilly 2018). The adoption of web culture that demands more stories be produced and published in 24 hours has changed the way journalists view the need for fact-checking. Procedures to ensure the veracity of information are regarded as liabilities in the competition to be the fastest because fact-checking takes time. As a result, the news media tend to apply a "publish first, correct if necessary" approach (Reilly, p. 6). This situation will have a severe impact on journalism because, apart from lack of public trust, in this digital era, journalism is threatened by trolls and propagandists spreading misleading information about particular news outlets or doxing the media and its journalists (George & Youm 2022; Masduki 2021).

The reporting of the Sarumpaet hoax scandal could have harmed the democratic processes in Indonesia. Democracy is a system that requires the public to be empowered by allowing them access to information. The unprecedented advances of new technology provide this through the internet, smartphones, social media, and messaging applications. However, some would argue there has been no significant development of democracy around the world arising from increased access to the internet: "Many democracies, both long-established ones and newer ones, are experiencing serious institutional debilities and weak public confidence" (Carothers 2015). In Indonesia, the new technologies have generated complexity in the form of hoaxes and disinformation, which are not only considered a threat to the country's economic agenda promoted by Joko Widodo's government in 2014, which focuses on connectivity to promote competitiveness, but have also been circulated to undermine the government, especially the leadership of Widodo, who has from the beginning of his election in 2014 been accused of being anti-Islam, pro-China, and sympathetic to communism (Baiduri 2017).

Research on Journalism and Data Journalism in Indonesia

Two decades after the end of Suharto's era in 1998, Indonesia emerged as the world's third-largest democratic country, with a population of 260 million (Barton 2010). Located in Southeast Asia, between mainland Asia and Australia, the nation held its fourth direct presidential election in 2019. The news media played an important role in guarding the country's democratisation (Sen & Hill 2010). For the media, the fall of the Suharto regime marked a new era of liberalisation (Steele 2012). The media are no longer under the control of the government and censorship has been abolished. In addition, journalists are no longer obliged to be a member of Indonesia Journalist Association – the only press organisation sanctioned by the government under the Ministry of Information during Suharto's New Order era.

Indonesia has attracted the attention of many researchers keen to observe and investigate the various aspects of its journalism. Hill (2006), McCargo (1999), and Steele (2005) are among scholars who focused their research on the state of journalism under the militaristic New Order era (1966-1998). Following the collapse of the regime and the country entering the era of openness that allowed the proliferation of media outlets, many studies were conducted to investigate journalists' professionalism and daily practices (e.g., Hanitzsch (2001) (2005) Pintak & Setiyono (2011); Sharp (2012). Since 2009, with the new technologies having dramatically changed the ways people receive information and how the media need to be managed, the focus of research has shifted to media ownership and its impact on the media's role as watchdog and as a fundamental element of democracy (Haryanto (2011) Lim (2012); Tapsell (2017). My research, however, recognises the significant impact of hoaxes and disinformation on media, politics, and government in Indonesia and thus focuses on the adoption of data journalism by media outlets and the deployment of data journalism skills by government agencies.

Since 2012, initiatives by several media outlets to implement data journalism had hoped to improve journalistic practices in Indonesia, especially in responding to hoaxes and disinformation. The adoption of data journalism is crucial to providing credible news during debates, particularly on political and economic issues, which are often exploited by politicians to attack their opponents. So, instead of using interviews as the key

element in a story, data journalists are expected to find and present data to test the comments made by their sources (Dharmasaputra 2016). This is crucial because the media play an essential role in ensuring democracy is on track by promoting government accountability (Schultz 1998) and informing the public about key facts, including the credibility of their politicians. In the context of Indonesia, where hoaxes and disinformation have targeted government development projects such as the construction of power plants and toll roads, the implementation of data journalism has become even more important.

The Emergence of Data Journalism

Data journalism is a combination of journalistic skills and the use of large-scale data that are processed with specific software. By using a variety of outputs – from text and infographics to videos – to attract the attention of the audience, data journalism can also present complex data in ways that are easy to understand (Bradshaw 2012). Appelgren & Nygren (2014) define data journalism as an emerging form of storytelling that combines established journalistic methods with computational and analytical skills. And while Karlsen & Stavelin (2014) prefer the term "computational journalism", other names for the same practice are "precision journalism", "computer-assisted reporting", and "data-driven journalism" (Houston 2015).

Data journalism began during the 1952 US presidential election campaign when the CBS network employed computer experts to predict the outcome. However, it was not until 2011 that data journalism experienced its breakthrough advances, empowered by the development of new technologies and data leaks (e.g., Wikileaks). Leading newsrooms in North America and Europe, such as *The Guardian*, began applying the new genre to create powerful news stories. Data journalism then became widely known through global conferences and the establishment of data journalism centres around the world (Houston (2015).

Indonesian media outlets – both legacy and new – have also deployed data journalism practices. In 2012, Katadata, an online news media was established[8]. It is regarded as

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[8] As mentioned in the earlier section, I worked for Katadata from 2014 to 2018 as an editor and head of research division. I am on unpaid leave to pursue my PhD. The funding for this PhD project was provided by the Australian Department of Foreign Affairs and Trade.

the first media outlet in the country to specialise in data-driven journalism practices (Ser 2018). Katadata was established to focus on economic and business issues and to provide impartial, easily understood news based on data, rather than on comments made by the established news sources (Katadata 2018). In 2016, another media outlet, Tirto.id, was established, proclaiming itself a newsroom outlet that offered precision journalism. Rather than focusing on speed, staff at Tirto give their attention to in-depth news and accuracy (Tirto 2016). Data journalism has also been adopted by reputable online media outlets affiliated to legacy media organisations, such as Kompas.com and Tempo.co., both of which dedicate a channel to displaying works of this kind. In the wake of the hoaxes and disinformation targeting government economic projects, several state agencies have also adopted data journalism skills and created channels on their websites to publish what they state is data journalism. Supported by local or foreign funding, including the office of the Australian Embassy in Indonesia (Cox 2018), workshops for data journalism training have been held by government agencies, the journalists' association, and universities.

In general, data journalism products take the form of an infographic. Infographics, which combine pictures and numerical information, are considered the most effective way to present data to the public (Knight 2015). When fast internet connections are available, data are also presented in interactive infographics and videos, which require more sophisticated programming and editing skills. However, long-form articles based on data analysis are also gaining significant readership. A data analysis article published on "Analisis", a channel dedicated by Katadata to their long-form journalism products, was visited by almost 100,000 users (Laras 2018). Tirto also regularly publishes long-form articles on its Indepth channel. These analyses and in-depth articles feature infographics and data in the form of tables, charts, and diagrams. While journalism is still the leading skill and journalists oversee the production process, data journalism has to collaborate with other professions, namely, data analysts, programmers, and designers (Karlsen & Stavelin 2014).

1.3 Motivation for the Study

By adopting data journalism, newsrooms have had to innovate and change the ways they work by equipping themselves with technological resources (e.g., workforce,

hardware, and software) that have not traditionally been used in the news production process (Gynnild 2014). This phenomenon has gained the attention of researchers in several countries (eg., Appelgren & Nygren (2014) Borges-Rey (2016); De Maeyer et al. (2015) Fink & Anderson (2015) Karlsen & Stavelin (2014)). In the past five years, research into data journalism has also flourished in Africa, South America, the Middle East, and Asia (Mutsvairo, Bebawi & Borges-Rey 2020). However, data journalism in Indonesia remains under-researched, with publications limited to conference papers and unpublished papers. It is my intention that this analysis of data journalism in Indonesia, a country that is still struggling for democratisation after the fall of Suharto's dictatorship in 1998 and is building its economy, will address the research gaps in this area of journalism. Moreover, the political dynamics of Indonesia, particularly between 2014 and 2019, have had a significant impact on the urgency of the adoption of data journalism.

1.4 Aim and Scope

The aim of this research was to investigate the implementation of data journalism in Indonesia and to understand the impact of this new genre on media organisations and how government agencies have adopted data journalism skills. Therefore, this study was designed to answer the following research questions:

1. What factors drive the adoption of data journalism in Indonesia?
2. How do Indonesian news media outlets adopt data journalism?
3. What changes are caused by the deployment of data journalism in newsrooms and journalists' professional practice?
4. How do Indonesian government institutions learn and deploy data journalism skills to disseminate their views?

A particular interest of this study was the adoption of data journalism by Indonesian news media outlets in the midst of hoaxes and disinformation. However, this study did not evaluate the hoaxes or the disinformation as such. Rather, it focused on the dynamics of the newsrooms and the public relations branches of government agencies adopting data journalism skills. These media organisations and government agencies are

headquartered in Jakarta. Because the number of verified[9] media organisations in Indonesia is large, with more than 1,000 identified in 2018 (Dewan Pers 2018), I limited this study to five online national news media organisations as representatives of the newsrooms that have adopted data journalism in Indonesia. As for the government agencies, I examined two ministries: the Ministry of Communication and Information Technology (MoCIT) and Ministry of Finance (MoF). MoCIT is the leading agency in government relations, and it has declared its adoption of data journalism. MoF, which is the agency that is frequently the target of hoaxes, has received numerous awards for its communication content.

1.5 Significance of the Study

While much research has been conducted on news media in Indonesia, there is limited analysis of the issues addressed in this study: the adoption of data journalism by media organisations and the government agencies, and its impact on journalism. My intention has been to fill gaps in the knowledge of recent media developments in Indonesia through this investigation of the complexity of the Indonesian news media industry and its relationship with the political dynamics of the country, as well as to explore the impact of data journalism and hoaxes and misinformation. This is expected to enrich the literature investigating journalism practices in Indonesia and elsewhere, which should be useful for future studies. On a practical level, I recommend a business model that might be used by news media outlets that adopt and deploy data journalism, by journalists who intend to broaden their knowledge and expertise in data journalism, and by governments when making decisions to support quality journalism. For foreign donors, this study offers insights they might consider when offering financial and technical assistance intended to promote quality journalism in Indonesia.

1.6 Overview of the Study

This thesis consists of 11 chapters divided into three main parts. Chapters 1 to 5 comprise the introduction, literature review, theory and theoretical framework, methodology, and background. Chapters 6 to 10 present the findings and discussions, and Chapter 11 contains the conclusion and recommendations.

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[9] Starting in 2008, Indonesia's Press Council conducts assessments to verify the existence and properness of media organisations. The verified media outlets are expected to be more accountable.

In this chapter, I have provided a brief history of data journalism and its adoption in Indonesia, highlighting how the lack of research in this area motivated me to embark on this PhD project. I also outlined the aim and scope of this study and its significance. There are 10 chapters remaining in this thesis.

In Chapter 2, I review the scholarly literature. I start by outlining the scope of the study and detailing the strategies used to identify the key research. I situate this thesis by identifying some critical findings from previous research on data journalism, as well as gaps in existing research that are in urgent need of study. Key points from these previous studies are organised around the six themes:

1. the origin and definition of data journalism;
2. the reason for adopting data journalism;
3. challenges in adopting data journalism analysed through political and economic lenses;
4. collaboration in working on data journalism;
5. the role of other institutions beyond the journalistic field; and
6. changes in newsrooms arising from the introduction of data journalism.

I also highlight studies on data journalism and digital journalism in general that apply Bourdieu's field theory, which is the basis of the theoretical framework to be explored in the Chapter 3. I conclude that it is time to apply these research tools to an analysis of the impact of data journalism in Indonesia.

In Chapter 3, I undertake a holistic analysis of the ways Bourdieu's field theory and component concepts have been applied to journalism as a significant part of the field of cultural production. By positioning journalism in the field of power, this perspective offers new insights into how journalism is evolving as a field, the influence of data journalism as a new species of cultural capital, and the shifting power and positions of the entrants to this influential new kind of journalism. I also introduce Anderson's (2013) six lenses of the sociological approaches to computational journalism, which will help me to present and interpret my core findings. The latter part of Chapter 3 introduces additional concepts and terms employed in this thesis, namely, digital disruption, journalism as a discipline of verification, data journalism, news values, and

public relations. These will also be conceptualised using the field theory paradigm. Together, these concepts and their application in this study form my theoretical framework.

Chapter 4 explains the choice of methods to answer the research questions of this study. I start by explaining why I chose a case study methodology as the appropriate qualitative approach (Yin 2003). I did case studies on the adoption of data journalism in:

1. online news media outlets established by legacy media organisations,
2. newer online news media organisations that do not have affiliation with legacy media organisations, and
3. government agencies.

In addition, I explain my data generation strategies, including the sourcing and selecting of participants, arm's length recruitment, interview questions and strategies, data management, and university ethics clearance. The data analysis procedures will also be set out, including coding and inter-rater reliability. I also mention the limitations of the study and some of the significant challenges I faced during the completion of this thesis, especially the COVID-19 pandemic.

Chapter 5 presents the contemporary journalism settings in Indonesia to situate this study. I focus on the state of journalism in the post-Suharto era. Data for this chapter were generated from natural data (news archives), institutional reports, research interviews, and previous scholarship. I apply Herman and Chomsky's (2006) propaganda model to examine business size and ownership, advertising, sourcing, flak, and anti-communism, and fear. I argue that the decreased trust in news media has been exacerbated by the digital disruption.

Chapter 6 is my first findings chapter. It focuses on the digital disruption in journalism that has posed challenges to Indonesia's media industry and journalists responses to them. Data for this chapter were generated from the interviews with research participants during a field trip to Indonesia. This chapter presents the points of view of journalism professionals, government officials, media regulators, civil society organisations, and academics. It also includes a discussion section that links the findings

with previous research in data journalism (Chapter 2) and with my theoretical framework (Chapter 3).

In Chapter 7, I present findings from an analysis of 50 data journalism artefacts collected from five online news media outlets. Because data journalism in Indonesia is still considered new and shallow, this chapter will only discuss infographics as a simple form of data journalism. To do this, I use an evaluation framework derived from earlier research in this area that I refer in Chapter 4.

Chapters 8, 9, and 10 are the core findings chapters of this thesis. Chapters 8 and 9 present findings from research participants to get a deeper insight into the adoption of data journalism in their respective media outlets. Chapter 8 focuses on the online news outlets owned by the legacy media organisations Kompas.com and Tempo.co. Chapter 9 focuses on three new online news outlets that do not belong to legacy media organisations: Katadata.co.id, Tirto.id, and Lokadata.id. In Chapter 8 and 9, I apply the six lenses of Anderson's (2013) sociological approach to computational journalism: politics and public policy; economics; institutions and fields; organisation-level dynamics; cultural history, and technological and news. In Chapter 10, I present my findings on how two Indonesian government ministries – the Ministry of Communication and Information Technology and the Ministry of Finance – applied data journalism skills to improve their communication content. The data for this chapter were obtained from the interviews. I applied thematic analysis to the data, one step of which was coding (Braun & Clarke 2006). The coding produced seven primary nodes:

1. Response to Disinformation;
2. Data Presentation;
3. Capacity Building;
4. Human Resources;
5. Planning and Work Process;
6. Data Validity;
7. Access to Data.

For presenting the interview data in this chapter, I merged some of the primary nodes to produce the following four groups:

1. Response to Disinformation + Data Presentation;
2. Capacity Building + Human Resources;

3. Planning and Work Process + Data Validity;

4. Access to Data.

As with Chapter 6, a discussion will accompany each chapter to link its respective findings with previous scholarship and with my theoretical framework.

Chapter 11 concludes this thesis. I synthesise the core arguments of each of the findings chapters to illuminate this thesis's contribution and to support my recommendations to researchers for further research in this area, news practitioners, policymakers, and donor agencies.

Chapter 2

Literature Review

As data journalism has grown since 2011 and been adopted by newsrooms across the globe (Hermida & Young 2019), it has also gained momentum in Indonesia, a country of 270 million people (BPS 2021). The challenges posed by the digital disruption that decimated the news industry have intersected with three contentious elections in that country: the 2014 and 2019 presidential elections and the 2017 Jakarta gubernatorial election, all of which generated hoaxes and disinformation (Lim 2017; Mujani & Liddle 2021; Tapsell 2019). Thus, while media outlets struggled to survive, they were also expected to serve the public with clarity in the problematic information ecosystem.

Against the backdrop of these challenges, several news outlets adopted data journalism to strengthen their products, demarcate themselves from unverified information, and explore a new business model. Technology is a double-edged sword for journalism. While it has been blamed for the complications in the field, it also offers something that the news industry can take advantage of (Anderson 2013). Technology has brought us to the moment of "data deluge" (Lewis 2015, p. 322), but this same technology can be used for verification, producing more in-depth stories, providing insight, and so on (Lorenz 2012). This helps journalists not to spread misinformation and therefore they can maintain trust and credibility they have (Bonfiglioli 2021).

Many studies have investigated the use of data in journalism, particularly data journalism. Among studies conducted in Europe and North America are those by Karlsen and Stavelin (2014), Appelgren and Nygren (2014), De Maeyer et al. (2015), Fink and Anderson (2015), and Knight (2015). Because most of the studies concentrate on the northern hemisphere, Fink and Anderson (2015) suggested researchers expand their studies of data journalism adoption beyond those developed regions to countries where different political, economic, and social backgrounds affect newsroom practices.

Hence, there is emerging research on data journalism from Africa, Asia, and South America. Published in early 2020, *Data Journalism in the Global South* (Mutsvairo, Bebawi & Borges-Rey 2020) provides overviews from researchers who witnessed or experienced data journalism practices in relevant countries. However, Indonesia was not included in this work. Therefore, in this chapter I ascertain the gaps in research into data journalism in Indonesia and establish the need to explore appropriate methods to conduct such research in the future. After presenting the scope and literature search strategies I used to identify the key literature, I analyse critical findings from previous studies on data journalism and identify gaps in urgent need of filling. I conclude by contextualising this thesis and offering a summary.

2.1 Literature Search Strategies and Scope

With the increasing interest in data journalism, numerous studies have examined this journalistic practice across the globe. Applying the phrase "data journalism" on Google Scholar and limiting the publication period to 2011 and 2021, I encountered about 8,650 publications, including, but not limited to, books, book chapters, journal articles, and conference proceedings. The University of Technology Sydney library search engine was helpful in narrowing my search results. Apart from the publication date, I applied "articles", "peer-reviewed journals", journalism", and "English" as filters. This reduced my results to 280 journal articles from several databases, including Communication Source, EBSCOhost EJS, ProQuest Central, SAGE, and Taylor & Francis.

I read the abstract of each result to check its relevance to my research. I also did a quick skimming where the abstract did not provide adequate information. These steps reduced the results to 134 publications, which I downloaded and saved on Nvivo and a dedicated folder (and sub-folders) on my computer for easy referral. Nvivo helped me to organise the articles, along with their important highlights. These then led me to other articles. Moreover, my supervisors frequently referred me to relevant texts.

For data journalism studies in Indonesia, I added "Indonesia" on the search engine ("data journalism" Indonesia) but found only one article focusing on data journalism in a media outlet. This research by Bayu and Triastuti (2020) argues that despite an online news outlet adopting data journalism, the news outlets still struggled with inaccuracy.

As Indonesia is the focal point of this thesis, I applied some keywords in the Indonesian language to expand the results, assuming many research works would not be written and published in English. However, I could only obtain conference proceedings, conference papers, and undergraduate theses from some local universities. These works focused on specific facets of data journalism practice in particular news outlets.

As new international research on data journalism kept emerging, it became impossible to include all of the studies in this literature review. Therefore, I limited my reading to the period 2011 to 2021. Figure 2.1 shows the number of publications each year during the designated period I gathered for this chapter. The figure demonstrates that research on data journalism rose dramatically in 2018 and 2019. After a decline in 2020, it bounced back slightly in 2021.

Figure 2.1
Selected Research Publications on Data Journalism Between 2011 and 2021
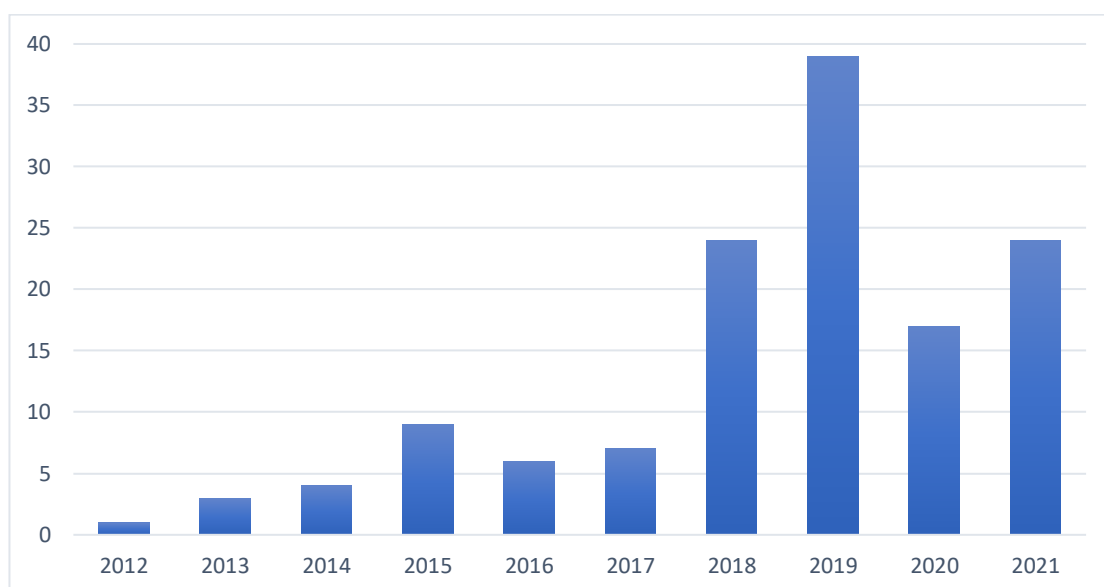
2.2 Data Journalism: Origin and Definition

It was not until 2011 that data journalism experienced its breakthrough. Empowered by advances in new technologies and by data leaks (e.g. Wikileaks), leading newsrooms in North America and Europe, such as *The Guardian,* applied the genre to create compelling news stories (Houston 2015). Data journalism then became widely known thanks to global conferences and the establishment of data journalism centres

worldwide. Among the international organisations concerned with data journalism is the Global Investigative Journalism Network (GIJN), which includes data journalism sessions in its conferences (GIJN 2019). The GIJN promotes data journalism because of its importance in supporting investigative reporting in the digital era.

Digitalisation has brought data deluge, influencing the ways journalists perform their jobs and, to some extent, transforming the fundamental nature of journalism practices in many places (Lewis 2015). The use of data is more prominent in news outlets. Terms such as big data, data analysis, data interpretation, data gathering, and data steward have become more familiar in contemporary newsrooms. Along with these new terms, positions never previously imagined have been created. People with skills that had not fitted within the journalism field have established their roles as significant agents in news production processes (Tandoc Jr 2019). Thus, journalism practices and the news business have both experienced substantial changes in the past ten years.

Houston (2015) argued that data journalism is the continuation of computer-assisted reporting (CAR), which the US broadcaster CBS applied in 1952, during the country's presidential election. CAR improved investigative journalism without any significant involvement of other fields outside journalism. In contrast, data journalism requires the participation of professionals from different fields. Meanwhile, another related form of journalism – computational journalism – uses applications and automatisation to fast-track and expand journalism work processes and to improve news interfaces and visualisation (Coddington 2015). Figure 2.1 offers a typology to locate the professional and epistemological position of data journalism, CAR, and computational journalism (Coddington 2015).

Figure 2.2

A Typology of Computer-Assisted Reporting, Data Journalism, and Computational Journalism
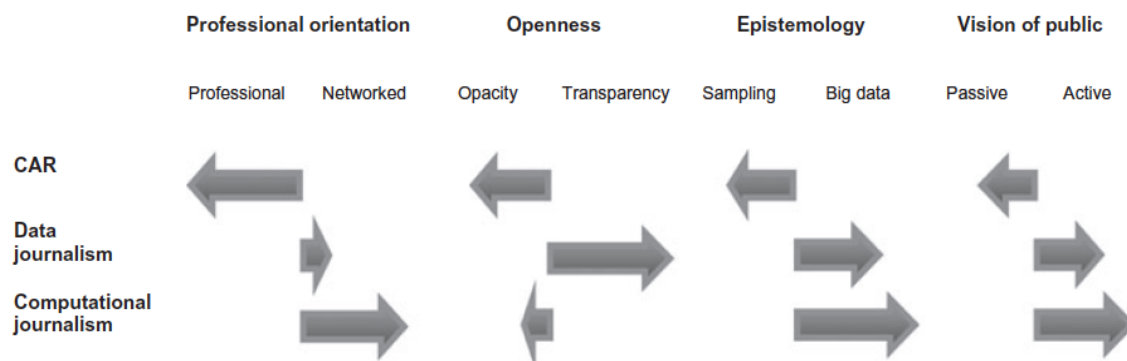
Note. In each type of journalism practice, the direction of the arrow indicates the nature of its practice within the four categories shown. The length of each arrow is proportionate to the strength of the tendency in that direction.
Source: Coddington (2015, p. 337)

Despite research on data journalism has been flourishing, researchers in the field of data journalism have no single, widely accepted definition of the term. Hence previous research attempted to draw boundaries around work processes and data journalism products that were based on definitions put forward by professionals and experts involved in those studies as participants. Consequently, definitions were shaped by the professional experiences of the informants and their organisations. For example, a journalist working for a national news outlet might have a different definition of data journalism from one at a regional paper (Hermida & Young 2019).

As a work process, data journalism involves journalistic routines such as data collection (in the form of numbers), cleaning, organising, verifying, exploring and analysing, gaining insight from the data, and applying visualisation and narrative techniques for presenting the data to the public (Appelgren & Nygren 2014; Berret & Phillips 2016; Howard 2014; Knight 2015; Veglis & Bratsas 2017). More specifically, Lorenz (2010) and Fahmy and Attia (2021) have referred to data as "big data" or "a large set of data". Others have highlighted the application of web development and technical sophistication in data analysis and visualisation to provide quality news products and maintain readers' interest in journalism (Fahmy & Attia 2021; Parasie & Dagiral 2013; Royal & Blasingame 2015).

Based on its products, data journalism is a journalistic artefact that positions visualisation as an integral part. Hence it consists of one or more of the following features: maps, bars, charts, images, and other graphics (Royal & Blasingame 2015). Rogers (2012) defined it simply as journalistic work based on numbers and statistics, regardless of form. Another study noted that the numbers or statistics provide the news peg and they drive to initiate news stories. Its products feature substantial elements of data and visualization, one type being the form of an infographic (Knight 2015). Hence, quantitative data is crucial for data journalists to work on their stories, and they have to be visualized to make it easy to understand (Zamith 2019).

2.3 Why Data Journalism?

Journalism is classified as the new "knowledge profession" (Donsbach 2009). It provides information for people to cope with their circumstances. The adoption of data journalism is considered as an initiative to enhance the roles of journalism. During challenging times, for example, political turmoil and pandemics, data journalism is needed even more to serve the journalistic function of a knowledge broker (Pentzold, Fechner & Zuber 2021). It allows news outlets to deliver information from authoritative sources, thus helping the public deal with the uncertainty caused by unverified information (Wu 2021).

Verification is the essence of journalism (Kovach & Rosenstiel 2007). The journalist's role as a knowledge broker dedicated to verification is essential for establishing democracy (Donsbach 2009). The use of data in the form of data journalism enables and enriches public debate for improving democracy because it educates people and makes them aware of the consequences of their decisions (Cushion, Lewis & Callaghan 2017). At a time when technological advances have made data more accessible, data journalism is considered an essential journalistic practice to shape society and maintain democracy (Parasie & Dagiral 2013; Tong & Zuo 2021). Data journalists believe they contribute to "fostering democratic conversation with the audience" (Boyles & Meyer 2016, p. 944).

Stalph and Borges-Rey (2018) questioned the watchdog role of data journalism in the North America and Europe because the practice only developed in large news outlets in urban areas. However, its practice in Africa, the Middle East, South Asia, the Pacific, and Latin America indicates that data journalism brings people closer to the truth by revealing mismanagement in powerful institutions, promoting equality, and fighting against violence (Mutsvairo 2019c). In other words, data journalism allows journalists to produce investigative work and hold the powerful to account.

Data journalism is regarded as more powerful than traditional journalism because of the perception that numerical proof is more reliable and numbers can be used to interrogate public policy (Tabary, Provost & Trottier 2016). For the media, the use of numerical data has occurred at a time when people are scrutinising the role of media and trusting journalism less, caused by – but not limited to – the proliferation of disinformation on the internet. (Lima-Quintanilha, Torres-da-Silva & Lapa 2019). Disinformation circulating on social media has also targeted media organisations and it was regarded by news people as a social problem challenging journalism (Tandoc Jr, Jenkins & Craft 2019). In this digital era, journalism is vulnerable to threats and doxing initiated by social media users with or without collaboration with powerful people or groups (George & Youm 2022; Masduki 2021).

In Canada, major news outlets with solid financial ability took advantage of data journalism to strengthen their position in the community in the wake of threats from new entrants in the field (Hermida & Young 2019). Hence, legacy media outlets adopted data journalism to regain public trust (Stalph & Borges-Rey 2018). The decline in trust in the media is often caused by a lack of transparency; for this reason, providing information on how a news story was created is instrumental to regaining trust (Curry & Stroud 2021). Data journalism facilitates this by citing authoritative statistics sources as evidence to build an argument. A survey conducted by Beiler, Irmer and Breda (2020) has pointed out that data journalism can help journalism in general be more transparent. Mor and Reich (2018) have shown that media transparency can be enhanced when journalists attach raw data so the public can access them. Furthermore, the use of statistical data and visualisation can improve quality in reporting, and thus enhance credibility (Henke, Leissner & Möhring 2020).

2.4 Challenges in Adopting Data Journalism

Researchers have investigated challenges faced by data journalists and newsrooms producing data journalism. In this section, I group their findings into two categories: politics and economics. The former refers to difficulties in obtaining data as a result of government policies in data management, and the latter refers to the economic capacity of newsrooms to support the adoption of data journalism (Anderson 2013).

Politic: Access to Data

While researchers and journalism professionals have acknowledged the urgent need for data journalism, its adoption around the globe has faced obstacles. In Western democratic countries, a typical obstacle is access to data, especially from government agencies (Mutsvairo 2019a). Research conducted beyond those countries and in Russia indicates similar findings, with socio-political situations and other problems hindering data journalism practices (Amado & Tarullo 2019; Bebawi 2019; de-Lima-Santos & Mesquita 2021; Fahmy & Attia 2021; Jamil 2021; Lewis & Nashmi 2019; Mutsvairo 2019a; Shilina & Shilina 2019; Wright & Nolan 2021; Zhang & Feng 2019).

In Norway and Belgium, interviews with journalists and data enthusiasts pointed out the difficulties in accessing data, despite the existence of freedom of information (FOI) laws (De Maeyer et al. 2015; Karlsen & Stavelin 2014). In Sweden and Spain, journalists found that after submitting requests to get data, the responses were too slow to fit with the journalistic pace (Appelgren & Salaverría 2018). In the US, data journalists hired attorneys to advise them on their legal rights and the paperwork needed for requesting data (Fink & Anderson 2015). In the UK, while access to government data was available, data journalists needed to go to whistleblowers to get corporate data (Borges-Rey 2016). In addition to issues with access, other concerns have been reported, for example, the unavailability of maps that outline exact borders between municipalities and the time taken to convert data formatted in PDF (Karlsen & Stavelin 2014).

Access to data can be exacerbated by the slow adoption of technology by the media in countries without FOI laws or where there is no commitment to create such laws. In the

Arab region, it can be hard for journalists to access public data because government officials do not always feel they need to be transparent and accountable to the media (Lewis & Nashmi 2019), and the government claimed that data requested are related to state security (Bebawi 2019). In such circumstances, data journalists have preferred to create their own databases or use data from international agencies such as the World Bank (Lewis & Nashmi 2019). In Egypt and Zimbabwe, the problem has not been the access; rather, it is the unavailability of the data because the government institutions have either not recorded their data or not had the infrastructure for storage and easy access (Fahmy & Attia 2021; Muneri 2019).

In China, restrictions and doubt over the reliability of government data have caused some data journalists to rely on data provided by non-governmental institutions, including trade media and scholarly articles (Du 2019). Journalists in Iran also expressed doubt over government data, for example, contradictory financial data (e.g. inflation) from different state agencies (Salimi 2019). In the Philippines, control of data access by the government, despite FOI laws, and threats to media freedom have meant the media needed to build databases from scratch (Ilagan & Soriano 2019). And in Argentina, an initiative to build data involving citizens and civic organisations was a solution to data problems faced by journalists (Amado & Tarullo 2019).

Economy: News Outlets Financial Capacity

Along with the requirements of data journalism products has come a set of skills that are traditionally outside the journalistic field. This has meant news outlets have needed to invest in human resources while facing financial difficulties. In Belgium, lack of financial resources has resulted in data journalism not being a focus because it was considered an extra effort that did not directly add revenue (De Maeyer et al. 2015). In Arab countries, news organisations have become less interested in it due to financial constraints and political agendas (Fahmy & Attia 2021). Media leaders in Rwanda have also considered data journalism too demanding and not fitting their business structures (Nduhura 2019).

Accordingly, data journalism has become a project carried out when journalists have completed their routine tasks (De Maeyer et al. 2015), and its existence is often

dependent on journalists having a passion for it (Moyo & Munoriyarwa 2019; Wright & Doyle 2019). Many studies have found that the lack of skills and training has impeded media organisations' deployment of data journalism (Appelgren & Nygren 2014; Borges-Rey 2016; de-Lima-Santos, Schapals & Bruns 2021; Jamil 2021; Lewis & Nashmi 2019; Mutsvairo 2019c; Zhang & Feng 2019). The upgrading of skills is not easy because there is a perception that some skills, for example, data skills, mathematics, and statistics, are not needed in journalism (Fink & Anderson 2015; Lewis & Nashmi 2019). Moreover, there is a criticism that the general innumeracy of journalists is tolerated, with some even celebrating their aversion to mathematics (Royal & Blasingame 2015). Weiss and Retis (2018) found that students in a journalistic program had selected this field of study because they did not like mathematics.

Therefore, exemplary data journalism projects have often originated from established news outlets, including *The Guardian,* the BBC*,* and *The New York Times* (Borges-Rey 2016; Knight 2015; Zamith 2019). Data journalism has even been seen as a symbol of the established news corporations that, due to their large business scale or government funding, could afford to hire data analysts and create data journalism teams (Fink & Anderson 2015). In Australia, only the Australian Broadcasting Commission, a federally funded news and entertainment organisation, has maintained a data journalist team (Wright & Doyle 2019). This fact has raised scepticism about the sustainability of data journalism and its adoption in smaller media organisations (Nduhura 2019). Research on data journalism in small and regional media outlets shows that data journalism projects were voluntarily carried out by a single journalist doing all the stages of the production alongside their daily tasks (Appelgren et al. 2020; Fink & Anderson 2015; Stalph, Hahn & Liewehr 2022; Wright & Doyle 2019).

Difficulties with human resources, combined with doubts that data journalism could generate revenue, have made some Australian news organisations abandon its development in their newsrooms. However, instead of a decline, this trend could be seen as a normalisation of data journalism practice. Larger investigative data journalism projects decreased from news outlets but more simple projects could be found covering many topics (Wright & Doyle 2019). These simple projects, notably infographic, catered to smartphone users, so it is brief and easy to share (Wright & Doyle 2019). In

the UK, data journalism is also less investigative, focussing mostly on visualisation to engage readers and present data (Knight 2015).

2.5 Collaboration and the Roles of Other Institutions

As data journalism requires a set of skills, collaboration is inevitable, both between actors inside a newsroom and between institutions. This is also because it is uncommon to find a journalist who can individually master all the skills (Sandoval-Martín & La-Rosa 2018). Creating an infographic, as a form of data journalism, for example, involves journalists, data analysts, and designers (Bakker 2014). Therefore the culture of journalists has moved from being competitive to collaborative, both in newsrooms and outside them, in doing data journalism (Hermida & Young 2019). Collaboration across organisations at the individual level has also made the "lone wolf" journalist no longer relevant (Sandoval-Martín & La-Rosa 2018).

Inside a newsroom, collaboration is reflected in the number of people involved in creating data journalism projects. Content analysis of a data journalism project nominated for the Global Editors Network from 2013 to 2015 shows an average of five names on each piece (Loosen, Reimer & De Silva-Schmidt 2017). Such collaboration has resulted in more significant roles and the recognition of expertise traditionally outside the journalistic field. For example, data analysts were reported to have immediately gained a foothold in a newsroom because their skills were instrumental in data journalism (Arias-Robles & López López 2021).

Engebretsen, Kennedy and Weber (2018) showed that people with skills in visual communication, digital interaction, data handling, and coding were the leading force in news innovation in newsrooms, well appreciated by the outlets they worked for, and most wanted by news organisations when recruiting. Indeed, the collision between those new entrants and the old players in the field has created tension as a result of their different perspectives on journalistic products based on their diverse backgrounds (Chua & Duffy 2019). Negotiation between these groups has been attainable because even though they have different skills in newsrooms, they have the same objective: improving journalism (Lischka, Schaetz & Oltersdorf 2021).

Collaboration between news outlets working on data can be seen from the Panama Papers saga, in which 107 news outlets across the globe worked together under the International Consortium of Investigative Journalists (ICIJ) to localise 2.6 terabytes of documentation leaked from Mossack Fonseca, a law firm in Panama (Westlund & Hermida 2021). The documents detailed the financial and attorney-client information of more than 200,000 shell companies owned and kept private by individuals, including politicians and dignities from dozens of countries (Berglez & Gearing 2018). Collaboration across media organisations at the national, institutional, and individual levels was also recorded, thus marking the era of interdependencies in journalism (Hermida & Young 2019; Wright & Doyle 2019).

Government policy in data (micro-politics) and resources owned by news outlets (micro-economics) have created opportunities for institutions beyond the journalistic field to support journalists in finding and processing data (de-Lima-Santos, Schapals & Bruns 2021; Wright & Doyle 2019). These is more likely to happen in the global South, where the challenges are considered more significant, and journalism is not an affluent venture (Mutsvairo 2019c). In Nigeria, international donors and techology companies have promoted data journalism by creating a training platform for local journalists (Akinfemisoye-Adejare 2019). In South America, global agencies including Internews, Hivos, the Thomson Foundation, Nieman Lab, Google, along with USAID, the British Embassy, the Knight Center for Journalism in the Americas, and the ICIJ have dedicated their resources to encouraging news outlets and journalists to adopt data journalism by providing training for journalists and by promoting media freedom, and transparency (Borges-Rey 2019). An Argentinian not-for-profit organization, LNData, has helped data journalists in that country (Amado & Tarullo 2019). Meanwhile, a study by Cheruiyot, Baack and Ferrer-Conill (2019) shows joint efforts between data journalists and civic technology organisations in Africa and Europe. Therefore, those ancillary organisations have played a significant role in defining the innovation in the journalistic field (Lowrey, Sherrill & Broussard 2019).

2.6 Changes in Newsroom and Journalistic Cultures

According to Boyles and Meyer (2017), "Growing data journalism over time, in short, requires restructuring the newsroom" (p. 435). In some news outlets, particularly those

in well-resourced organisations, the influx of new skills has reconfigured the structure of the newsroom. Data journalism leaders from 18 US newspapers pointed out that the structural complexity of newsrooms adopting data journalism is because the traditional journalistic organisational structure is not capable of handling activities focused on data and the other elements required (Boyles & Meyer 2017). *The New York Times*, for example, created a small team consisting of up to four people with the different skills needed for working on data journalism projects (Wright & Doyle 2019). The results of the 2017 Global Data Journalism Survey indicated that many news outlets understood that their journalists lacked numerical skills, so they established data teams to tackle the problem and sustain data journalism production (Heravi 2018).

While structural changes have happened, the entry of new agents from different backgrounds (e.g., designers, programmers, and data analyst) has led to the renegotiation of journalistic norms and values. Moreover, these new entrants have enjoyed recognition, occupying leadership positions in newsrooms (Lewis & Usher 2016). Traditional journalists, for instance, see news as factual narration to inform the public for their good, while programmers see it as content that can be modified and circulated using their computational skills (Lewis & Usher 2016) and for them, an achievement is when more people access the news (Ananny & Crawford 2015), and visual designers see news as something can attract visual attention.

Scholars have proposed additions to news values to facilitate the adoption of newsroom technologies favouring programmers and visual designers. These proposals are based on the audience metrics covering three dimensions: expected audience experience, expected audience behaviour, and expected algorithmic behaviour (Kristensen 2021). Harcup and O'Neill (2017) included audio-visuals, exclusivity, and shareability in their list of news values, the potential of audio-visual materials being crucial for presenting an event as an infographic. In terms of transparency, the culture of openness in the technological field has encouraged data journalists to show their reporting methods and procedures, including the sources of the raw data they refer to (Gehrke 2020; Mor & Reich 2018).

2.7 Field Theory Perspective

Data journalism can be interrogated from the field theory perspective. Field theory was developed by Pierre Bourdieu (Bourdieu 1996, 2005, 2018; Johnson & Bourdieu 1993). Key concepts of Bourdieu's field theory, such as field, habitus, and capital, have been applied to media (Hesmondhalgh 2006) and media studies (Benson 1999). In a study of data journalism in Arab countries, Fahmy and Attia (2021) applied field theory to explore the state of data journalism in the region. Drawing on Bourdieu's terms, economic capital, cultural capital, and institutional capital, they found that Arab data journalists had a strong commitment to learning the skills needed (cultural capital), as shown by using their personal money instead of their organisations' money to attend training courses and conferences. However, the lack of financial support from news organisations and their governments' control over media and lack of commitment to releasing official data hindered the development of data journalism.

Tandoc Jr and Oh (2017) applied a field theory framework to researching *The Guardian's* big data journalism. They found that data journalism projects from this UK news outlet resulted from negotiations between journalistic values and technology. A data story, for example, might lack personalisation but still follow the traditional news format, such as accompanying a text story with a photograph. (Lowrey, Sherrill & Broussard 2019) used field and innovation theory to investigate the roles of other agencies beyond the journalistic field that supported innovations in journalism, especially data journalism, in Europe and the US. They found that the so-called "ancillary" staff played a significant role in implementing innovations in newsrooms.

Field theory was also used to investigate barriers for women in Europe, the US, and Latin America who were trying to expand their careers as data journalists. (De Vuyst 2018) found that women would engage in data journalism to avoid the male-dominated work environment of traditional journalism; however, data journalism required digital skills that were still associated with masculinity.

In a broader scope, Wu, Tandoc and Salmon (Wu, Tandoc & Salmon 2019a) applied field theory to assess the impact of technologists in newsrooms. Based on interviews with representatives of ten technological firms that provided services to media organisations, they found that the firms were able to impose their logic on the journalistic field, which drove innovation in the field, gradually redefining journalism.

Perreault and Ferrucci (2020) interviewed 68 US-based digital journalists and found that the arrival of new entrants and their significant roles required a redefinition of the journalistic field and that digital journalism was no longer a journalistic sub-field but "business-as-usual throughout the journalistic field" (p. 1309) because digital norms had been normalised in newsrooms.

Research on data journalism includes aiming to understand the responses of players in the journalistic field to technological advances and their endeavours to adopt technology while preserving traditional values and promote their professional identities (Hermida & Young 2019). The dynamics in newsrooms adopting data journalism result from negotiations between the fields of reporting and computer science, which can be affected or shaped by the other institutions that seem unrelated, including not-for-profit organisations and donor agencies (Anderson 2013). Hence, field theory is considered valuable for understanding the latest developments in journalism (Wang 2018), including data journalism, as it captures the dynamics of adopting innovations in not just the field of journalism but also the broader news ecosystem (Fahmy & Attia 2021). In other words, "field theory may be most helpful for mapping the structure of the space and the factors shaping that structure" (Lowrey, Sherrill & Broussard 2019, p. 2145).

While many studies of data journalism may or may not mention theoretical frameworks (Ausserhofer et al. 2020), their discussions could still fit within field theory discourse. These include, among others, discussing the entry of new agents and their increasing roles in the journalistic field (Chua & Duffy 2019; Engebretsen, Kennedy & Weber 2018; Sandoval-Martín & La-Rosa 2018); journalistic cultural and economic capital (Engebretsen, Kennedy & Weber 2018; Hermida & Young 2019; Porlezza & Splendore 2019; Royal & Blasingame 2015); and the influence of other fields (e.g., the role of government and not-for-profit agencies) (Appelgren & Salaverría 2018; Lewis & Nashmi 2019; Lowrey, Broussard & Sherrill 2019; Stalph, Hahn & Liewehr 2022).

2.8 Gaps in Research

As mentioned in Section 2.1, in my search of the literature I found only one peer-reviewed journal article specifically discussing data journalism in Indonesia, namely, Bayu & Triastuti (2020). This article examines data journalism in an online news outlet

and its impact on the news accuracy produced by the newsroom. It is apparent that the adoption of this journalistic genre and its impact on media organisations, online, and legacy media, in Indonesia remains largely unexplored. Given the proliferation of studies of data journalism in countries comparable to Indonesia, especially in the global South, it is time to bring research tools to Indonesia.

Stretching along 4,000 kilometres of the equator between Asia and Australia and between the Indian and Pacific Oceans, Indonesia is the world's fourth most populous country, with 270 million people (World Bank 2019b). After Suharto's three-decade, New Order militaristic rule collapsed in 1998, Indonesia held its first democratic election since 1955 to elect representatives in 1999 (Liddle 2000). In 2004, Indonesians directly elected their president for the first time, making it the world's third largest democracy (Barton 2010). Scholars affirm that the period after Suharto was a time of consolidation for news media in terms of professionalism, business models, ownership, and idealism (Haryanto 2011; Ida 2010; Irawanto 2011; Steele 2011). Journalists in Indonesia have been characterised as adhering to ethics, being neutral and precise, prioritising facts, voicing marginalised people, and monitoring power (Hanitzsch 2005; Steele 2011).

Around the world, internet penetration, online advertising, and the affordability of smartphones have posed challenges for journalism and decimated its business models (Nolan & Ricketson 2019). As more people have accessed social media to obtain, create, and share information, the roles of journalism and its credibility have been questioned (Hermida & Young 2019). The spread of disinformation on digital platforms, where news content also circulates, has caused people to think that journalism products also contribute to it (Lima-Quintanilha, Torres-da-Silva & Lapa 2019). In Indonesia, this has happened in the past ten years, during which, as mentioned earlier, three contentious elections took place: the presidential elections in 2014 and 2019 and Jakarta's gubernatorial election in 2017. The rapid spread of disinformation leading up to and between the elections both attacked and glorified the contestants (Kaur et al. 2018). In those critical moments, several Indonesian news outlets adopted data journalism.

Within this context, it is important to explore how the news outlets in Indonesia perceive and define data journalism, and why and how they have adopted the genre. Also, it is crucial to investigate through political and economic lenses the challenges they faced and how they managed to resolve them, and to pose the question, "How might data journalism change how journalists do their job and the newsroom structures?"

This present study was designed to reduce the gap in data journalism scholarship, and to address the lack of research in the field by inspecting and comparing data journalism in legacy media organisations and new online outlets in a non-Western environment (Appelgren et al. 2020; Fink & Anderson 2015) . To better understand the practice of data journalism in Indonesia, this research applied field theory, focusing on the dynamics inside newsrooms, opposition between agents, and the impact brought or received by adjacent fields (Coddington 2015). Using theory should add new knowledge to this area of study because much of the previous research has not mentioned theoretical frameworks (Ausserhofer et al. 2020).

2.9 Conclusion

In this chapter, I have presented previous studies on data journalism to situate my research. I explained the scope and search strategies I used to identify the key literature and crucial findings from existing research on data journalism, highlighting noticeable gaps. I used the UTS Library search engine and then applied relevant keywords. The results were 136 peer-reviewed journal articles from various databases. I also created a window period from 2011 – but not limited to – 2021. The starting year was selected because some literature indicates that data journalism was started to emerge at that time (Houston 2015).

Crucial findings from the literature included the definition of data journalism. Since data journalism is considered new, there is no single definition widely accepted by scholars. Previous researchers attempted to give it boundaries based on the work process, products, or their research participants' perceptions. For journalists, adopting data journalism is an attempt to improve credibility and strengthen the role of their profession. This is because numerical evidence is perceived powerful for interrogating

government policies, for example. However, problems with adopting the data journalism have persisted. From a micro-political perspective, there are problems related to data availability and reliability, and from a micro-economic perspective, there are the financial constraints of news outlets and journalists' lack of skills.

Facing such challenges, some media outlets and their journalists have shown persistence in implementing data journalism. Working on data journalism has changed the ways journalists do their jobs and how they see the news. It has also required news outlets to adjust their organisational structures and staffing. Some of the studies I reviewed had applied field theory to investigate the intertwining of journalism and technology that has resulted in data journalism. I consider field theory appropriate for this study because it illuminates the dynamics within the field of media and its subfields, including changes in the newsroom, influences on the broader media field, the impact of new entrants, and the flow of influence between media and other fields beyond the media (Benson 1999). Hence, this thesis presents a holistic analysis of the adoption of data journalism in Indonesia, where it has not been sufficiently mapped or investigated, to answer Research Questions outlined in Chapter 1.

In the next chapter, I will elucidate my rationale for selecting field theory and discuss its concepts using examples of journalistic practices and values. I also introduce some concepts related to the discussion of this thesis, explain the relationship between these concepts and how they would be applied to this thesis.

Chapter 3

Theoretical Background and Conceptual Framework

In Chapter 2, I reviewed the existing research on data journalism. I also showed how some researchers have used field theory. Although many journalism scholars have expanded their investigations beyond the Western democratic countries, I could only find one peer-reviewed journal article focused on Indonesia, a case study of a single news outlet. Other than that, there are conference papers and undergraduate theses. Based on the literature review, it is apparent that the field of data journalism in Indonesia is under-researched.

In this study, I have addressed this gap in the field by undertaking a more holistic investigation of this dynamic and evolving aspect of journalism. I applied Pierre Bourdieu's field theory and component concepts to analyse (a) how journalism in general is evolving as a field, (b) the influence of data journalism as a new species of cultural capital, and (c) the shifting power and position of the new entrants who are developing and practising this influential new kind of journalism. Field theory was developed by Bourdieu (Bourdieu 1996, 2005, 2018; Johnson & Bourdieu 1993) and further explored by scholars such as (Swartz 1997). As discussed in Chapter 2, its key concepts – field, habitus, and capital – have been applied to media (Hesmondhalgh 2006), media studies (Benson 1999), and journalism (Benson & Neveu 2005a, 2005b; Champagne 2005; Schultz 2007).

In this chapter I explain my rationale for selecting field theory and discuss its concepts using examples of journalistic practices and values. I argue that, based on its characteristics, the field of journalism can be positioned in what Bourdieu (1996) called the field of cultural production, which is within the field of power. The latter part of the chapter introduces additional concepts and terms employed in this thesis: digital disruption, discipline verification, data journalism, news values, and public relations. I conceptualise these using the field theory paradigm, explore the relationship between them, and describe their application in this study.

3.1 Theoretical Background

French social scientist Pierre Bourdieu (1930–2002) is widely known for his analyses of issues related to education, language, literature, law, gender, and media. He developed field theory to explain social phenomena, especially "the relationship between objective social structures (institutions, discourses, fields, ideologies) and everyday practices (what people do, and why they do it)" (Webb, Schirato & Danaher 2001, p. 1).

The application of field theory to media has illuminated the dynamics within the field of media and its subfields, including changes in the newsroom, influences on the broader media field, and the flow of influence between media and other fields beyond the media (Benson 1999). Even when researchers have not investigated political action or highlighted macro-political impacts on the journalistic field, field theory has still been successfully applied "to explain news media content by the specific interests of the journalistic field as well as by reference to external pressures" (Benson 1999, p. 489).

Media researchers have applied Bourdieu's field theory and its concepts. A study by Maares and Hanusch (2020) examines interpretations of the journalistic field from 249 scholarly articles on journalism dispersed in 74 different journals from 1998 to 2018. Couldry (2004) implemented and tuned field theory "to understand the media both as an internal production process and as a general frame for categorising the social world" (p. 2). More recently, Hess (2017) drew on Bourdieu to offer a different way of conceptualising the news media's relationship to society in an era where journalism faces unprecedented challenges. Hallin and Mancini (2004, 2011) also used Bourdieu's concepts to compare media systems in several countries in five continents, including China and Thailand in Asia.

In journalism practice studies, Danzon-Chambaud and Cornia (2021) applied field theory to investigate the impact of automated journalism on news people, journalism doxa, and the journalistic field. Wu, Tandoc and Salmon (2019a, 2019b) highlighted how automation transforms journalism and how technological people working in the newsroom influence the journalistic field. Vos et al. (2019) argued that audiences have

become one of the new entrants in the journalistic field, bringing their own capital, and Wang (2018) studied journalists' implementation of audience metrics.

In data journalism, field theory has been used to study the deployment of the journalistic genre in the Arab world (Fahmy & Attia 2021). In the United Kingdom, a study on *The Guardian's* big data journalism used field theory (Tandoc Jr & Oh 2017). Field theory also became tool of analysis to scrutinise the roles of organisations supporting journalism, such as foundations and professional associations (Lowrey, Sherrill & Broussard 2019). Field theory was applied to investigate barriers for women in Europe, the United States, and Latin America to excel in their careers as data journalists (De Vuyst 2018).

Field and the Journalistic Field

Bourdieu perceived society is a composition of various fields that interact and influence each other or are semi-autonomous. He defined *field* as follows:

> A field is a field of forces within which the agents occupy positions that statistically determine the position they take with the respect to the field, these position-takings being aimed either at conserving or transforming the structure of relations of forces that is constitutive of the field (Bourdieu 2005, p. 30).

According to Bourdieu, the social space contains within it the field of power, and within the field of power is the field of cultural production (which includes fields of science, social science, law, religion, art, literature, and music) (Hesmondhalgh 2006, p. 212). Each field strives to strengthen its capital to enhance its independence or autonomy and to exert its power on other fields (Benson 1999). Fields are "governed by their own 'rules of the game' and offering their own particular economy of exchange and reward, yet whose basic oppositions and general structures parallel each other" (Benson 1999, p. 464).

The oppositions within each field reflect the hierarchies in our society. Powerful people and groups that accumulate wealth and power seek to control others (Benson 1999). The rules of the game in each field define the value held by each member of society within

the field. The dominant group of the social space is split into two realms: those who inhabit and control economic and political power and those who hold cultural power.

Figure 3.1 illustrates the concept of the fields introduced by Bourdieu (1996). The field of power is occupied by the dominant classes. On the left of the diagram, the proportion of cultural capital (CC) increases, and, on the right, economic capital (CE) increases. The field of power is located at the top because it has enormous cultural and economic capital. The lower space is occupied by those with less capital and dominated by those in the field of power. Within the field of power is the field of cultural production, in which lies the subfield of small-scale production.

The cultural production field is perceived to get weaker because of the influence of agents in the field of power outside the cultural production field who posses economic and political capital (Benson 1999). However, cultural capital, which includes religion, science (and the intellectuals), art, and language (Swartz 1997), is still crucial because it legitimates economic and political capital.

> A cultural field can be defined as a series of institutions, rules, rituals, conventions, categories, designations, appointments and titles which constitute an objective hierarchy, and which produce and authorise certain discourses and activities. (Webb, Schirato & Danaher 2001, p. 21)

Within the field of power are subfields, each of which has specific capital that is valued in accordance with the norms that apply in each of these fields. Each subfield also has a different degree of relative autonomy in relation to others. The autonomy of a field is measured by its ability to ensure a total creative process without the involvement of other fields and the ability to resist the "symbolic violence" deployed by other dominant forces (Benson 1999). Symbolic violence is the exercise of non-physical violence by more powerful groups over a subordinated groups so that the latter adhere to the values introduced by the former (Lawler 2011).

Figure 3.1
The Field of Cultural Production Within the Field of Power

Key

——	Social space	CE	Capital – economic
——	Field of power	CC	Capital – cultural
– – –	Field of cultural production	CSs	Capital – symbolic, specific
------	Subfield of small-scale production	AUTON+	High degree of autonomy
		AUTON–	Low degree of autonomy
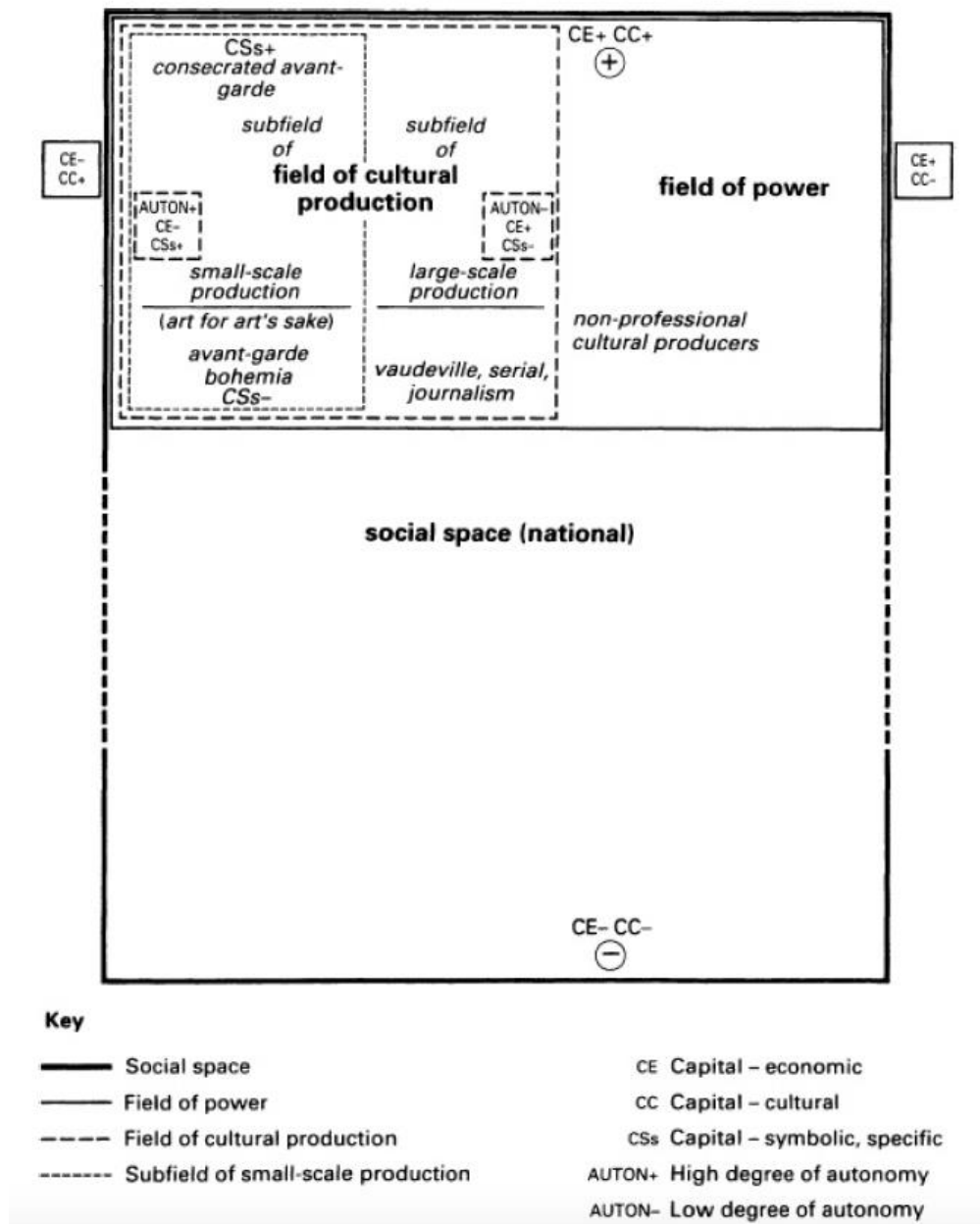
Source: Bourdieu (1996, p. 124)

A field is a location where individuals, groups of people, or organisations compete to expand their capital. This competition happens whether it is planned or not, and whether the participants within the field are aware of it or not (Benson & Neveu 2005b). For example, in the journalistic field, news outlets compete to get the information first and present them in the most engaging way, for example, exclusive interviews with prominent people. By doing so, a news outlet can build its readership, attract advertisers, and earn respect from others news outlets and agents in other fields (Benson

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& Neveu 2005b). In a newsroom, journalists compete to propose their stories, and there are rewards for journalists who get exclusive interviews or reveal government scandals.

Field theory places the journalistic field in the field of cultural production (see Figure 3.1), where artists, poets, and scholars involved in symbolic production (Benson 1999). The field of cultural production is located in the field of power. Bourdieu portrays the field of cultural capital on the upper left side of the figure. However, because of the influence of economic capital, those subfields within the cultural production field that have the characteristics of large-scale production are closer to the economic and political pole. Whereas fields with restricted production characteristics (e.g., avant-garde art and poetry, and "art for art's sake") are on the left and they enjoy a greater autonomy.

Indonesia provides evidence of the significant role of cultural capital, particularly the field of religion (Islam) in shaping values in the community and legitimating economic and political power. In the wake of the emergence of Islamic populism and the frequent Islamist-populist mobilisations (Mietzner 2018; Rakhmani & Saraswati 2021), politicians running for office have needed to associate themselves with Islam. Joko Widodo and Prabowo Subianto, competitors in the latest two presidential elections, often visited *pesantren* (traditional Islamic boarding schools) and met *kiai*[10] (owners and principals of *pesantren*) during their campaigns. Mr Widodo, who is viewed by some Islamic groups as less Islamic (Baiduri 2017), chose a *kiai*, Ma'ruf Amin, as his running mate in the 2019 presidential election. Meanwhile, Mr Subianto paid a visit to Rizieq Shihab, the leader of the Indonesian Islamic Defender Front who was in exile in Saudi Arabia, and promised to bring the cleric back home if he won the election (Aji 2018). The religious field thus has a strong influence on the journalistic field in Indonesia. When talking about telling the truth, educating the public, and other journalistic values, journalists in some media outlets state that their values are based on Islamic principles and they believe that carrying out these tasks is one of their obligations as a Muslim (Steele 2018).

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[10] Kiai is a respected Islamic religious title in Indonesia. In addition to managing the pesantren, Kiai also provides moral guidance for the community surrounding the pesantren (Surahman 2020). The is a group of distinctive kiais who play an essential role in socio-political issues (Bashri 2021).

The journalistic field lacks autonomy because it is continuously influenced by social situations, especially politics and economics. However, it has the unique position of scrutinising these other fields and making knowledge about them public. This means the journalistic field is also powerful and can influence other fields, thus attracting players in the economic and political field to occupy journalistic field (Champagne 2005). The media landscape in Indonesia show example of the view since business people and politicians control some key media outlets[11].

Despite its dependence on and influence from other fields, the journalistic field distinguishes itself by enforcing its "autonomous principles" (Webb, Schirato & Danaher 2001). These principles define the journalistic field, as well as legitimate its actions to the broader community. The principles are institutionalised in the code of ethics, which guides practitioners in carrying out their tasks and shapes their work output. These principles are also used by their peers to judge journalists' actions and works, regardless of their dependence on external forces (Webb, Schirato & Danaher 2001). Key principles of Indonesia's journalistic code of ethics include conveying the truth; applying verification and using credible sources; giving voice to marginalised people; and avoiding conflict of interest (AJI 2021).

To enhance its relative autonomy, the journalistic field seeks to improve its capital. University journalism majors and other forms of journalism training are examples of efforts to strengthen the journalistic field. Likewise, the growth of professional journalist organisations and media company associations is expected to enhance and improve the standards of professionalism. In Indonesia, the Press Council encourages all journalists to participate in competency testing, and it conducts administrative and factual verification of news organisations (Yoedtadi & Soares 2021).

New Agents

The position of any field is relative because of the dynamics within the field itself and its relationship with other fields. The "objective" structure of a field that determines its position is related to the "subjective" perspective obtained from the life experiences of

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[11] Chapter 5 of this thesis will outline media network ownership in Indonesia that is controlled by business people and politicians.

each agent within the field (Benson 1999). Therefore, demographic changes in a field can have a fundamental impact on the field in terms of quality, quantity, and relative autonomy. When new agents enter the journalistic field, they bring to it different species of cultural capital, including educational backgrounds and work experiences, which can change journalism practices, for example, the way news is selected and disseminated. Here, the opposition is between the established players and the new entrants occurs, which may change this field and impact other fields. However, an influx of new entrants would not be likely to change the journalistic field dramatically except in certain conditions such as substantial and sudden changes in politics, law, and economics (Benson 1999). To explore this area, it is necessary to discuss two key concepts from field theory in more detail: habitus and capital.

Habitus

Habitus is a fundamental concept in field theory. It makes sense of the interactions within society or a field, where society shapes individuals by exerting its values and norms on each agent within it, but also the other way around, where individuals influence and shape a society (Benson & Neveu 2005b). "Habitus is a socialised subjectivity" (Bourdieu, cited in Benson & Neveu 2005b, p. 3), a norm or custom that agents uphold in a particular field and which distinguish that field from other fields. Habitus includes judgment, attitude, values, and behaviours that are engraved in an agent as a result of their experience.

Habitus consists of rules or values passed on by generations (Webb, Schirato & Danaher 2001). An agent in a field usually accepts its habitus and behaves according to it. Bourdieu described this as an "illusion" in which an agent submits to norms and follows the rule of the game in a field in which they exist because it is considered worth doing (Benson & Neveu 2005b). However, habitus is not unchangeable. It may change gradually because of interactions with other fields or the arrival of new entrants in a field who brings their strong experiences from their previous fields (Webb, Schirato & Danaher 2001).

Thus, habitus differentiates one field from another. While some people may be exposed to a habitus from an early age (from parents or other family members), others may

internalise it by attending training courses or when entering a profession. Furthermore, Bourdieu explains that habitus is the sense of understanding of the rules of the game and the feeling of being part of the game (Schultz 2007). In the journalistic field, the ways news organisations decide which events are news and how they present these to their audience are acts of materialising the habitus and maintaining the position of the journalistic field (Benson & Neveu 2005b).

For journalists, habitus is an attitude or behaviour that comprises, but is not limited to, curiosity, being sceptical, having a nose for news or a news sense, being able to learn and understand various topics in a short time, and paying attention when other people speak. Habitus is also deployed by agents from different positions in a newsroom. There are various types of habitus in a newsroom, for example, new-entry habitus, reporter habitus, editor habitus, photographer habitus, and designer habitus. In addition, habitus can be based on the journalistic genres and their mediums. Examples of journalistic genres pertinent to this study are the investigative habitus and the data journalism habitus, and for the news media, the print habitus and the online habitus (Schultz 2007).

The more capital an agent has, the more they can apply the habitus from their own point of view (Schultz 2007). An editorial meeting in a newsroom is an example of this. When an editor-in-chief proposes a news story, all the editorial members will most likely accept it without an intense debate. However, when it comes from a young editor or new entrant, a proposed story is often rejected, also without a fierce debate[12]. Consequently, those who have more capital contribute more to doxa, which are the guidance or rules that are institutionalised and therefore accepted and taken for granted by all agents in a field without question (Benson & Neveu 2005a). In Bourdieu (2005) words, the doxa provides "the universe of the tacit presuppositions that we accept as the natives of a certain society" (p. 37). Hence, in the journalistic field, doxa is the journalistic culture, which "can be defined as a particular set of ideas and practices by which journalists, consciously and unconsciously, legitimate their role in society and render their work meaningful for themselves and others" (Hanitzsch 2007, p. 369). As in any other field, doxa in the journalistic field is subject to change (Tandoc Jr 2013).

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[12] I witnessed this situation during my working period in some news organisations (2001-2018), from discussions in editorial meeting rooms to discussions on WhatsApp groups.

Agents in the field can renegotiate it to adjust to the challenges they face or to respond to the effects of other fields.

Capital

Habitus enhances the creation of capital, which an agent needs to compete in their field. For example, an agent who developed a habitus of reading and writing from an early age would be likely to possess capital that enable them to be successful in the field of literature. For Bourdieu (2018), capital is material goods or things incorporated into an agent's body and mind that allow the agent to reap benefits from the field and reproduce or leverage the capital. In addition to an individual agent, capital also exists in a group of agents (organisation), but this takes time to accumulate.

There are four types of capital: economic, cultural, social, and symbolic (Swartz 1997). Economic capital is the most convertible as it could be transformed into money and wealth (power). Cultural capital takes forms in physical objects (such as books and dictionaries), in the mind and body (skill, knowledge, and wisdom), and state institutions (education qualifications and professional certifications). Social capital comes from the relationships or networks of an agent, including family. Symbolic capital is the type of capital obtained by an agent from his or her family, community, organisation, or country (McCall 1992).

Capital and power reinforce each other. The more capital an agent has, the more power they have in the field (Webb, Schirato & Danaher 2001). As mentioned in the previous section, an agent with a larger amount of capital has the power to define the doxa and, moreover, to emphasise a type of capital so that it becomes the most important type in a particular field. I experienced this when I was a journalist with Tempo, in Indonesia, between 2003 and 2014. In editorial meetings and evaluation classes led by Tempo's senior editor (and founders), clarity, accuracy, and exclusive news (a scoop) were the three elements they always emphasised. A writer lacking these qualities would find it harder to get a promotion (and a higher salary).

Clarity and accuracy are included in the ways journalists present intelligent commentary and in-depth reporting, and hence are cultural capital in the journalistic field (Benson &

Neveu 2005b). These types of cultural capital are preserved in awards given to the journalists or news outlets. Apart from cultural capital, the journalistic field also possesses economic capital in the form of circulation, advertising revenues, subscriptions, and the number of visitors to online news outlets. These types of economic capital result in what Hesmondhalgh (2006) has called the heteronomy of the journalistic field.

3.2 Why Bourdieu? To Avoid Being Internalistic and To Focus on the Micro-Level

According to Benson (1999), "Field theory highlights processes of change, both how the media field itself is transformed and how a reconfigured media field affects other major societal sectors" (Benson 1999, p. 463). I applied Bourdieu's concepts in this investigation of the adoption of data journalism in online news media outlets in Indonesia because it allowed me to highlight the processes and dynamics within newsrooms, as well as influences from other fields outside journalism.

Drawing on Bourdieu's field theory, Anderson (2013) has offered an "institutional lens" to approach data journalism. Using this lens, researchers can locate data journalism as a result of the interaction of traditional journalism and computer science. Hence, it is essential to explore the power struggles within the field and how they shape data journalism practices. Also, it is crucial to examine the role of other fields or institutions that might be considered unrelated to data journalism but contribute to shaping it. In the context of this study, examples of such institutions are not-for-profit foundations and government agencies.

The institutional lens is one of six lenses of sociological approach promoted by Anderson (2013) to maintain objectivity in researching computational journalism. He argues that some researchers in the journalistic find themselves as "internalists", who considering the journalistic problem from the point of view of its players. This tendency exists because the notion of the fourth estate and journalism's role as a watchdog drives the researchers to advocate journalism rather than to understand it. The other five lenses are politics and public policy; economics; organisational-level dynamics; cultural history; and technological and news. Field theory reinforce each of these lenses, that are

originating from research paradigms applied by the Anglo-American researcher (Benson & Neveu 2005b).

According to Anderson (2013), using a political lens to analyse newsroom behaviour can help researchers understand the characteristics of the newsroom. However, instead of focussing on the macro-political system characterised by the terms democratic, undemocratic, and parliamentary, researchers should focus on the micro-level system to reap the uniqueness of the field in a particular country. In the context of this study, this includes policy implementations and bureaucratic regulations that affect the adoption of data journalism by news outlets. Among other things that fall within the scope of the politics and public policy lens are transparency and accessibility of government data and how the government perceives data as a tool for decision-making. Policy implementation within these areas would decisively impact the application of data journalism. Using this lens, researchers could collect evidence of the uniqueness of data journalism practice in a specific political territory as a result of data journalists' response to its policies.

Anderson (2013) suggests that using an economic lens would allow examination of an organisation's economic resources, instead of focusing on the traditional analysis of the "economic organisation of news" derived from the old political contest between democracy and communism during the Cold War era. In deploying this lens, researchers could focus on the resources of media organisations and their correlation with the adoption of data journalism. They could also highlight the efforts made by newsrooms to tackle resources constraints when working with computational journalism, which could involve parties outside journalism such as open-source software makers and volunteers. Thus, as micro-levels systems, politics and economics influence journalistic practices (including the adoption of data journalism) and news organisations (Benson & Neveu 2005b).

Through the organisational-level dynamics lens, one can look at the day-to-day organisation process of computational or data-driven journalism practices inside newsrooms. Depending on their characteristics, different media organisations have different routines that would influence the implementation of data journalism. Using this lens, a researcher could scrutinise the dynamics of a newsroom, such as individual

rivalries, workflow, bureaucratic division, and level of technological adaptation (Anderson 2013). Field theory also considers these areas, but with a "more systematic attempt to incorporate empirical data on individual journalists, newsbeats, and media organisations into progressively larger systems of power" (Benson & Neveu 2005b, p. 11).

The next lens is cultural history. Technology has an impact on journalism culture; for example, the way that journalists include personal stories in the news and emphasise human interest. Does the existence of big data dehumanise news stories? Would journalists become more focused on incidents and numbers? Using this lens, a researcher could consider how an interaction between human and material (data) might impact the adoption of data journalism in a newsroom (Anderson 2013).

Finally, the technology and the news lens could help a researcher understand data journalism from the point of view of technology by "examining values in journalistic design, the hybrid nature of newsroom sense-making, and the changing status of journalistic evidence fostered by the exponential increase in types of digital evidence" (Anderson 2013, p. 1017). Included are the "rules" applied by search engines and how these change the journalistic artefacts, and the aspects of traditional journalism that fit with the technology or are irrelevant and should be abandoned. And how do digital objects, i.e. database and social media, alter "journalists evidentiary calculations about what counts as proper story evidence" (p. 1016)? While Bourdieu was sceptical of the impact of new technology on the communication system in his era, there is no doubt that the internet has revolutionised the ways and means of communication, including news media and journalism (Benson & Neveu 2005b).[13]

A researcher might only use one of these lenses to study the adoption of data journalism (Anderson 2013). However, it is unlikely that this would allow the best insight into the practices that emerged from the intersection of various fields. Moreover, researchers have to be aware of the overlap between lenses when combining them. For example, discussing a daily routine could not be separated from the political, economic, and

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[13] In the 1990s, internet penetration in France (where Bourdieu lived) was not as advanced as in the US. Hence, his works do not specifically cover this development (Benson & Neveu 2005b)

institutional contexts. Likewise, cultural history and technology and the news could discuss the same objects, human and technology, and so on.

Four of Anderson's (2013) lenses – politics and public policy; economics; institutions and fields; and organisational-level dynamics – were developed from Schudson's (2005) classic typology of the sociology of news. Each lens views the evidence through its point of view. From this Bourdieuian perspective, I argue that applying each lens means that a scholar must pay attention to internal dynamics (interaction between agents) and influences from other fields beyond journalism, such as government bureaucracy, technology, and social media.

3.3 Conceptual Framework

Digital Disruption

Disruption occurs when a new entrant in a business field who has fewer resources gradually gains a foothold and poses a risk of the existence of the players currently dominating the field. Typically, the new entrant offers one or some elements of service that the incumbents ignore because they are considered less profitable, or they require a significant investment. Instead, the established agents keep focusing on their priorities, which are based on profit. The disruption starts to happen when the new entrant offers the same service, which, because it is delivered using fewer resources, significantly lowers the price compared to that of the incumbents (Christensen, Raynor & McDonald 2013).

Such disruption is often associated with the adoption of technological innovations. The new entrants use technological advances to weaken the incumbent and force it out of business by changing the rules of the game in the field (Tan et al. 2015). Established players must then adapt to the technology to keep themselves in the field. This requires a massive effort because the established players also need to adjust their organisations and human resources to the new reality (Karimi & Walter 2015). Young and Hermida (2015) noted:

> Disruptions refer to the radical changes provoked by the affordances of digital
> technologies that occur at a pace and on a scale that disrupts settled

understandings and traditional ways of creating value, interacting and
communicating both socially and professionally. (p. ii)

In the journalistic field, digital disruption originated in the mid-1990s with the adoption
of the internet by news organisations and their introduction of online newspaper sites
(Nolan & Ricketson 2019). Nguyen (2008) has discussed the attitudes of traditional
media organisations coping with new technology in the 1990s. The news media adopted
the internet and went online at a time when newspapers, radio, and television were
monopolising news dissemination and retaining advertising revenues. The websites
merely acted as another platform to showcase contents available in the old medium.
Instead of focusing on the advantages of the internet, these news media organisations
positioned it to promote their core business products. As well, their established
journalists considered online news outlets less impressive and less reputable than
tradition media[14] (Grubenmann & Meckel 2017).

Indeed, some traditional news media tried to attract advertisers to their websites, but
from within the old paradigm, offering advertisers the same treatment on different
platforms. Hence, the arrival of social media, which offered targeted advertising,
disrupted the news industry (Nolan & Ricketson 2019). The use of internet algorithms
and social media, particularly Facebook, became cost effective because they delivered
advertisements directly to the consumer, who would then be more likely to buy the
particular products or services (Brake 2017).

Disinformation

Along with disrupting the news business, the internet, social media, and smartphones
have enabled consumers and audiences to produce and disseminate their own content,
including "news". This content quickly spreads and targets social media users who are
interested in it or have similar views. The massive circulation of social media content
has undermined the gatekeeper role of journalism (Rusdi & Rusdi 2020). As a result,
disinformation has become prevalent. It has circulated in the wake of important events
such as political contestation and the COVID-19 pandemic, deteriorating the discourses

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[14] This reminds me of my conversation with my colleague in *Tempo* magazine in Indonesia in 2005. He felt
dumped after receiving a memo about his transfer from the magazine newsroom to its online newsroom.

and hampering efforts to address the problems. George & Youm (2022) explain that access to the internet, which allows people (particularly in Asia) to be heard, could be a threat to journalism, primarily when this "ground force" is utilised by powerful people or groups to push their agendas. Apart from spreading disinformation, this force can undermine journalism by launching doxing, for example, contradicting the widespread assumption that the public has similar concerns with and supporting journalism (Masduki 2021).

Among the several terms useful for referring to non-genuine and deceptive information, including hoaxes and fake news, I prefer *misinformation* (the inadvertent sharing of false information) and *disinformation* (the deliberate creation and sharing of information known to be false) (Wardle 2017, p. 1) to distinguish between the different types of false information. According to the *Oxford English Dictionary* (2021b), misinformation is "the action of misinforming someone", and disinformation is "the dissemination of deliberately false information, esp. when supplied by a government or its agent to a foreign power or the media, intending to influence the policies or opinions of those who receive it" (2021a). The difference between misinformation and disinformation is the actor's intention. Misinformation is delivered by a credible actor followed by correction or clarification, while disinformation may have no known source and little or no motive for the actor to correct it (Jack 2017; Wardle 2017). Table 3.1 illustrates the types of misinformation and disinformation.

Table 3.1

Types of Misinformation and Disinformation

No.	Types	Characteristic
1	Satire or parody	No intention to cause harm but has the potential to fool
2	Misleading content	Misleading use of information to frame an issue or individual
3	Imposter content	When genuine sources are impersonated
4	Fabricated content	News content is 100% false, designed to deceive and do harm
5	False connection	When headlines, visuals or captions do not support the content
6	False context	When genuine content is shared with false contextual information
7	Manipulated content	When genuine information or imaginary information is manipulated to deceive

Source: Wardle (2017)

Regardless of their work procedures and product quality, anyone can disseminate information they create and claim it as journalism. Individuals without journalistic backgrounds who have large followers have the power to invite public figures for interviews. In April 2019, a week before Indonesians were to cast their ballots for the presidential election, the incumbent, President Joko Widodo, invited YouTuber Atta Halilintar to interview him in the presidential palace. At that time, Halilintar's YouTube account was subscribed to by 11 million users. In the first hour, the interview was seen by 300,000 thousand subscribers. Instead of doing a formal interview (separated by a table, wearing formal attire like a journalist does typically), Halilintar wore a hoodie, sunglasses, headband, and spoke informal Indonesian (Figure 3.2) (Halilintar 2019)[15].

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[15] In June 2021, Halilintar was followed by 27.6 million subscribers. His video interview with Joko Widodo reached 14 million viewers.

Figure 3.2

Screenshot From the Interview Between Atta Halilintar and President Joko Widodo

Note. Youtuber Atta Halilintar (left) interviewing President of Indonesia Joko Widodo in the presidential palace on April 2, 2019 (Halilintar 2019).
Image captured from YouTube on 5th June 2021

Discipline of Verification

According to Hanitzsch and Örnebring (2019), a journalist's professional identity is characterised by their submission to the core values widely accepted by the agents in the profession and by their alignment with the public's expectation of the role of journalism in society. In a democratic society, the journalist is expected to act as a watchdog, provide information and commentary to the public, force power holders to be accountable, and offer guidance to help the people to make decisions such as electing officials. In performing their roles, journalists have to adhere to the core values encapsulated in "the elements of journalism" (Kovach & Rosenstiel 2007). One of the elements that separates journalism from other creative works is verification, the process of establishing the truth by checking or confirming.

The discipline of verification is an intellectual value based on transparency, humility, and originality (Dean 2019). It is crucial that journalists are transparent in their working process so the public can assess their credibility. Humility means they need to not

behave as though they are omniscient. Originality means they are obliged to do their own work and avoid using someone else's work, thus hindering the use of unverified material. The notion of verification justifies the journalist's role in society and bestows the right to interrogate public officials, experts, and corporations (Hermida 2012).

Verification is even more crucial in the age of social media. In addition to social media content resembling news, news media outlets also disseminate their news (especially breaking news) on social media, forcing journalists to deliver news even faster. Reporters are expected to send their stories from the field, relying on information obtained on the spot without a chance to re-check it, which can result in misleading or incomplete information (Fitzpatrick 2018). Meanwhile, the emergence of Twitter, with its special characteristics of short and fast messaging, has forced journalists to consider it as a news source (Berkowitz 2019). A survey conducted in Poland, Russia, and Sweden found that, despite perceiving verification as necessary, in daily practice, the journalists tolerate inaccuracy. They agree that verification can be done at the same time as the preparation of a news story instead of prior to it (Nygren & Widholm 2018).

Data Journalism

> Data journalism is journalism, an approach to knowledge creation, verification, and communication rooted in values such as honest inquiry and fairness (Lewis 2021, p. 80).

Facing the spread of disinformation, news outlets are managing to improve their journalistic practices. The use of data (specifically numerical data) is expected to limit the spread of false information (Reilly 2018). Hence, data journalism is considered an effort to exercise verification, which is one of a journalist's professional duties (Lewis 2021; Lorenz 2012). The emergence of data journalism has also been powered by the data deluge arising from technological advances (Lewis 2015).

Data journalism is the continuation of computer-assisted reporting (CAR), which the US broadcaster CBS applied during the presidential election of 1952 (Houston 2015). While there is some overlap between CAR, data-driven journalism, and computational journalism, CAR does not need the significant involvement of another field outside

journalism. By contrast, data journalism requires participation from different professionals. Computational journalism uses applications and automatisation to fast-track journalism work processes, improve news interfaces and visualisation, and enhance the spreadability of news (Coddington 2015).

There is no single definition of data journalism (Stalph 2018). Its definition is relative because it depends on the technology (Lewis 2021). However, previous studies have attempted to define data journalism by analysing its work processes and products or by allowing their research participants to define it. Table 3.2 shows several definitions suggested by researchers.

Table 3.2

Definitions of Data Journalism

Data journalism definition	
Based on work process	Based on data journalism product
Data journalism is a combination of journalistic skills and the management and use of large-scale data processed with specific software. "Data can be the source of data journalism, or it can be the tool with which the story is told—or it can be both" (Bradshaw 2012).	Data journalism can also present complex data in simple and easy to understand, with various outputs from text, infographics to videos that attract the audience's attention (Bradshaw 2012).
A journalistic process is started by analysing big data, filtering, and visualising in graphic or multimedia with a narration (Lorenz 2010).	Since visualisation is often necessary, data journalism usually employs the following feature: maps, bars, charts, images and other graphics (Royal & Blasingame 2015).
The practice initiated by analysing numbers to obtain stories and present the number to explain the stories (Howard 2014).	The form of the end product is not relevant. Data journalism is based on numbers and statistics (Rogers 2012).
Data journalism stages as the following: data compilation, data cleaning, data understanding, data validation, data visualisation, and article writing Veglis & Bratsas (2017).	Stories that are drawn from numbers. It is the number that becomes the news peg and drives the journalist to work on, and its product is featured substantial elements of data and visualisation (Knight 2015).
A collaboration between traditional journalist methods and data analysis, programming, and visualisation skill (Appelgren & Nygren 2014).	"Informational, graphical accounts of current public affairs for which data sets offering quantitative comparison are central to the information provided" (Lowrey & Hou 2021, p. 41).

News Values

A study by Galtung and Ruge (1965) titled "The Structure of Foreign News" is referred to as the seminal work on *news values*. As well as formalising the term (Caple & Bednarek 2016; Harcup & O'Neill 2017), it explains the 12 factors influencing a newsroom's selection of a particular event as news to be disseminated. An event that satisfies one or more of the following factors would likely be news: frequency, amplitude, unambiguity, meaningfulness, consonance, unexpected, continuance,

combination, related to elite nations, related to elite people, pertaining to persons, and related to something negative (Galtung & Ruge 1965).

News values are what constitutes journalism as a profession that is expected to create and disseminate information about contemporary events that are relevant for and interesting to the public (Michael 2003). To explain their understanding of news values, Caple and Bednarek (2016) referred to the concept of newsworthiness:

> To briefly clarify our own understanding of news values here, we take the
> concept of newsworthiness to mean the worth of a happening or issue to be
> reported as news, as established via a set of news values (such as Negativity,
> Proximity). (p. 2)

Despite the primary news values that have endured for more than a century through socialisation, training, and education (Harrison 2006), their application depends on journalistic practices (Parks 2019). They are also subject to the evolution of the newsroom dynamics and external influences that may result in more inclusion in news values (Caple & Bednarek 2016). External influences include technological advances, advertisers, and competition between news outlets and audiences. Hence, four decades after Galtung and Ruge's (1965) work, Harcup and O'Neill (2001) introduced their contemporary list of news values derived from their study of samples from UK newspapers, other literature, and their experience as journalists (Table 3.3).

Table 3.3
List of Contemporary News Values

No	Factors	Explanation
1	Elite	Story involving influential people, organisations, or institutions
2	Celebrity	Story pertaining to famous people
3	Entertainment	Story aimed to entertain audiences (e.g., humour, sex, drama)
4	Surprise	Story with an element of surprise
5	Bad news	Story with the negative aspect of an event
6	Good news	Story that is encouraging or success story
7	Magnitude	Story that has a significant impact on many people
8	Relevance	Story about a particular topic that is relevant to the audience
9	Follow-ups	Story that follows up one that already in the news
10	Agenda	Story that is suitable for news organisation agenda

Note. List of news values by Harcup and O'Neill (2001).

In their 2016 article, Caple and Bednarek (2016) worked on their list of news values. While many of these are similar to those in Table 3.3, they added "the aesthetically pleasing aspects of an event or issue", images and photographs being examples of "aesthetic appeal" (p. 5). In other words, an event may be considered a news story if an accompanying photograph is appealing and attracts the audience attention. This aesthetic appeal is brought by the photographers using skills and technology to capture a moment with a particular composition[16].

Harcup and O'Neill (2017) subsequently added exclusivity, audio-visual materials, and shareability to their original list of news values. Exclusive interviews become news because they are only covered or investigated by a news outlet. In the wake of technological advances, audio-visual materials include the potential of an event to be presented in an infographic. Shareability is the possibility of a story being recirculated by audiences on social media and messaging applications.

Public Relations

In their seminal book, *Managing Public Relations,* Grunig and Hunt (1984) define public relations as an act of managing the flow and content of information from an organisation to its public. This includes a person who drafts a brochure for a particular club, a professional who is hired for writing press releases by a company, association, or state institution, and an expert who provides advice for corporations or state officials on dealing with news media and the public in regard to collecting and disseminating information and who arranges meeting with journalists.

Public relations is heavily shaped by journalism because it monitors journalistic products and responds to them; hence, it is often called the child of journalism (White & Hobsbawm 2007). However, unlike journalism, which endeavours to be fair, balanced, and bipartisan (Macnamara 2019), public relations emphasises the positive aspect of an organisation or product to gain public or stakeholder approval (Yi 2017). A public

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[16] Caple and Bednarek's "aesthetic appeal" (particularly on image) throws me back to the years when I worked for *Tempo* magazine in Indonesia. In an editorial meeting, there was a discussion about adding a new page titled "Seribu Kata" (a thousand words, derived from "A picture is worth a thousand words"). Instead of the significance of an event, the quality of the photos (composition, details, and so on) was taken into consideration by the editors. The new page was located in the earlier pages of the magazine.

relations attempt is considered successful when it is launched using the least resources. An example would be a product that is in high demand because of word of mouth marketing.

The existence of public relations functions (division or department) within and across types of organisations (corporation, state agency, non-profit organisation) and public figures shows the vital role of public relations, especially when technology allows every party to establish their channel for circulating information in the way they intend. Although their roles are similar, there are different terms or titles for public relations, including corporate relations, corporate communication (in a company), and public information (in government) (Bates 2003). The Indonesian government, facing information challenges such as hoaxes and disinformation, has strengthened its public relations role by recruiting more GPR (government public relations) officers and introducing the Single Narrative Program as a guide for the GPR in all state ministries and institutions[17] (Sugiyanto et al. 2016).

Even though there are key differences between journalism and public relations, these two professions require some similar skills, such as writing to engage people. It is habitual in Indonesia for corporations or state agencies to invite a journalist to train their public relations officers on, for example, how to present a story. Therefore, many journalists have moved to public relations and easily adapted to their new roles by taking advantage of their journalistic skills (Sherwood & O'Donnell 2018). From a Bourdieuian perspective, as these agents moved from the journalistic field to the public relations field they brought their capital with them, thus changing public relations in their new institutions.

3.4 The Relationship Between the Theory and Concepts, and How It Is Used in This Study

This study investigates the adoption of data journalism in five media outlets in Indonesia and how data journalism – a practice encouraged by technological advances and powered by diverse skills – has changed both the journalistic field in general and

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[17] "Single Narrative is the formulation of key messages about issues in which became common concern, is intended as a reference in equalize the understanding of stakeholders to communicate to the public" (Sugiyanto et al. 2016, p. 53).

other fields outside journalism. Bourdieu's field theory (Benson & Neveu 2005a) and its concepts (field, habitus, and capital) have allowed me to focus on the interactions between agents with different habitus and capital, and thus to conceptualise findings from my research interviews. By investigating these interactions, I argue that this thesis could provide a thorough answer to my research questions: How do Indonesian news media outlets adopt data journalism? What changes are caused by the deployment of data journalism in newsrooms and journalists' professional practice? And how do Indonesian government institutions learn and deploy data journalism skills to disseminate their views?

The proposition of this study is that data journalism is one of the news media responses to digitalisation that disrupts the role of media as a business entity and gatekeeper. Figure 3.3 is an outline of my conceptual framework. In searching for and initiating new business models, news organisations try to improve their product by, among other things, adopting data journalism to emphasise reliability and visual appeal. Data journalism is also regarded as a response to the spread of hoaxes, misinformation and disinformation. Although the amount of disinformation is extensive and almost impossible to eradicate, data journalism encourages journalists to adhere to the discipline of verification and thus presents verified information for the people who seek it.

The adoption of data journalism is characterised by not only the influence of agents or conditions outside the journalistic field but also the available resources in the newsroom. The sociological approach offered by Anderson (2013) has provided scope for me to investigate this topic. Applying political and institutional lenses, I explored how government policy has influenced the adoption of data journalism through data openness and how news outlets might be reliant on training offered by non-journalistic institutions (including government, corporation, and non-profit organisations).

Through an economic lens, I focused on how the resources owned by the media organisations are shaping the adoption of data journalism and how newsrooms are addressing the associated problems arising in their daily practices. I applied the organisational dynamic to highlight the interactions within newsrooms involving agents from different backgrounds (educationally and professionally). Finally, I investigated

how dynamic changes in the newsroom and external influences have influenced cultural values in journalistic practices, including the news, news values, cultural history, and technology.

As Bourdieu noted, changes in one field may affect other fields (Benson & Neveu 2005a). In this study, I discuss the adoption of data journalism skills by two Indonesian government agencies, the Ministry of Communication and Informatics and the Ministry of Finance. This discussion includes how these agencies were influenced by the journalistic field, for example, when their training instructors are journalists.

Figure 3.3
The Conceptual Framework of This Study
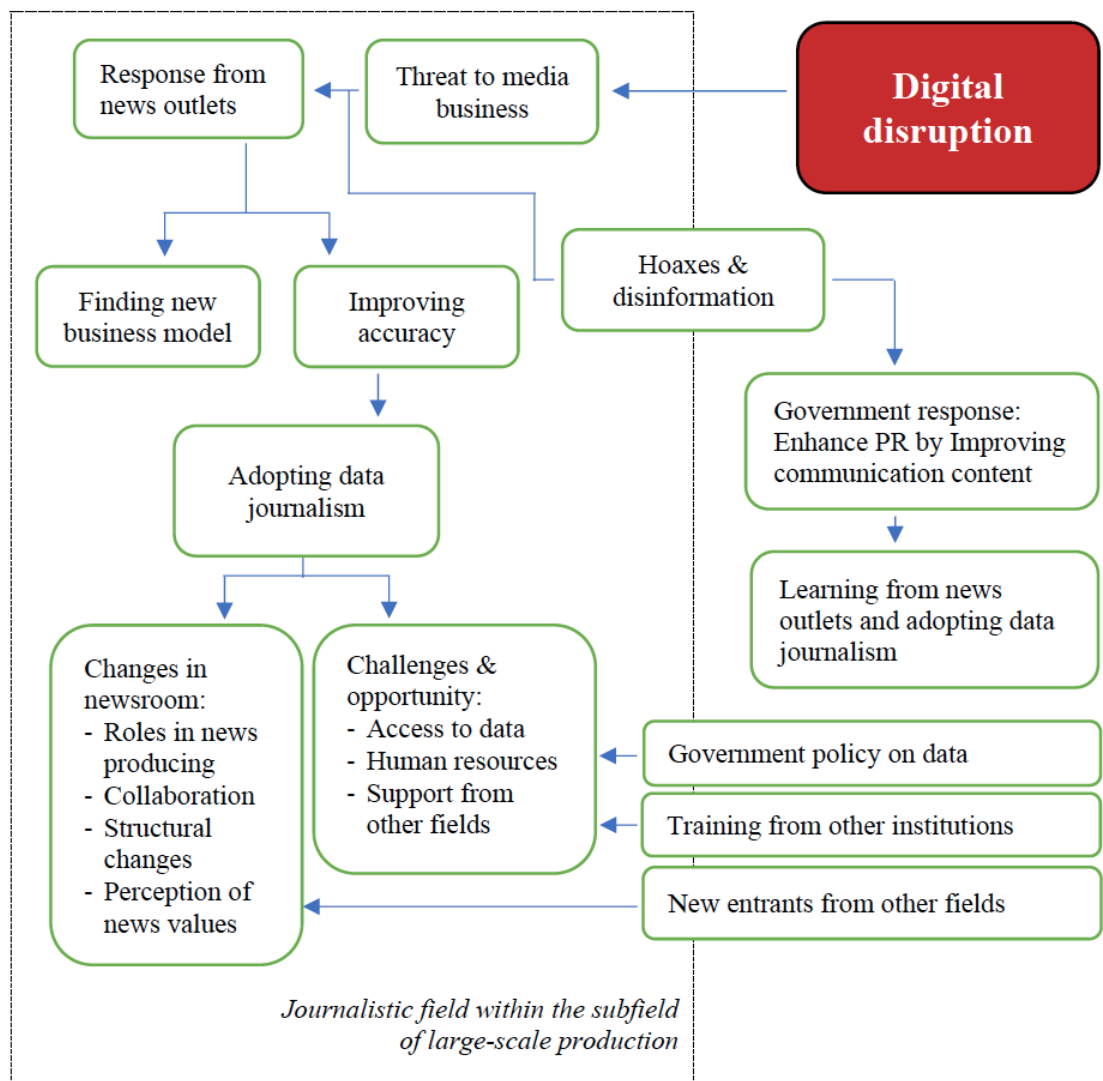
3.5 Conclusion

This chapter has outlined the theory and concepts I applied in this study of the adoption of data journalism in Indonesia. While journalism as a whole is located in the field of cultural production, a part of the journalistic field is located in the field of restricted production (the subfield of small-scale production in Figure 3.1) because journalism can legitimate economic and political power (Benson 1999). The other part falls within the subfield of large-scale production because journalism has an influential mediating role and because it is supported by a business model that has its own logic and rules.

Furthermore, I have presented several concepts based on field theory and its concepts. The concepts are digital disruption, disinformation, discipline verification, data journalism, news values, and public relations. Digital disruption is considered an external force that changes many fields, including the journalistic field. News organisations are responding to the digital disruption that poses a threat to the media business and allows the spread of disinformation by improving the quality of journalism and involving agents from fields outside journalism. This will reconfigure newsrooms in terms of how they perceive the news and capital (in Bourdieu's term) they value.

The theory and concepts discussed in this chapter will be used in Chapter 4, where I explain my choice of research approach and methods to answer the research questions of this study. These methods include data generation, data analysis, and strategies to meet data reliability. I will also present the challenges and limitations I faced in this research.

Chapter 4

Research Design and Methodology

4.1 Capturing the Local Context

In Chapter 3, I discussed field theory and its concepts, and how these concepts relate to this research topic. I also offered a conceptual framework for understanding the adoption of data journalism in Indonesia. I applied field theory in this study because it can highlight the dynamics within the field of media and its subfields, including changes in the newsroom, influences on the broader media field, and the flow of influence between media and other fields beyond the media (Benson 1999). In this chapter, I will explain my research approach, driven by the theoretical framework described in Chapter 3. I argue that the methods selected align with the theory and allow me to answer the research questions of this study. As mentioned in Chapter 1, research questions of this thesis are What factors drive the adoption of data journalism in Indonesia? How do Indonesian news media outlets adopt data journalism? What changes are caused by the deployment of data journalism in newsrooms and journalists' professional practice? How do Indonesian government institutions learn and deploy data journalism skills to disseminate their views?

When this research began, previous studies on the adoption of data journalism mainly had been conducted in newsrooms of developed countries in North America (Fink & Anderson 2015; Tabary, Provost & Trottier 2016) and Europe (Appelgren & Nygren 2014; Borges-Rey 2016; De Maeyer et al. 2015; Karlsen & Stavelin 2014; Knight 2015). According to Freedom House (2020) and United Nations (2019), all of these countries are democracies that provide the basic requirements of data journalism: data availability and access to technology. The trend in democratic countries is that providing access to government data has become one of the indicators of government accountability (Mutsvairo 2019b).

Outside these types of nations, the scarcity of public data has not discouraged the spread of data journalism. Research has expanded knowledge of the different challenges faced by journalists and data journalists in countries not yet studied in depth or at all (Fink & Anderson 2015; Mutsvairo 2019b). For instance, instead of relying on government data, journalists in Arabs countries that are tightly controlled by government and society have harnessed data from international agencies for their investigative work (Lewis & Nashmi 2019). In Africa, data journalism is being conducted by non-profit civic organisations, which has led to a compromise between civic values and journalistic ideals (Cheruiyot, Baack & Ferrer-Conill 2019). In Latin America, data journalists enjoy collaboration with civil society to retrieve data (Amado & Tarullo 2019).

Indonesia has been categorised by Freedom House (2020) as a partly free country. Although it has had more freedom since the end of Suharto's military era, the country still faces problems, including corruption and discrimination against minority groups (Freedom House 2020). Journalists enjoy independence, but barriers and threats still exist when reporting on, for example, military abuses or human rights in Papua (Reporters Without Borders 2019). As well, the adoption of data journalism in Indonesia happened during the era of disinformation, especially the 2014 and 2019 presidential elections and the 2017 Jakarta gubernatorial election. These political events significantly impacted media practice and journalism.

Therefore, to explore the local context while maintaining objectivity, this research – as stated in an earlier chapter – applies field theory (Bourdieu 2005) and sociological lenses (Anderson 2013). It would consider aspects contributing to the adoption of data journalism, within or outside the journalistic field, to answer the aforementioned research question.

4.2 Case Study Research

Data journalism is a new practice in the field of journalism (Hammond 2017; Westlund & Lewis 2017). This phenomenon emerged as a result of the intersection of traditional journalism with technology (Lewis & Usher 2013) and the democratic trend towards openness, particularly in public institutions (Coddington 2015; Mutsvairo 2019b). One

of the qualitative approaches appropriate for researching contemporary phenomena is the case study, "especially when the boundaries between phenomenon and context may not be clearly evident" (Yin 2003, p. 13). As a commonly used form of qualitative inquiry, the case study attempts to understand a particular case within its pertinent circumstances (Stake 1995). In conducting a case study, a researcher is expected to develop details of the complexity and specificity of the case that can be generalised (Yin 2017). As well, the researcher has no control over events, and can highlight contexts that are relevant to the case (Yin 2017). Hence, the researcher relies on multiple sources to obtain evidence and exercise triangulation to analyse and interpret data (Silverman 2013; Wilson 2014; Yin 2017).

This thesis presents three case studies of the adoption of data journalism in Indonesia:
1. Data journalism in online outlets established by legacy media,
2. Data journalism in new online news media organisations, and
3. The adoption of data journalism skills in government agencies.

In this research, I distinguish between the deployment of data journalism in legacy and non-legacy media because, unlike in the United States and the United Kingdom, for example, where *The New York Times* and *The Guardian* have become role models in the application of the new genre, online outlets owned by the legacy media companies in Indonesia are assumed to face more challenges in adopting data journalism. Moreover, the institutional and structural conditions of the legacy media and the new online media are very different. As for government agencies, I am aware that they are not journalistic institutions. However, several have adopted data journalism skills to disseminate stories based on their points of view and interests. The deployment of these skills in government agencies was in response to disinformation that was undermining government policies.

4.3 Sampling

The appropriateness of selecting samples is crucial when carrying out qualitative research because it significantly impacts the findings and interpretations (Coyne 1997). This research applied purposive sampling, which is characterised by a small group of

samples based on the study's objectives (Patton 1990). Homogeneity is therefore unavoidable because samples or informants are presumed to have had similar experiences and broad knowledge of the discussed topic (McIntosh & Morse 2015). I also selected and limited the sampling based on practicality (Schatzman & Strauss in Coyne 1997) after considering the time available for this PhD study and the accessibility of the sources. This research grouped the samples into three groups of case studies: legacy media, newer online news media, and government agencies. It is important to note that the practice of using "data journalism skills" in government agencies is not considered journalism. These agencies adopted the skills to strengthen their public relations strategies. As I mentioned in the previous chapter, unlike journalism, which endeavours to be fair, balanced, and bipartisan (Macnamara 2019), public relations emphasises the positive aspects of an organisation or product to gain public or stakeholder approval (Yi 2017).

Legacy Media

To adapt to technological change or to outsmart government restrictions, some printed media have launched websites. On August 17th, 1994, *Republika* daily announced the launch of its website portal, Republika.co.id, which was the first online media outlet in the country (Margianto & Syaefullah 2012). In 1996, two years after the *Tempo* magazine was banned, Tempo reached their audience on Tempointeraktif.com (now Tempo.co). The following year, *Kompas* daily went online on Kompas.com. Among the many legacy media owned online outlets, I selected the news outlets Kompas.com and Tempo.co as units of analysis within this case study. In addition to their commitment to data journalism, both are hailed as respectable media organisations because of their quality journalism.

In 2016, Tempo was involved in an investigation led by the International Consortium of Investigative Journalism to reveal government officials who were hiding their wealth overseas in the form of shell companies to avoid tax. Tempo worked on leaked big data known as the Panama Papers and found that some officials owned several companies in tax haven countries (Tempo 2016). Tempo was also active in promoting the new online genre. For example, Tempo's Editor-in-Chief, Wahyu Dhyatmika, was often invited to

be an instructor in data journalism training, and he was a frequent speaker in the Global Investigative Journalism Conference. This biennial event discusses investigative and data journalism.

Kompas is Indonesia's most prominent media group (Lim 2012), having the most significant newspaper circulation (500,000 in 2014). Kompas Group has a property business and a university. In 2018, marking their 50th anniversary, Kompas inaugurated their 50-storey skyscraper, the tallest media headquarter in the country. To maintain its audience, Kompas has struggled to find new business models for online news outlets, and it continues to provide reliable information through data-driven journalism channels on its website. One of these channels, Visual Interactive Kompas, publishes long-form journalism works accompanied by graphics, images, and videos.

Newer Online News Media: The Newcomers

In this research *newer online news media* are defined as online outlets that were not established by legacy media or supported by other media platforms (newspaper, television, and radio). In line with internet penetration in Indonesia, online media has grown dramatically. In the 1990s, most online media were owned by legacy media organisations; however, in 2019, the Indonesian Press Council reported 47,000 online news media outlets (AMSI 2019). Audiences for online media surpassed those for print media, and online media became the third source of information behind television and outdoor billboards (Reily 2017).

From among the many newer online news media outlets, this research has focused on three: Katadata.co.id, Tirto.id, and Lokadata.id. Founded in 2012, Katadata.co.id was the first media outlet in the country to specialise in data-driven journalism practices (Ser 2018). It was established to focus on the economy and business and provide easy-to-understand and impartial news based on data rather than on comments made by news sources (Katadata 2018). Tirto was established in 2016 and proclaimed as a newsroom outlet that offers precision journalism. Rather than speed, staff at Tirto.id focus on in-depth news and accuracy (Tirto 2016). Lokadata.id is a media company focusing primarily on data journalism and research (Lokadata 2021). Katadata, Tirto, and

Lokadata regularly publish data journalism stories in the form of infographics, in-depth reporting, and videos.

Government Agencies: Beyond the Journalistic Field

After his inauguration in 2014, President Joko Widodo became the main target of hoaxes. He was consistently accused of being anti-Islam, pro-China, and sympathetic to communism (Baiduri 2017). Hoaxes also undermined government projects, especially his infrastructure projects, where he pledged to disburse IDR4,000 trillion (equal to A$400 billion) for the next five years. I selected two government agencies to be the case studies in this research, the Ministry of Communication and Information and the Ministry of Finance. These ministries improved their websites to respond against hoaxes by adopting data journalism skills. I also considered including the Ministry of Public Works; however, a public relations official said the infographics on their website were created by private agencies.

4.4 Data Generation

In this section, I present my source of data and approaches to collecting the data. These approaches comply with ethical requirements approved by UTS Human Research Ethics Committee. I also explain my data management strategy to ensure the data is easy to access and safe.

Sources

Case study researchers are expected to multiple data sources to answer "how" or "why" questions about the contextual condition (Yazan 2015; Yin 2017). Each data source strengthens the others to provide the validity and a robust discussion. The data sources for this research were the internet, interviews, and institutional documents.

The Internet

Internet data is categorised as occurring naturally and without researchers' intervention (Silverman 2013). There are three ways the internet can help a researcher: as a medium

of communication, a venue, and a way of being. The latter fits this thesis as "ethnographies of the contemporary social world in a digital age" (Markham 2016, p. 9). As mentioned earlier, this study examined the characteristics of data-driven journalism products by conducting a content analysis of a sample of data journalism. Hence, generating data from the internet was crucial.

I applied the constructed week sampling method (Bell 1991) to collect data journalism artefacts from the outlets. In the constructed week method, a researcher retrieves stratified random data from a week of which the days are a collection of several different weeks randomly selected. Specifically, the researcher might identify every Monday in the selected timeframe and randomly picked one, then likewise for Tuesdays, and so on. I applied this method to minimise bias and generate the most effective sample (Luke, Caburnay & Cohen 2011).

In this research, the constructed week consisted of five days from Monday to Friday because most newsrooms in Indonesia do not deploy their full news teams on weekends. While a single constructed week is considered sufficient to analyse six-months of a print newspaper (Riffe, Aust & Lacy 1993), Hester and Dougall (2007) recommended a minimum of a two-week constructed week for online news: "Constructed week sampling is still the most effective type of sample, but the sample size needs to be larger" (Hester & Dougall 2007, p. 820). Hence, I used two constructed weeks (N = 10 days), beginning in July 2019.

The units of analysis were gathered from the news websites during the second six months of 2019. Selecting this period allowed more flexibility in identifying and choosing the days and generating a sample of journalism "as usual", rather than use a period dominated by unusual events. The first half of 2019 had been a hectic period for journalists in Indonesia, with the Presidential and Legislative elections taking place on April 17th (preceded by months of political campaigning and followed by controversies and riots after the Election Committee announced the outcome). In addition, from early May to June, Ramadan and the Eid Festival took up a higher proportion of news in this Muslim-majority country.

Interviews

Interviewing is a widely used method of data collection (Silverman 2013). It is powerful tool for understanding social phenomena from the perspective of the actors involved in it (Seidman 2019). Semi-structured interviews, in particular, allow an interviewer to explore issues that arise beyond the researcher's expectation but are still considered relevant and essential to the topic discussed (Gray 2017). I deployed semi-structured interviews because they provided flexibility for me and for my research participants. "Participants are free to respond to these open-ended questions as they wish, and the researcher may probe these responses" (McIntosh & Morse 2015, p. 1).

Despite its advantages, when time is limited, semi-structured interviews may confuse new researchers when prioritising prepared questions or exploring interviewees' responses. As a result, the researcher is at the risk of missing some crucial data (Doody & Noonan 2013). To anticipate this risk, I requested permission from the participants to send follow-up questions when needed. I conducted semi-structured interviews with 25 participants who have professional experience of and/or expertise in journalism, data journalism, public relations, or related fields in Indonesia. Twenty-one participants were interviewed face-to-face during two months of fieldwork in Indonesia during March and April 2019; one participant was interviewed in November 2020; and two others were interviewed in June 2021.

Institutional Documents

Silverman (2015) groups all written texts as documents. In this research the types of text include news, blogs, email, and documents from any institution. *Institutional documents* include the texts officially produced by institutions, either government or media outlets, to regulate themselves or their sectors. These are government regulations, monthly or annual reports, codes of ethics and conduct, and internal publications. Some documents are available on the institutions' websites, while others required my intervention to obtain them. For the latter, I asked the participants for access after their interviews.

Some of the documents are annual reports published by the Nielsen Company Indonesia, a market research company that started its operation in Indonesia in 1976 (Nielsen 2011). These reports detail advertising expenditures on all media platforms in Indonesia. Violence reports from the Alliance of Independent Journalist Indonesia (AJI) were retrieved from AJI's website. As a body concerned about the freedom of the media, AJI collects information about violence on journalists (AJI 2020b). I also requested complaints lodged by the public about media programs from the Indonesian Press Council, which oversees journalistic code of ethics implementation. The Council's website also provides information about certified news outlets and journalists. Annual reports from the Ministry of Communicational and Informatics (MCI) were also helpful because the ministry acts as a regulator in the media industry. The MCI also frequently released internal reports on hoaxes, including daily updated on hoaxes related to the spread of COVID-19.

Ethics and Arm's Length Recruitment

This research relies on the information provided by informants from and related to the media sector in Indonesia. To involve human participants, I was required to submit an ethics application to the UTS Human Research Ethics Committee (HREC). The application requested details of each research stage, including research design, methodology, methods, and their execution in the field. I also needed to show that this research would significantly contribute to the field of knowledge and be feasible. After responding to the committee's requests to clarify some details, for example, about my safety during data collection, the approval was granted on 3 December 2018 (approval number UTS HREC REF NO. ETH18-2993) (Appendix 1).

A researcher is encouraged to contact their participants without relying on a third person to minimise the possibility of misunderstandings arising if the third party was to have a different view when explaining the project (Seidman 2019). However, ethical issues may arise if the researcher has a pre-existing relationship with the participants. Because of my professional background (journalist, lecturer, and researcher), I had established a relationship with some participants long before this research began. To meet research ethics requirements, I deployed an arm's length email recruitment strategy, assisted by

my supervisor Dr Catriona Bonfiglioli, of recruiting informants direct from her university email address. This strategy also helped me gain responses and secure appointments with the participants. Moreover, the invitation letters, accompanied by the Participant Information Sheet and Consent Form, helped develop informants' trust in me.

The ethics application also required me to pay attention to any potential risks affecting the participants' well-being, interest, or welfare. For example, some of the participants working in the news media might have been reluctant to answer questions that would reveal how their organisations operate, and others working in government agencies might have feared their answers would be disagreeable to their superiors, possibly leading to a reassignment of roles. However, the effect of unsuitable statements would likely be no more than an inconvenience, and because data journalism is an exciting and important topic for the government with its policy goals of tackling hoaxes, participants would be expected to be interested in discussing this topic. Hence, repercussions affecting career pathways would be unlikely. Despite these low-risk potentialities, I reviewed and ensured that any comment with potential risks to participants would be kept confidential and not be used in this research unless the participants were fully aware of the risk and consented to its publication.

Selection of Participants: Diversity

As I mentioned earlier, I recruited 25 participants in this research. They included professionals working for the five leading online news media outlets deploying data journalism: Kompas, Tempo, Katadata, Tirto, and Lokadata. Participants from each outlet were policymakers (journalists with higher positions in their office, e.g., CEO and editor-in-chief) and journalists who had daily journalistic tasks as editors and reporters.

The participants from the government departments represented agencies that have responsibilities for the communication and economic sectors and have adopted data journalism skills to improve their websites. Other participants represented the press regulator (Indonesia Press Council), journalist and media associations, non-governmental organisations, and academics. The Alliance of Independent Journalists

(AJI) was selected because of its initiatives in promoting data journalism. From 2018 to 2019, AJI convened seven data-driven journalism training sessions and delegated its members to be speakers and instructors at the Asian and Global Investigative Journalistic Conferences. AMSI (The Indonesian Cyber Media Association) was selected because of its concern about online media professionalism (AMSI 2017). The various perspectives arising from this diversity of sources were expected to enrich the research data.

Invitation letters for the participants were sent by email in early January 2019. When following up, I only used email or other means of communication initiated by the invitees, so they did not feel pressured. However, I needed to ensure that a sufficient number of participants representing all the organisations would be involved in the research before the Presidential Election on April 17th, 2019. This was because some public officials might have been uncomfortable about speaking if the incumbent candidate had lost the election. Even if the incumbent had won, the official would be limited to speaking on specific issues because the time between the election and the formation of the new cabinet would be a period of uncertainty for their career. Hence, this research was a race against time. I managed to interview all but four of the participants before the election. Table 4.1. provides the details of the participants who were interviewed. Highlight colours indicate the types of organisation the participants worked for: News organisation (gold), government agencies (yellow), media regulator (green), academic institution (light grey), journalist and media association (light blue), and non-governmental organisation (orange).

Table 4.1

List of Interviewees

Interviewee		Name	Organisation	Role/Position
No	Date			
1	11/03/19	Toriq Hadad	Tempo	Chief Executive Officer Tempo Inti Media
2	11/03/19	Wahyu Dhyatmika	Tempo	Chief Editor
3	12/03/19	Iin Yumiyati	Detik	Deputy Chief Editor
4	13/03/19	Wan Ulfa Nur Zuhra	Tirto	Editor
5	13/03/19	Wisnu Nugroho	Kompas	Chief Editor
6	14/03/19	Moerat Sitompul	Tempo	Editor
7	18/03/19	Dhimas Nugraha	Ministry of Communications and Information Technology	Head of Section
8	19/03/19	Nufransa Wirasakti	Ministry of Finance	Head of Communication Bureau
		Rahmat Widiana		Head of Publication Management/ Editor in Chief of Media Keuangan (Finance Media)
9	20/03/19	Nazmi Tamara	Katadata	Reporter/Writer
10	22/03/19	Yoseph Adi Prasetya	Indonesia Press Council	Chairman
11	22/03/19	Metta Dharmasaputra	Katadata	Chief Executive Officer
12	25/03/19	Ignatius Haryanto	Universitas Multimedia Nusantara	Lecturer
13	26/03/19	Iman D. Nugroho	Alliance of Independent Journalists	Head of Education Department
14	27/03/19	Wenseslaus Manggut	The Indonesian Cyber Media Association	Chairman
15	27/03/19	Abdul Manan	Alliance of Independent Journalists	Chairman
16	29/03/19	Amir Sodikin	Kompas	Editor
17	01/04/19	Septiaji Eko Nugroho	Indonesian Anti-Slander Society	Chairman

18	01/04/19	Sapto Anggoro	Tirto	Chief Executive Officer
19	04/04/19	Rudiantara	Ministry of Communications and Information Technology	Minister
20	04/04/19	Enda Nasution	Jabar Saber Hoaks	Coordinator
21	16/04/19	Niken Widiastuti	Ministry of Communications and Information Technology	Director-General for Public Information and Communications
22	18/04/19	Krisno Yuwono	Ministry of Public Works and Housing	Head of Public Communication
23	20/10/20	Lambok Hutabarat	Katadata	Creative Director
24	19/05/21	Dwi Irawanto	Lokadata	Chief Editor
25	12/07/21	Informant 25	Lokadata	Editor/data journalist

Note. Informant number 25 chose to keep their identity confidential. During the interview, Mr Wira Sakti was accompanied by two of his two subordinate officers. One of them was Mr Rahmat Widiana.

At the Ministry of Public Works, I interviewed Mr Yuwono, the Head of Public Communication, about infographics on its website; it turned out that the infographics were made by other parties. I also interviewed Mrs Yumiyati, Deputy Chief Editor at Detik.com and found that Detik.con did not use data journalism. Even so, the interviews with Mr Yuwono and Mrs Yumiyati were valuable because they also discussed other topics relevant to this study. Further, the interviews with Minister Rudiantara and Mrs Widiastuti were redundant because I expected only one of them would accept my invitation. Initially, I invited Mr Rudiantara, but after more than two months without a response, I turned to Ms Widiastuti, and she accepted. When I was in Jakarta, for my fieldwork, Mr Rudiantara called me to say he was ready for an interview. Along the way, in the late 2019, a new online media outlet, Lokadata, emerged and declared its commitment to data journalism. I decided to include Lokadata in my research, and I interviewed their editor-in-chief and data journalist. These two interviews were conducted in May and July 2021 on the Zoom platform because of Australian border closures during the COVID-19 pandemic. A Zoom interview also took place in October 2020 when I talked to Mr Lambok Hutabarat, the creative director of Katadata.co.id.

Interview Questions

Questions for the semi-structured interviews were formulated based on the interviewees' roles in their organisations. There were 10 to 12 questions for each participant. My opening questions for all informants were about how long they had been occupying their positions and what were their educational and professional backgrounds. Despite preparing the list, I was not bound to the order of the questions because responses from the participants sometimes needed to be followed up (Bryman 2016). Further, I asked more strategic questions of participants with senior positions (e.g., Why did your media outlet adopt data journalism? How do you generate income from data journalism? What is the most significant investment to do data journalism?). Participants who held junior positions were asked about daily practices (e.g., How do you get data for news stories? How many stories do you produce in a week? What are the main obstacles to performing data journalism?). Some questions were asked of all participants from the media outlets regardless of their position (e.g., How do you define data journalism? Who do you categorise as data journalist?). Examples of the questions for participants representing non-governmental organisations, academics, press regulators are: How could journalists take part in combatting hoaxes and disinformation? How do you see the competition between media in delivering news to the public? What is the main problem faced by the media industry recently? Table 4.2 shows how the interview questions were designed to answer the research questions of this thesis.

Table 4.2
List of Questions to Answer This Research Questions

Research question	Sample interview questions
What factors drive the adoption of data journalism in Indonesia?	• News media often amplify hoaxes and fake news. What is your view on it? • What measures should be taken by news media to restore public trust? • What can journalists do to minimise hoaxes and disinformation? • Why does your organisation actively promote data journalism? • Why does your organisation adopt data journalism? • How do you define data journalism and data journalist?
How do Indonesian news media outlets adopt data journalism?	• How do you train/recruit your data journalist? • How do you choose a story to publish? • Where do you get data for your stories? • What are challenges in adopting data journalism?
What changes are caused by the deployment of data journalism in newsrooms and journalists' professional practice?	• What adjustments have your organisation taken to be able to do data journalism? • What is the role of data analysts and designers in data journalism production? • Does your newsroom take advantages from training provided by other institutions? • Does data journalism generate income?
How do Indonesian government institutions learn and deploy data journalism skills to disseminate their views?	• How did you organisation start "data journalism"? • What are the goals of adopting "data journalism"? • How do you train/recruit your staff? • How do you choose a story to publish? • Where do you get data for your stories? • Is it easy to share data between or within government institutions?

Conducting the Interviews: Rules to Apply

Of the 25 interviews, 20 took place in Jakarta, either in the participants' offices or in other venues they chose. One interview was conducted in Banten, a province next to Jakarta, because the interviewee's office was located there. Another interview was done on Google Hangouts because the informant, even though his organisation was based in Jakarta, worked remotely from his hometown in Yogyakarta, about 500 kilometres from Jakarta. In addition to concerns about distance and budget, interviewing through technology is acceptable if warranted by the informant's tight schedule or other constraints (Seidman 2019).

The lengths of the interviews ranged from 30 to 70 minutes. Participants holding the senior positions tended to speak more than 40 minutes and cover a wide range of topics. However, this does not mean that the interviews with the editors and writers were brief. Some of them spoke for more than one hour in great detail about their roles and the journalistic products they were responsible for. Some interviewees were accompanied by their subordinates, who provided detailed information to answer the questions thoroughly. After their interview, each informant was provided with a consent letter to sign. None of the participants asked to have their identity kept anonymous. They also welcomed any follow-up questions and said they would provide more information if I required it.

When preparing and conducting the interview, I had to be aware that I was carrying out an academic duty, not a journalistic one. As a former journalist, I am familiar with doing interviews. However, there are differences between interviewing for research and interviewing as a journalist. From an ethical point of view, for example, a journalist must maintain control to keep the conversation aligned with the news agenda (Martin 2014). In contrast, a researcher should allow the informant to guide the interview because the informant has the knowledge and experience that the researcher wants to collect (Adams 2010). A tendency to control the interview might result in a negative response or even in the interview ending too early.

I consistently deployed two recording devices in each interview to anticipate technical issues. The interviews took place in quiet rooms or public spaces with a tolerable noise level to ensure the recordings would be easy to transcribe.

Transcribing was labour intensive and time-consuming because the total length of the interview recordings was over 1,000 minutes. It took me up to five hours to transcribe a one-hour interview recording. By transcribing their own interviews, researchers are at the same time sorting and cleaning the data and facilitating the analytical process (Seidman 2019). Transcribing also makes researchers more familiar with the data and is thus the first step in data analysis (Braun & Clarke 2006). The transcriptions were kept in the original language of the interviews, Bahasa Indonesia, to maintain the particular

features of the language, such as the word choice and emphasis (Riessman 2000), and to help me recall when an interviewee said a specific comment.

Data Management

Researchers are obliged to keep all information collected from interviews and only use it for purposes of their study or for other purposes that are agreed on by interviewees (Thomas 2015). In the age of information, ensuring data security is crucial, especially when doing research involving humans. The physical data used in this research has been securely stored, and I have also used the UTS cloud to store data electronically on the UTS server. I have not published any data on social media, including photos taken during the interviews.

4.5 Data Analysis

Coding

Coding is the next step after data collection. The coder arranges and organises data systematically to help researchers analyse, theorise, and write up findings (Saldaña 2015). I conducted coding for my primary data, data journalism artefacts, and interviews. I created a coding framework for the content analysis of infographics illuminated by the research questions and the theoretical framework. As field theory highlights the role and power of agents in a field (Benson & Neveu 2005a), I anticipated that coding focused on the people involved in producing an infographic would provide insight into how their different skills shaped the product. This coding framework also drew on previous studies on content analysis of data journalism products (Loosen, Reimer & De Silva-Schmidt 2017; Stalph 2018; Young, Hermida & Fulda 2018; Zhang & Feng 2019). Table 4.3 shows the dimensions and variables that guided the coding.

Table 4.3

Coding Framework for Analysing Data-Driven Journalism Work

Dimension	Variable	
	Variable	**Sub-variable**
Topic and tone	Topic	Politics and law, economy, social, energy, technology, health, environment, sport and entertainment, other
	Tone	Critical, neutral, supportive
Creator	Writer	-
	Data analyst	-
	Illustrator	-
	Designer	-
Data	Source	Government, private corporation, non-profit organisation, own source, other media, foreign, other
	Number of sources	One, two, more than two named sources
	Type of data	Biodata, geodata, financial, industrial, demography, survey/poll/election, event/field reporting, economic indicator
Visualisation and accompanying text	Visualisation	Pointer, quote, timeline, chart, pictogram, photo, video, illustration, map, animated
	Format	Portrait, landscape
	Text	Up to 500 words, more than 500 words
Sharing apps	Facebook, Twitter, Instagram, LinkedIn, WhatsApp, Mail, Line, others	-

As this research was intended to show the characteristics of the adoption data journalism in Indonesia, I did thematic analysis by applying an inductive approach to the interview data to generate rich and detailed insights (Braun & Clarke 2006). Thematic analysis is a widely used method in qualitative inquiry that helps a researcher to work with data, including identifying, analysing, and reporting themes (Boyatzis 1998). The theme itself is "a pattern in the information that at minimum describes and organises the possible observations and at maximum interprets aspects of the phenomenon" (p. 161). This technique consists of the following steps: 1) data familiarisation, 2) generating initial codes, 3) finding themes, 4) reviewing themes, 5) defining and naming themes, and 6) producing the report (Braun & Clarke 2006).

To code appropriately, researchers should be familiar with their data (Braun & Clarke 2006). Therefore, the transcription process was essential because it allowed me to listen, write, and read at the same time. The transcribed interviews, in its original language, were uploaded to NVivo, a computer software to perform qualitative data analysis (Mortelmans 2019). However, I limited the use of Nvivo to organising and arranging my data based on the codes or nodes that emerged. This is because of criticism that the use of software for qualitative data can distance a researcher from their data and cast doubt over the legitimacy of their analysis (Mortelmans 2019). Further, coding is not a one time process (Braun & Clarke 2006). I coded and re-coded more than three times to ensure the coded data fitted the nodes. With their child nodes, the emerging themes were then allocated according to Anderson's (2013) six sociological lenses: political, economy, institution, organisation-level dynamic, cultural history, and technology and news. I kept themes that did not fit these lenses to allow this thesis to benefit from the richness of interview data.

Interrater Reliability

Researchers are encouraged to deploy triangulation to achieve reliability and validity when using qualitative research methods; "In this way, it is argued, diverse confirmatory instances in qualitative research lend weight to findings" (Armstrong et al. 1997, p. 597). Four types of triangulation can be used: (a) different sources of data, (b) various theoretical points of view to analyse data, (c) several methodologies to investigate a research problem, (d) the involvement of more than one researcher (Armstrong et al. 1997).

This research applied data triangulation or the use of a variety of data sources and forms. To test the reliability of the data, I performed investigator triangulation (inter-rater reliability). There have been different opinions about the usefulness of the latter method in qualitative research. Some researchers have argued that qualitative research recognises the diversity and multiple characters of reality, so inviting an "outsider" to check data analysis or reach an agreement is considered contradictory; the involvement of different researchers or raters in the data analysis process would thus be more appropriate in quantitative research (Armstrong et al. 1997). However, involving other

researchers can show the transparency of technique (Armstrong et al. 1997) and one's trust and confidence in the outcomes (Belotto 2018). Although the use of one rater would have been acceptable (Belotto 2018; Campbell et al. 2013), I involved my supervisor, Dr Catriona Bonfiglioli, to test my coding framework of data-driven journalism work, and a UTS PhD student, a colleague from Indonesia, to test my coding using interrater reliability.

Instead of doing double coding for all data, which would require a lot of time, a researcher can allocate a sample of data or text (Krippendorff in Campbell et al. 2013). From the 50 infographics, five were double coded, and from the 25 interviews, two were double coded. Before allowing the Dr Catriona and my PhD student to code, I provided them with coding themes and their variables and lists of code signals with their meanings (the coding book), so they could code accordingly. The double coding made me realise the importance of interrater reliability to achieve a robust research output. The first meeting with each rater proved that the coding books were unclear and undetailed, which led to some confusion.

After improving the coding book, I and the raters coded separately (in isolation). The coding results were measured with Cohen's kappa (Conger 2017). The kappa score is considered applicable and robust because there is more than one variable in the coding. Most importantly, using kappa, which is frequently applied for two raters (including the principal researcher), there is a possibility of some agreement level, despite the raters picking different answers (McHugh 2012). "Cohen hypothesised that a certain number of the guesses would be congruent, and that reliability statistics should account for that random agreement" (p. 277). Other research in the field of journalism has also deployed kappa scores to measure interrater reliability (Clayman et al. 2010; Holt & Karlsson 2015; Paulussen & D'heer 2013).

The kappa statistics range from ≤ 0 to 1, where ≤ 0 shows agreement equivalent to chance, 0.01-0.20 as slight agreement, 0.21-0.40 as fair agreement, 0.41-0.60 as moderate agreement, 0.61-0.80 as substantial agreement, 0.80-0.99 as near perfect agreement, and 1 as perfect agreement. The kappa score for double coding of the infographics and interview data reached "substantial agreement". This gave me

confidence that this research had been conducted properly, and I could proceed to the next step, producing my analysis. In the final analysis stage, researchers select particular coding outcomes and relate them to theory, previous studies, and research questions (Braun & Clarke 2006).

4.6 Conclusion: The Challenges and Limits of the Methodology

In this chapter, I have demonstrated my methodology for answering the research questions of this thesis. I explained that the case study method was pertinent to understanding data journalism practices in media outlets in Indonesia. I selected for sampling five online media outlets representing legacy media-owned outlets and newer online news media outlets. I also chose two government agencies deploying data journalism skills as examples of the impact of changes in the journalistic field on other fields. I outlined the sources of data for this research, and how the data were gathered and then managed consistently with ethics requirements. I also explained my strategy for analysing the data so that this research would offer rich insights.

As much as a researcher endeavours to apply methods properly, challenges and limitations remain. For me, and perhaps for many other current researchers, the COVID-19 pandemic was the ultimate disturbance, changing my daily routines and affecting the methods I selected. Restricted access to my usual campus buildings during two lockdowns in Sydney in 2020 and 2021 made me a nomadic student, moving back and forth from one building to another, if not working from home. Working from home was also complicated, with my children often interrupting to ask for help with their online learning. Self-isolation was also hard, as my family members and I contracted COVID-19 on two different occasions. Moreover, the Australian border closure forced me to cancel my second field trip. I had expected to collect more data and do additional interviews. But I managed to conduct interviews on Zoom.

As a novice researcher coming from journalism practice, it took me a while to understand research procedures. A few times during interviews, I forgot that I was no longer a journalist and I led the conversation and interrupted the participants. I was often stuck and lost during this research when looking for applicable theories and

frameworks, let alone when working on my data. I am indebted to the guidance of my supervisor and to the help my colleagues gave me with coding

In Chapter 5, I present the contemporary settings of journalism in Indonesia to situate this study. I focus on the state of journalism after Suharto using (Herman & Chomsky 2006) propaganda model framework. Chapter 6, the first findings chapter, focuses on how digital disruption in journalism has changed the field and the ways journalists do their jobs. This is followed by four findings chapters (7, 8, 9 and 10). Finally, in Chapter 11, I discuss my significant findings and the arguments that underpin my recommendations for Indonesian journalism practices in general and for data journalism in particular. I also suggest further research into these fields.

Chapter 5

Contemporary Media in Indonesia: From State Control to Market Mechanism

In Chapter 5, I explained the methods I selected to answer the research questions of this study. I also mentioned that to understand data journalism in Indonesia I would provide a concise historical overview of journalism in Indonesia and place this study within a larger context. To keep this brief, I have limited this chapter to a discussion of the media landscape from 1998, after the fall of General Suharto's New Order[18]. This period is known as the media liberalisation era, after the introduction of a new press law by the succeeding government (Steele 2012). The law ended the long government control over news media in the country since the adoption of guided democracy by Sukarno in 1959. Data for this part were generated from natural data (news archives), institutional reports, research interviews, and previous scholarship.

To present this topic, I apply the propaganda model framework (Herman & Chomsky 1988). The propaganda model consists of five invisible news filters that influence media organisations in selecting and framing the news, even though they may believe themselves to be independent and objective. These filters are: business size and ownership (media ownership and profit orientation); advertising; sourcing; flak and the enforcers; and anti-communism. Despite being developed in the late 1980s, in the wake of the Cold War and the growing fear of communism, the propaganda model is still relevant to the digital era in Indonesia. Among the reasons to justify the application of propaganda model is the recent development of media ownership concentrated in a handful of wealthy business people (Mullen & Klaehn 2010). In Indonesia, a dozen conglomerates (some of them involving politicians) control the country's major broadcasters (television and radio) and newspapers (Lim 2012).

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[18] During the New Order era, news media organisations were controlled by the government. The government, through the Ministry of Information, played the crucial role in deciding which media would survive and vice versa (Dhakidae 1991).

5.1 Applying the Propaganda Model

The liberalisation of the news media in Indonesia occurred during the spread of the internet, which posed new challenges for the media. On the one hand, media had to compete with each other, but on the other hand, they had to adopt the new technology that would change the media industry landscape. After surviving the authoritarian era, Indonesia's media consolidated themselves within the market system (Tapsell 2017). Under this system, media outlets, like other business entities, are profit-seeking, owned by wealthy business people, reliant on advertisements to run their business, dependent on the government and big corporations as the source of information, vulnerable to threats (from resourceful parties), and heavily influenced by an ideology that dominates the public (Herman 2000). Here I apply the five filters of propaganda model to the contemporary media in Indonesia.

Media Ownership and Profit Orientation

After the collapse of the New Order on 21 May 1998, the number of media outlets skyrocketed from 300 newspapers in May 1998 to about 1500 in the following year. In the same period, the country added 300 new radio stations (from 700) alongside five new television stations (from five) (Hanitzsch & Hidayat 2012). In the following five years, Indonesia entered the "dot-com boom", with many new online news portals emerging, if not surviving (Margianto & Syaefullah 2012). However, the boom inspired old players to leverage their audience reach by establishing and enhancing their online ventures (Tapsell 2017), thus changing how journalists did their jobs[19] and the media ownership landscape generally.

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[19] Between 2000 and 2001, when I was a reporter for the daily newspaper *Surabaya Post*, its online version was only the copy of its printed version. The same case applied to other online media outlets owned by legacy media, such as Media Indonesia. In the next years, these online outlets started to race to become the first (breaking news). In 2003, when working for Tempo, in addition to serving the daily *Koran Tempo*, I was also required to produce breaking news. At that time, Tempo's journalists were contacted by phone and asked to read out the story they had obtained. In the newsroom, typists were employed to type the stories and deliver the article to editors. In 2005, reporters were provided with Nokia Communicators, so they could send stories faster, and thus ended the role of typists. This also marked the beginning of media convergence in the newsroom. During editorial meetings, editorial staff were told about the urgency of media convergence and encouraged to adapt to technology instead of limiting themselves to being daily or weekly journalists.

Adapting to technology seemed a challenging mission for media outlets, especially for a print-based media company. Because they were owned by conglomerates and their business scale was much larger than the print media, television broadcasters had sufficient resources to establish multi-platform media operations, and "as a result, large media companies are becoming even larger" (Tapsell 2017, p. 39). However, traditional print media organisations struggled for their existence. Some, including Kompas and Jawa Pos, managed to become digital conglomerates, but many were forced to surrender their ownership to the larger media groups or go out of business[20]. In sum, media were consolidated and media ownership became more concentrated. There was concern this would degrade the quality of journalism if the news media outlets were seen as just business units in a conglomeration that is expected to seek profit over maintaining idealism (Haryanto 2011). Such owners of news outlets are those who consider journalism as a threat to their interests (Ida 2010).

Supported by their capital advantages, the media conglomerates were able to build their digital empires. In addition to being concentrated in ownership, media companies were also centralised in terms of their headquarters' locations. All but Jawa Pos Group are headquartered in Jakarta, the country's capital city. Table 5.1 shows the eight largest media conglomerations in Indonesia.

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[20] In 2015, Indonesia's Press Council reported the number of printed media in Indonesia was 321 and electronic media (radio, television, and online) was 1265. The numbers had decreased compared to the previous year when there were 509 printed media outlets and 1771 electronic (Pers 2015).

Table 5.1

Indonesia's Media and Digital Conglomerates

Company (media subsidiary)	Owner (Forbes rank/net worth by 2019)	Free-to-air TV station	Flagship print publication	Online	Flagship radio	Key comms. infrastructure
CT Corp (Trans Corp)	Chairul Tanjung (9/ USD 3.6 billion)*	TransTV	-	Detik	-	Transvision
		Trans7		CNN Indonesia		Indonusa Telemedia
		CNN Indonesia		CNBC Indonesia*		
Global Mediacom (MNC)	Hary Tanoesoedibyo (32/1 billion)*	MNC	*Koran Sindo*	Okezone	Trijaya FM	Indostar II satellite
		Global			Elshinta	
		RCTI		Sindonews	and 32 more	Indovision
		I-News				
EMTEK (SCMA Group)	Eddy Sariaatmadja (41/780 million)*	SCTV	-	KLY*	-	NEXT media
		Indosiar				Bitnet Kumunikasindo
		O-channel				
Lippo (Berita Satu)	Mochtar Riady (12/2.1 billion)*	BeritaSatu	*Suara Pembaruan*	Beritasatu	-	LinkNET
			Investor daily	Jakarta Globe		First Media
Kompas Gramedia (Kompas Group)	Jacob Oetama (na/1.3 billion)	KompasTV	*Kompas*	Kompas	Sonora	K-Vision
				Tribunnews		
Bakrie Group (Visi Media Asia)	Aburizal Bakrie (na/2.1 billion)	TVOne		Viva		Bakrie Telecom
		ANTV			-	
Jawa Pos Group (Jawa Pos Group)	Dahlan Iskan (na/797 million)	JawaPosTV and other 22 local tv station	*Jawa Pos* and 140 local newspapers	Jpnn.com	Fajar FM	Fangbian Iskan Corp
Media Group (Media Televisi Indonesia	Surya Paloh (na/575 million)	MetroTV	*Media Indonesia*	Metrotvnews.com	-	Media Group

Source: Tapsell (2017) and Globe Asia (2018)

In addition to being business people, many of the media moguls named in Table 5.1 were active in politics or government. These are Chairul Tanjung, Dahlan Iskan, Aburizal Bakrie, Hary Tanoesoedibyo, and Surya Paloh. Mr Tanjung, who was listed by *Forbes* (2019) as the ninth richest man in Indonesia in 2019, enjoyed a close relationship with President Susilo Bambang Yudhoyono (2004–2019) (Ida 2010). When hosting a journalist tour[21] for inspecting the preparation of the 2013 Asia-Pacific Economic Cooperation Summit, Mr Tanjung explained that Yudhoyono trusted him because "I can get things done". Following the resignation of the Coordinating Minister of Economics Hatta Rajasa, who ran for vice-president in May 2014, Mr Tanjung was

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[21] I was a journalist at that time and took part in the tour.

appointed to occupy the vacancy (The Jakarta Post 2014). In 2015, after ending his presidential term, Yudhoyono was appointed by Mr Tanjung as an advisor for CT Corp (Rahayu 2015). Tanjung established his business in the banking sector before diversifying to other sectors.

Mr Iskan is another confidant of President Yudhoyono. This ex-journalist was named the CEO of Indonesia's State Electricity Company in 2009 and "promoted" as Minister for State-owned enterprises in 2011 (Roza et al. 2012; Suharmoko & Alfian 2009). Iskan started his media empire in the 1980s by managing *Jawa Pos* daily in Surabaya, East Java, and then he established and took over local outlets across the country, earning him the nickname "King of Media" (Hidayat & Mistar 2013).

In the Yudhoyono era, Mr Bakrie was considered one of the most powerful politicians in the country. A mining magnate, he led the Golkar Party between 2009 and 2015, after it secured second place in the 2009 Legislative Election. In 2004, Yudhoyono appointed him Coordinating Minister of Economics, and in the next year he was appointed Coordinating Minister for People's Welfare. Prior to the 2014 Presidential Election, he was considered a potential candidate to challenge the newcomer Joko Widodo or become his running mate. However, due to lack of electability, he withdrew and supported Prabowo Subianto (Slater 2014). Even though he is no longer the Golkar Party's chairman, he still has a significant political influence, and in December 2019, he was named Golkar Party Advisory Board Head (Yahya & Meiliana 2019). Golkar and Bakrie were the main supporters of Widodo's re-election in 2019 (Hakim 2018).

Mr Tanoesoedibjo started his business by founding an investment company. In 2014, like Mr Bakrie, he supported Subianto. Before the legislative election, he joined the Hanura Party and was named as vice-chairman as well as running mate to Wiranto. The latter was the party's chairman who sought his third presidential candidacy (Rastika 2013). However, the pair failed to stand because Hanura did not get sufficient votes to be eligible to compete in the presidential election. While Mr Tanoesoedibjo supported Subianto, Wiranto supported Widodo. In 2019, Mr Tanoesoedibyo endorsed Widodo's re-election. In his second administration, Widodo added Mr Tanoesoedibjo's daughter, Angela (then 33 years old), as Deputy Minister of Tourism and Creative Economy.

Finally, Mr Paloh is a long-time supporter and ally of President Widodo. Mr Paloh is the founder and chairman of Nasdem Party (Tempo 2014). He was considered exceptionally meritorious for deploying Metro TV to help Widodo's campaign in 2014. At that time, Metro TV was the only national broadcaster that supported Widodo, while Subianto was supported by Bakrie's and Tanoesoedibjo's media. Aside from media, Mr Paloh possesses a wide range of businesses, from catering to mining (Septian & Purnomo 2013). Before Widodo emerged, Mr Paloh also enjoyed a good relationship with President Yudhoyono in his first term of office due to Paloh's support during the 2004 Presidential Election.

It is to be expected that politician-owned media will be partisan, especially during elections. Even though editorial teams had proclaimed their impartiality, Mr Septiaji Eko Nugroho[22] said during an interview for this research project that it was unlikely that the journalists would not be biased towards the owners (Interviewee no. 17, April, 2019). Consequently, trust in media has diminished and, as Mr S Nugroho noted in his research interview with me, "People are more comfortable to get news from social media, which is quite worrying." Mr S Nugroho's remark was echoed by Mr Abdul Manan[23], another research participant, who said that the state of media ownership in the country posed a challenge for restoring public trust in media (Interviewee no. 15, April, 2019).

In addition to the companies listed in Table 5.1, the media business has also attracted players from other sectors in the past decade. Among them is Djarum, a business group that produces cigarettes and owns Bank Central Asia (BCA), the largest private bank in the country. Djarum, owned by Indonesia's richest brothers, Michael and Budi Hartono, has been financing some media outlet start-ups, including Beritagar.id, IDN Media, Kumparan.com, and Opini.id (Grenisia & Rianto 2019). Djarum's venture into the media sector has not only increased the centralisation of media ownership in a handful of conglomerates, it has also impacted editorial ethics. As Mr Ignatius Haryanto[24,] one of the participants in this research, said:

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[22] Mr Nugroho is the founder of Mafindo (Indonesian Anti Hoax Community).
[23] Mr Manan was The Chairman of Alliance of Independent Journalist when interviewed.
[24] Mr Haryanto was academic and expert in media and journalism in Indonesia.

We know that smoking is still very controversial, and I think they (Djarum) have a significant interest in regulations in Indonesia, including health. The question is, do the media in their groups dare to speak up against these interests? (Interviewee no. 12, March, 2019)

Advertising

Advertising has long been crucial keeping media companies in business. Revenue from ads covers production costs and makes a significant contribution to profit. Media outlets that are unable to attract ads will experience severe financial bleeding: "Advertisers thus acquired a de facto licensing authority since, without their support, newspapers ceased to be economically viable" (Curran and Seaton in Herman & Chomsky 1988, p. 289). Advertising has been inseparable from media ventures in Indonesia since its earliest publication in the 18th century; at that time, when the newspapers were handwritten, the ads were details of auctions (Hill 2006). The end of the New Order era brought the freedom of the press – licensing and banning were abolished – and the advertisers effectively became the licensing authorities that would determine the fates of news media outlets, especially those that did not diversify their business models.

With a population exceeding 260 million people (World Bank 2019a) and steady economic growth (Trading Economics 2019), Indonesia is an attractive market for doing business. Media in Indonesia benefit from organisations that need to advertise their products. After experiencing a shocking drop, from IDR4.7 trillion (USD1.5 billion)[25] in 1997 to IDR3.4 trillion (USD348 million) in 1998 due to the impact of the Asian financial crisis, advertising expenditure began to increase (Setiyono 2005). Between July 2018 and June 2019, spending on advertising reached IDR165 trillion or USD11.5 billion (Katherina 2019). Figure 5.1 shows the steady increase in advertising spending, the most significant proportion enjoyed by television. Its share rose from 57 per cent in 1997 to 80 per cent in 2018. In 2019, television's share dropped slightly to 79 per cent due to the emergence of digital advertising, which secured IDR9.3 trillion (USD659 million).

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[25] IDR to USD conversion was calculated based on the average exchange rate of the respective years. The rate was generated from *https://au.investing.com/currencies/usd-idr-historical-data*.

Figure 5.1

Advertising Spending at Four Media Platforms in Indonesia from 1997 to 2019 (IDR Billion)
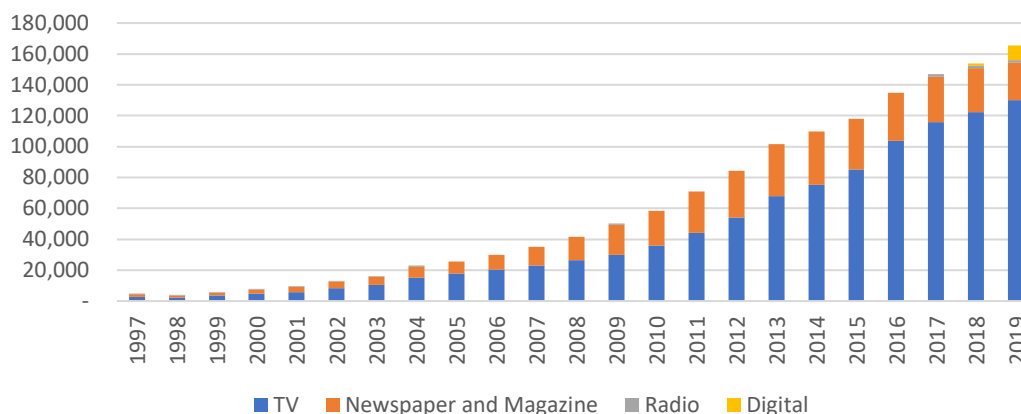
Sources: Setiyono (2005), Databoks (2018), Katherina (2019).

The dominance of television in advertising has enabled it to expand its business, including by investing in digital infrastructure to align itself with the digital era. Television channels have also expanded their businesses to the printed platform by starting their own newspapers or by acquiring dying ones. In 2006, Lippo bought *Suara Pembaruan* daily after the newspaper suffered financially. Two years later, the *Surabaya Post* daily was sold to Bakrie Group (Tapsell 2017). For broadcasting stations that already owned newspapers, television allowed them to promote their papers by airing the news they had broken. Editors from *Kompas* daily and *Media Indonesia* daily, for example, appear every morning in the news programs of the respective broadcasters, Kompas TV and Metro TV. Special programs are also dedicated to discussing the editorial sections of the newspapers[26].

Advertising has shaped the media landscape and impacted editorials (Herman & Chomsky 1988). In order to attract advertisers, news media outlets are required to be

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[26] A multiplatform media company, typically led by television, has more advantages to arm its marketing force. As access to the advertiser is getting easier because the latter prefer their ads to be on television, the sales team could offer advertising space on the other platforms separately or as a package with television ads. Based on my conversations with print media sales force, they were frustrated and had difficulty competing with salespeople representing television led media.

advertiser-friendly and avoid being hostile to business27, and they have to target audiences who have better purchasing power.

> Advertisers will want, more generally, to avoid programs with serious complexities and disturbing controversies that interfere with the "buying mood". They seek programs that will lightly entertain and thus fit in with the spirit of the primary purpose of program purchases – the dissemination of a selling message. (Herman & Chomsky 1988, p. 292)

As a result, more media outlets now dedicate their pages and airtime to programs that cater to advertisers. They create sections or programs to attract ads, from travelling and tourism to food and beverage, beauty and lifestyle, automotive, and property[28]. While these sections also fit with journalism, most of the stories focus on themselves with reviews and suggestions for their audiences, rather than exposing the wrongdoings or irregularities that might exist in those fields. Consequently, journalistic work that performs the watchdog role of monitoring the government and big corporations is diminishing (Kovach & Rosenstiel 2001a). Media outlets are hesitant to spend money on such projects because they would not be able to attract advertisers (Laksono 2010). Of the more than a thousand media outlets in Indonesia in 2010, only 20 works of investigative journalism were submitted to the committee of the 2011 Mochtar Lubis Award[29], the most prestigious recognition for journalists working in Indonesia (Suprihadi 2010). The number dropped from 27 in the previous year (Redaksi 2011).

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[27] Advertising has proven to be powerful in silencing media. The Meikarta case illustrates how media outlets in Indonesia turned a blind eye when it (Meikarta, a property project) failed to deliver its promise to their customers. In 2017, Meikarta spent IDR1.5 trillion (USD112 million) for ads in 15 TV stations, 99 newspapers, and 120 magazines and tabloids (Gumiwang 2018). "When the customers were disadvantaged, the media kept calm," said Ignatius Haryanto (Interviewee no. 12, March 2019).

[28] Despite its reputation for investigative journalism, on 1 April 2018, Tempo magazine issued a cover story about coffee. The magazine also issued a special edition about tourist destinations in Indonesia in November 2013. Both issues provided references for coffee lovers and travellers and drew advertisers related to the business. The magazine also frequently issues special reports about regional government, i.e., titled "The best mayors/regents". This issue was filled with advertisements from regional governments, despite many of their mayors or regents being included in the best.

[29] 2011 was the last Mochtar Lubis Award presentation.

Figure 5.2
The Biggest Advertisers in 2019 (USD Million)
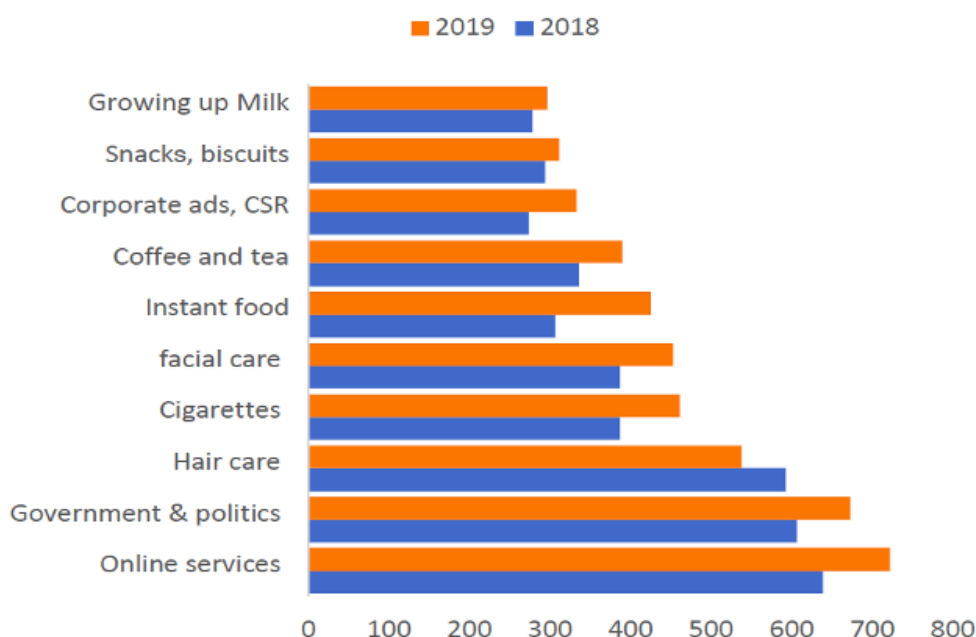
Note. Online services and government ads are the top two revenue sources for media. Online services are accessed via smartphone applications, such as Gojek (transport and food delivery), Traveloka (airline and hotel booking), Tokopedia (marketplace). Government advertising becomes more important because it keeps the media in business. In 2015, government advertising in the newspaper reached USD393 million or 73 per cent of ad revenue enjoyed by the print media.
Source: Nielsen report (Lubis 2020).

While advertising, to some extent, influences what may be on the news, it also has an impact on journalistic professionalism, especially within media organisations that are struggling to survive financially. In addition to interviewing and reporting, it is common that some journalists in Indonesia seek advertising (Ishak 2014). For example, when working as a reporter for *Surabaya Post* daily in 2001, I was asked by my bureau head to write news that was paid for by a local herbal company wanting to support the creation of a herb department in higher education. I interviewed the Director General Higher Education by asking him leading questions to get his quotes. This practice has become increasingly prevalent because some advertisers demand that their products or brands appear in the editorial section rather than in an advertorial[30]. As this practice is

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[30] For some journalists, attending a press conference on a product or service launching in a five-star hotel is more comfortable than digging for information about corruption or abuse of power. Their work about the product or service could attract advertisers and often event organisers include a sum amount of money in the distributed press kit.

worrying, the Indonesia Press Council regularly warns the media to avoid it: "News and advertising are separated business, and they should be performed by different personnel" (Press Council 2020).

Sourcing

Continuous access to information is a prerequisite for the sustainability of media businesses, which have limited human resources (Herman & Chomsky 1988). The more frequent the publication, the more the media need material to be published. Government institutions and corporates are the most reliable information supplier for the news media. Moreover, by utilising the material provided by those official sources, media outlets protect themselves from the possibility of being sued[31] or questioned because of bias or a lack of objectivity (Herman & Chomsky 1988). In Indonesia, journalists are also dependent on the "generosity" of the official sources (Hanitzsch & Hidayat 2012). This is partly because of the residual of New Order culture that sees the media as supporting development, so they are not supposed to disseminate information that might ignite chaos and erode public trust in the government. The country's multicultural population also makes the media very cautious when publishing a story to avoid racial or religious tension (Hanitzsch & Hidayat 2012). Therefore, information from public officials and leading corporates are considered to be reliable and safe for the journalist.

Like their counterparts across the globe, media outlets in Indonesia dispatch their reporters to get stories from government institutions. The Presidential Palace, ministry offices, law enforcement agencies' offices, military headquarters, people's representatives offices, and governors, regents and mayoral offices are the primary sites for reporters. Depending on the number of personnel allocated by a news media, reporters who are assigned to cover financial issues typically spend their days in the offices of the ministry of finance, the central bank, and the stock exchange. That same

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[31] In 2003, the use of unofficial sources caused a severe loss for *Tempo* magazine. Receiving information from an anonymous source, the magazine broke a story that local businessman Tommy Winata was behind the Tanah Abang fire. It accused the businessman of submitting a proposal to upgrade the biggest textile market in the country. Hundreds of Winata's supporters besieged *Tempo's* office and beat some journalists. Winata filed a lawsuit, which was followed up by the police by putting two *Tempo* journalists in detention (Steele 2010). The Supreme Court ruled that *Tempo* was guilty of defamation and it had to publish an apology in national newspapers. Although both parties finally made peace in 2009 (Munawwaroh 2009), the case has created a chilling effect for journalists relying on unofficial sources, especially when a story would irritate influential persons or institution (Steele 2010).

journalist would also be likely to establish contact with representatives of corporaations that operate in particular issues or fields. It is common for many government offices to have a room (press room) dedicated to journalists, equipped with computers and internet connection, free coffee and tea, and snacks. These offices also regularly feed the journalist the material to publish, and their staff organise press conferences or one-on-one interviews with higher officials[32]. These services are beneficial for making journalists' life more comfortable, considering that most journalists in Indonesia are underpaid[33] (Pintak & Setiyono 2011).

Included in the material provided to journalists in the press room will be a media release, which is written material explain to the journalist what an organisation is doing (Rich 2015). To produce appropriate media releases, government institutions draw on and learn from journalists. For example, the Public Relations Bureau at the Ministry of Maritime Affairs and Fisheries invited *Tempo's* editor to teach their officers to write a powerful media release so it would be newsworthy for journalists (Tempo 2019). While these institutions' employees are acquiring more skills, journalists are getting more pressure from their editors to produce more stories. Journalists working for online media must write up to seven stories per day (Saubani 2019). Facing this pressure, some journalists rely on media releases to meet their editors' demands. Hence, these journalists are dubbed "press release journalists" (Dahana 2018).

Furthermore, government institutions and corporations manage their own publications. The Ministry of Finance issues *Media Keuangan* (Finance Media), a monthly e-magazine to disseminate the latest fiscal policy updates (Keuangan 2020). Its team consists of 25 editorial team members, not including the editorial board and 12 photographers. This workforce is much bigger than that of Katadata.co.id, an online news media that focuses on the economy and business and general news. The latter only has 27 journalists and one photographer (Katadata 2020). The Ministry of Maritime Affairs and Fisheries maintains its two quarterly magazines, *Si Mila* and *Laut Kita* (Our

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[32] Pressroom staff are very friendly to journalists. Some offices frequently hold journalists' retreats in a place far from the city to strengthen the bond between journalists, press room staff and higher officials of the offices. This kind of event is fully funded by the offices, and often door prizes are provided.

[33] A survey conducted by the Alliance of Independent Journalist in Indonesia recommends that the minimum monthly wage for new entry journalist living in Jakarta in 2020 is IDR8.8 million (USD629). However, of 144 journalists (with a work period of three years) surveyed, all of them were underpaid (AJI 2020a).

Ocean) (Kementerian Kelautan dan Perikanan Republik Indonesia 2020). The Ministry of Defence has many publications. In addition to the bi-monthly magazine *Wira* (Hero), which the ministry headquarters publishes, the National Armed Force (TNI) headquarters issues the monthly *Patriot*. Each branch of the TNI, the Army, the Navy, and the Airforce also publishes a magazine: respectively, *Palagan* (Battleground), *Cakrawala* (Horizon), and *Suara Angkasa* (Voice of the Sky). In addition, each of the 15 Regional Military Command Headquarters under the Army regularly publishes a magazine. The TNI reportedly also operates and finances numerous news websites that support the unity of Indonesia while suppressing voices that support West Papua's independence,(Allard & Stubbs 2020).

When selecting experts, the media tend to choose sources whose views are approved by the official sources (Herman & Chomsky 1988). In reporting terrorism, media outlets are likely to interview retired police or military officers or former terrorists who converted and are now authorised by law enforcement agencies. Among the former are General (ret.) Abdullah Mahmud Hendropriyono (former Head of the Indonesian State Intelligence Agency) and Inspector General (ret.) Ansyaad Mbai (former Head of National Agency for Combating Terrorism). Among the latter is Ali Imron, who was sentenced for life for his involvement in the 2002 Bali Bombing (Alius 2019; Ariefana 2015; Sihombing 2019; Tempo 2017). Despite there being a reasonable explanation that in reporting terrorism the media cannot always be neutral, there is concern that the media reports are biased towards and glorify law enforcement agencies (Wahjuwibowo 2018).

Along with needing an increasing number of significant resources to feed journalists with sources and materials to publish, official institutions and corporations also exercise their power to avoid the media when they consider an interview or doorstop encounter would harm them (Herman & Chomsky 1988). In reporting corruption cases, journalists often find it difficult to interview public officials who are allegedly involved. To get away from reporters, these officials employ, for example, guards, secret exit doors, and vehicles. In 2017, the then Speaker of House of Representatives, Setya Novanto, escaped from dozens of reporters who chased him. Novanto, who would be later found guilty of corruption, was surrounded by House guards and escorted to his car through a connecting door. No journalists could get through the door because they were blocked

by the guards (Hakim 2017). During *Mata Najwa*, a local television talk show, former soccer coach Fakhri Husaini revealed that he received a phone call from the Secretary General of the Indonesian Football Association asking him not to appear in a program that discussed a match-fixing scandal (Fajriah 2018).

Flak

Adverse reactions to a media program are considered to be flak. Flak includes objection letters, phone calls, lawsuits, complaints to authorities that have the power to penalise media outlets, and complainants threatening or taking punitive action against news outlets and their personnel. These actions are usually launched by an individual or a group (Herman & Chomsky 1988). The more power possessed by the flak producer, the more a media outlet may suffer financially or be forced to accommodate the flak, resulting in a chilling effect on media and journalists (Bradshaw 2017). In this section, I focus on the flak documented by the Alliance of Independent Journalists Indonesia and the Indonesian Press Council: old-school flak and lawful flak.

Old-School Flak

Even though the press in Indonesia has been free since 1998 (Steele 2012), practices to oppress journalism still occur. The Alliance of Independent Journalists Indonesia (AJI/Aliansi Jurnalis Independen) reported an average of 51 acts of violence against journalists each year from 2015 to 2019 (AJI 2020b). The overall number, 306 (see Table 5.2.), includes the murder of Beni Faisal, Editor in Chief of *Fokus Lampung,* in front of his house in Bandar Lampung, the southernmost city in Sumatra. Although the police insisted that the murderer, who was shot dead during an ambush, killed Faisal in order to seize his motorbike (Yasland 2015b), others suspected that the killing was related to his journalistic work. The Head of Lampung Province Information Commission, Juniardi, revealed that Faisal told him about threats he received because he had exposed some corruption cases involving a local government agency (Yasland 2015a). Lampung is well known as one of the corruption epicentres in Indonesia (Ricardo 2020). Since 2011, eight regents from the province have been arrested and convicted for this crime (Saptono 2019).

Table 5.2 shows the types of violence faced by journalists in Indonesia between 2015 and 2019. Physical abuse and expulsion from reporting premises or banning from coverage make up more than half of the 306 recorded cases. These were followed by verbal threats and the destruction of reporting equipment and associated data. While the number of cases has decreased since then, lawsuits and the criminalising of journalism still haunt the media and journalists. In Indonesia, instead of taking legal action, the press law stipulates that individuals or parties who feel harmed by media coverage are entitled to a space in the particular media to express their version of the facts (*Law No. 40 on the Press* 1999). They can also raise objections to the Press Council so it can review the news stories and arbitrate complaints (Romano & Prasetyo 2021). A well-covered criminalising case involved two online journalists in Medan, North Sumatra Province, in 2018. The local police arrested them because they wrote about the North Sumatra Police Chief who allegedly took bribes from a local business person (AJI 2020b).

Table 5.2
Violence Against Journalism (2015–2019)

Year	Verbal threat	Physical abuse	Mass mobilisation and office siege	Killing	Lawsuit and criminalising	Destruction of reporting equipment and data	Expulsion from reporting premises or banning from coverage	Total
2015	9	20	1	1	1	3	7	**42**
2016	17	36	-	-	-	10	18	**81**
2017	7	34	1	-	5	6	13	**66**
2018	15	16	2	-	7	9	15	**64**
2019	7	20	-	-	5	14	7	**53**
Total	**55**	**126**	**4**	**1**	**18**	**42**	**60**	**306**

Note. Physical abuse is the typical violence against journalists in Indonesia (AJI 2020b).

As shown in Table 5.3, executive officials and the police and military collectively perpetrated more than half the violence cases against journalists. A recent high-profile case involved the Minister of Agriculture in 2018, Amran Sulaiman, who filed a report to the police after *Tempo* Magazine released an investigation about a sugar scandal involving his office, just a few weeks before his term ended (Aliansi Jurnalis Independen (AJI) 2020b). He sought material damages of IDR22 million and immaterial damages of IDR100 billion. At the regional level, between 2015 and 2019,

at least two governors and eight regents/mayors punched, slapped, swore, and expelled journalists because they did not like the stories published by the media the journalists worked for. While the police and executive officials exert their institutional power, citizens and mass organisations, the second biggest group responsible for violence against journalists, rely on the power of the masses. One of the reasons for the violence by local residents and mass organisations is their belief that a media outlet might be partisan and biased towards parties they do not like.

Table 5.3
Perpetrators of Violence Against Journalism (2015–2019)

Year	Lawmaker and member of political party	Executive	Police and military	Unknown	Local resident	Lawyer and judge	Mass organisation	Student and academic
2015	1	7	12	5	17	-	-	-
2016	7	15	20	6	26	2	3	2
2017	2	13	21	5	19	1	3	2
2018	1	21	17	3	12	1	7	2
2019	1	2	31	5	7	-	6	1
Total	**12**	**58**	**101**	**24**	**81**	**4**	**19**	7

Note. The state's apparatus are the main threat for journalist in Indonesia (AJI 2020b)

Lawful Flak

As mentioned in the previous section, Indonesian press law encourages out-of-court resolution of disputes related to journalistic work. Aside from submitting a complaint to a particular news outlet, an individual or party who feels injured can report to the Press Council, which should "give consideration and find solutions to any complaint lodged by the public towards cases concerned with the press' reportage" (*Law No. 40 on the Press* 1999). From 2014 to 2018, the Indonesian Press Council received an average of 466 complaints per year (see Table 5.4.). There are three types of resolution: 1) correspondence between parties in dispute mediated by the Council; 2) face-to-face mediation; and 3) a recommendation, when both parties cannot reach an agreement during a mediation (see Table 5.5). Other ways might be applied by the Council to prevent the complainant from bringing the case to court (Kominfo 2014, 2017).

Table 5.4

Complaints Lodged to The Press Council

Year	Complaint	Case closed	To proceed next year
2014	555	523	32
2015	397	356	41
2016	530	489	41
2017	482	426	56
2018	365	317	48

Note. Downward trend in the number of complaints in the past three years (Kominfo 2014, 2015, 2016, 2017, 2018).

Table 5.5

Complaint Resolution

Year	Correspondence	Mediation	Recommendation	Other	Total
2014	281	30	28	184	523
2015	304	26	26	-	356
2016	388	46	45	10	489
2017	334	51	40	1	426
2018	221	43	53	-	317

Note. An upward trend in the number of unresolved cases (recommendation) (Kominfo 2014, 2015, 2016, 2017, 2018).

When a recommendation is issued, this means a complainant can file a report to the police, which requires more resources for both parties in terms of time and money. Figure 5.3 shows the recommendations issued by the Council in 2018. Of these 53 recommendations, cases, 43 were lodged by influential people such as army personnel, governors, regents, mayors, heads of government offices, and politicians.

Figure 5.3

Recommendations Issued by the Indonesian Press Council in 2018 by Complainants

53 recommendations

■ Army personel	
■ Executive (governoor, regent/mayor, head of office)	
■ Businessman and corporation	
■ Lawmaker, politician and party	
■ Village administrator	
■ Head of neighborhood	
■ Lawyer	
■ University	
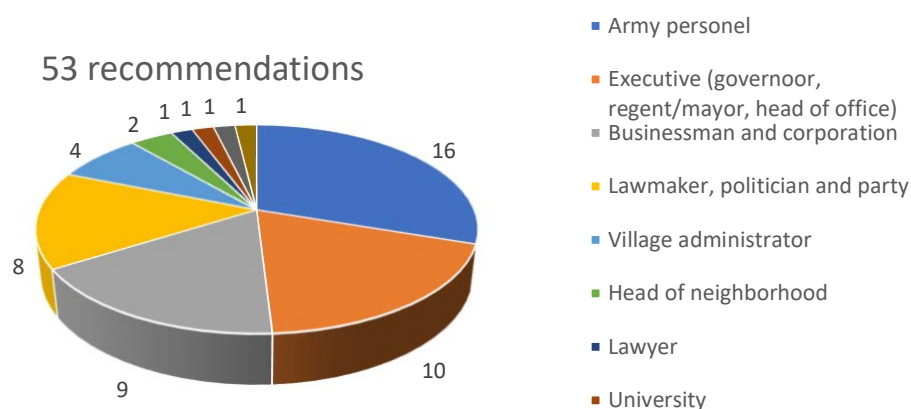
Note. Disputes between media and the state's apparatus have the high potential to be unresolved (Kominfo 2014, 2015, 2016, 2017, 2018).

Anti-Communism and Fear

Blamed for killing six Army generals and launching a failed coup in 1965, the Indonesian Communist Party (PKI) was condemned and dissolved (*TAP MPRS XXV/MPRS/1966* 1966). Its leadership were sentenced to death by the extraordinary military court and executed by the Army and paramilitary groups. Hundreds of thousands of its members were hunted down, killed, or sent to Buru Island as forced labour (Sulistiyo 2000). The PKI and communism were portrayed not only as the ultimate evils threatening the nation but also as threats to religion because their ideology is characterised as atheistic and hostile to believers (Duile 2018). Hence, communism is still regarded as the enemy of Pancasila (the Five Principles), the official philosophical foundation of Indonesia, which starts with "Belief in the Almighty God".

After eliminating communists and securing power, President Suharto introduced the Bersih Lingkungan (clean environment) policy to prevent a PKI resurgence (Romano 2013). Being labelled a communist or sympathiser in the New Order Era meant a death sentence. Ex-prisoners and their families would have ET (Eks Tapol/ex-political prisoner) marked on their official identity cards, and they were subject to rejection when applying for jobs and financial services and to discrimination generally (Affan 2019). Since communism is still regarded as the arch-enemy of Indonesia and there are severe consequences for being associated with it, all people and parties "are under great

pressure to demonstrate their anti-communism credential" (Herman & Chomsky 2006, p. 301) by embracing Pancasila. Journalists are no exception.

Despite decades passing since the 1998 Reformation, the residue of the New Order is still evident. Politicians and the military exploit communist ghosts to achieve political goals (Miller 2018). This has become more intense since the 2014 Presidential Election campaign when Joko Widodo, Governor of Jakarta who suddenly became famous, was nominated as a presidential candidate, beating the old-established national politicians (Tapsell 2017). His rival's supporters associated him with communism, and they portrayed his father as a communist (Hearman 2014b; Miller 2018). Whenever anti-communism was intensifying, many would lose their common sense and those accused would need to rebuff the allegations and show their fierce opposition to the ideology (Herman & Chomsky 2006). On some occasions, while refuting his association with communism, Widodo vowed to crush the PKI if it ever revived: "What, PKI? If it revives, then let us destroy it!" (Patria & Halim 2017). Widodo also cancelled a plan for a national apology to the PKI members and sympathisers killed during massacres after 1965 (Amindoni 2016).

Journalists are often unsceptical when reporting stories about the resurrection of communism. The media are hungry for commentators to heat up the situation. This is the time when high-profile people who lack authority emerge as primary sources without being scrutinised (Herman & Chomsky 2006). In the past ten years, if ever the fear of the communism needed amplifying for political gain, retired Army Lieutenant General Kivlan Zen has been the person to do it. His analyses of the revival of the PKI and its plans to take over government control have been accommodated in many mainstream news outlets (Novia 2016; Paskalis 2016; Tashandra 2016). After retiring as the Commander of the Indonesian National Armed Forces in 2017, General Gatot Nurmantyo joined Zen as the "speaker" of anti-communism and gained extensive media coverage (Heychael 2018).

5.2 Conclusion

In this chapter, I have presented the current condition of journalism in Indonesia using the five filters of the propaganda model. The propaganda model argues that journalists

and media organisations are influenced by these filters, even though they may believe themselves to be independent and objective (Herman & Chomsky 2006). The application of the ownership and profit orientation filter shows that major media organisations in Indonesia are owned by a handful of businesspeople, some of whom are politicians. This has caused the media to be aware of and, to some extent, supportive of their owners' business and political ventures. In terms of advertising, media outlets have been forced to adjust their content to accommodate advertisers. Journalistic works on travelling, beauty, lifestyle, and property have also proliferated in line with the increase in advertising from those sectors.

The continuous demand to produce news, especially in the digital era, requires the media to maintain good relationship with their sources. Furthermore, media are very cautious when it comes to "annoying" powerful individuals or groups as this could result in flak, either lawful or unlawful, and result in considerable extra cost. The last filter, anti-communism, is still relevant even though Indonesia's Communist Party has been eliminated. Stories showing sympathy to victims of communist annihilation would be considered pro-communist. Moreover, high-profile figures that condemn communism and blame it for causing the social, economic, and political problems always gain attention from the media.

I argue that these pressures have decreased trust in media, a problem already exacerbated by digital disruption. To stay in existence and their uphold journalistic values some Indonesian media outlets have launched initiatives such as data journalism. Hence, this chapter has contributed to answering Research Question 1 of this thesis by analysing the contemporary situation of journalism in Indonesia that drives news outlets to adopt data journalism.

In Chapter 6, I will explore the digital disruption that has posed challenges to the media industry and journalism in Indonesia and how these sectors have responded to them. I will present the points of view of professionals in journalism, government officials, media regulators, civil society organisations, and academics. The data for Chapter 6 were generated from interviews with my research participants during my field trip to Indonesia.

Chapter 6

Facing Digital Disruption:
The Entry of New Players in the Journalistic Field, Social
Media, the Spread of Hoaxes, and Data Journalism

In Chapter 5, I provided background to the contemporary state of the media in Indonesia. Applying the propaganda model (Herman & Chomsky 2006), I presented an overview of the media and its development since President Suharto's resignation in 1998. In this findings chapter, I focus on the technological impact on journalism, which has encouraged the adoption of data journalism and visualisation by several media outlets. Hence, this chapter offers a bridge between Chapter 5 and Chapter 7, which discuss the content analysis of simple data journalism projects from five news media outlets.

This chapter argues that while technology allows news media to disseminate news immediately, it creates complicated problems threatening the continuity of the news industry and journalism. Competition between news outlets and other content creators in the digital realm severely impacts journalistic products, blurring the line between reliable journalistic information and hoaxes. Therefore, this chapter suggests that journalism must reinforce its cultural capital to differentiate itself from other content on digital platforms. This chapter, then, answers Research Question 1 because it maps industry changes and compelling factors that drive the adoption of data journalism by news outlets in Indonesia.

Data for this chapter was generated from interviews with research participants who are journalism stakeholders, including journalists themselves. I asked them about journalism's challenges in the digital era and the spread of hoaxes. Their responses were coded on NVivo to the following nodes: entry of new players and their economic impact on the old players; news media fight for audience traffic; the spread of hoaxes;

and data journalism as an initiative for quality journalism. Table 6.1 shows the list of participants whose accounts are referred to this findings chapter.

Table 6.1
List of Participants who are Quoted in This Chapter

Interviewee no.	Name	Title	Organisation
1	Toriq Hadad	CEO	Tempo
5	Wisnu Nugroho	Editor in Chief	Kompas.com
8	Nufransa Wira Sakti	Head of Communication Bureau	Ministry of Finance
9	Nazmi Tamara	Data Journalist	Katadata.co.id
10	Yosep Adi Prasetyo	Chairman	Indonesian Press Council
11	Metta Dharmasaputra	CEO	Katadata.co.id
12	Ignatius Haryanto	Academic	Universitas Multimedia Nusantara
14	Wenseslaus Manggut	Chairman	Indonesian Cyber Media Association
15	Abdul Manan	Chairman	The Alliance of Independence Journalists
17	Septiaji Eko Nugroho	Chairman	Indonesian Anti-Slander Society
19	Rudiantara	Minister	Ministry of Communication and Informatics
20	Endah Nasution	Team Leader	Jabar Saber Hoax
22	Krisno Yuwono	Head of Public Communication	Ministry of Public Works and Housing

Note. Interviewee numbers and colour highlights refer to Table 4.1 in Chapter 4.

From news media organisations, the participants (gold highlights in Table 6.1) are Mr Hadad, CEO of Tempo, Mr Dharmasaputra (CEO Katadata.co.id), Mr Tamara (Data Journalist at Katadata.co.id) and Mr W Nugroho (Editor in Chief of Kompas.com).

From government agencies (yellow highlights) are Mr Sakti, Rudiantara, and Yuwono. Mr Sakti was the Head of Communication Bureau at the Ministry of Finance, and Mr Yuwono was the Head of Public Communication at the Ministry of Public Works and Housing. Meanwhile, Mr Rudiantara was the Minister of Communication and

Informatics at the time of his interview. He served in this position from 2014 to 2019. Before occupying the office, he was an executive for several state-owned companies and Secretary-General of the Association of Indonesian Cellular Operators.

Interviewees from news media regulator (green highlight), and media and journalist's association (blue highlights) are Mr Prasetyo, Mr Manggut, and Mr Manan. Mr Prasetyo was a member of the Indonesian Press Council. Before assuming the role in 2016, he was a commissioner of the Indonesian National Commission on Human Rights. Mr Manggut was the Chairman of the Indonesian Cyber Media Association. He was a print journalist for more than a decade before moving to online journalism in 2008. Mr Manan was the Chairman of The Alliance of Independence Journalists (2017-2020), one of Indonesia's journalist associations. He was also an editor for *Tempo*, having worked for the news outlet for almost two decades.

Mr Nasution and Mr S Nugroho (orange highlights) were practitioners in the field of digital literacy. Mr Nasution was widely known as a blogger and an IT practitioner. In December 2018, he was appointed by Jawa Barat Governor as the Team Leader of Jabar Saber Hoax[34], which was assigned to monitor and debunk hoaxes circulated in Jawa Barat, the most populous province in Indonesia[35]. Mr Nugroho was the Chairman of the Indonesian Anti-Slander Society (Mafindo), an anti-hoax civil society organisation. Meanwhile, Mr Haryanto (grey highlight) was a journalism lecturer and ex-journalist who had served as a member of Kompas's Ombudsman Team.

6.1 Entry of New Players to the Field and Their Impact on the Old Players

As elsewhere around the globe, technological advances have posed great challenges for journalism in Indonesia. According to Mr Manggut, they have diminished the role of the traditional news media and dismantled the media's business model (Interviewee no. 14, March 2019). This challenge was due to, among other things, players from the technological field extending their ventures to the journalistic field. This study's research participants pointed out three groups originating from the field of technology that have invaded the media business space: the tech giants, social media content

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[34] Jabar is the abbreviation of Jawa Barat, and Saber is "sapu bersih" (sweep-up).
[35] According the Central Statistics of Indonesia, the population in Jawa Barat in 2020 was 49.9 million, which is about 20 percent of the country's population.

creators, and individuals with an information technology background who established the media outlets. Mr Nasution explained:

> New media entrepreneurs are starting to emerge. They have a better understanding of the content that the millennials like. Examples from abroad, among others, are Buzz Feed. In Indonesia, we have *IDN Times*, which is not news in nature. Its content is more entertaining, so it is shared more often. (Interviewee no. 20 April 2019)

In its "About Us" page, IDN Times claims to be "the leading multi-platform media company for Millennials and Gen Z" (Utomo & Utomo 2021). This outlet was initiated by Winston Utomo in 2014 when he was working for Google in Singapore. Later, his brother, William, who worked for an investment company in the US, joined Winston. Within three years of[36] its establishment, IDN Times employed 140 staff located in Jakarta and Surabaya (Soon 2017).

The IDN Times case had ex-journalist Mr Dharmasaputra re-think the key success of creating new media in this information age. He said:

> If we look at the current phenomenon, the question is whether successful media companies are determined by people who have a news media background or people who actually have experiences outside the media, for example, technology.
>
> There are people who have a journalistic background, but that is not the key to the success of the media they build. On the other hand, there are people who do not understand journalism at all, but they are good at technology and know Google and Facebook. They can take advantage of technology to do business in the news media realm, and it seems that it is now a success. (Interviewee no. 11, March 2019)

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[36] Also within three years, Winston and William were included in a list of 30 under 30 years in Asia who innovated in media, marketing, and advertising (Wang 2017).

Mr Manggut highlighted the production and dissemination of news by tech giants Google and Facebook, which have taken roles in the media business either as aggregators or content producers:

> Currently, Google has Google News, and Facebook has "instant articles". So, in the last two or three years, these technology fellows have made their way into the news media business. Their core is in technology but offers journalistic products. Meanwhile, the core of a media company like us is producing content and using technology only for the platform. (Interviewee no. 14, March 2019)

Mr Nasution also commented on social media content creators:

> In the past, content creators had to go to the news media to reach the public. Now, these content creators have the same position with the media. With a much cheaper production cost and they do not require many people, sometimes even alone. They have almost the same audience as media companies' audiences. (Interviewee no. 20, April 2019)

Mr Nasution's statement shows that the media's role is in a critical situation. The content creators, as well as the new technology companies and the tech giants, are taking over the roles and the power of the media. In light of this point, Mr Manan explained:

> The most severe impact for journalists and the mainstream media is that social media performs one of the essential functions that have been carried out by the mainstream media, namely providing information, which was previously monopolised by the media. This has led to a diminished role for the mainstream media, which could be indicated by a reduced number of readers, reduced circulation, the closure of several media companies, and advertisements turned to digital media. (Interviewee no. 15, March 2019)

Mr Manggut also said:

> In the past, we [the news media companies] were the only ones who produced news. We also monopolised the dissemination of information. Now, in the upstream and downstream of the news business are not just us. There are more players other than us, thousands of Facebook and Youtube accounts. People can

create social media accounts to convey information. (Interviewee no. 14, March 2019)

Mr Manggut gave an example of an Indonesian Youtuber, Atta Halilintar, who had 11 million subscribers when the interview took place (by May 2021, he had 27.5 million subscribers).

> President Widodo, for example, welcomed a Youtuber [Halilintar] for an interview at the Palace. The latter posted on his channel and within one hour the video was watched by 350 thousand people. The President certainly sees this Youtuber as more powerful than journalists. He has 11 million subscribers, while no news media company has more than 3 million subscribers. (Interviewee no. 14, March 2019)

Mr Dharmasputra stated that the news media companies had to compete with the technology companies to maintain their existence and reach their audiences:

> Therefore, the key to a news media company's success is not in the journalistic competence, but it lies in another realm, namely technology. (Interviewee no. 11, March 2019)

Moreover, Mr Manggut said the decline in legacy media, especially print, has driven news outlets to switch to or strengthen their digital platform:

> For the news media companies, 70–75 per cent of advertising revenue comes from the banner, which the price is calculated based on the traffic. Online news media outlets get used to banner advertising because its cost is cheap; we only need to set the banner and get paid. (Interviewee no. 14, March 2019)

However, Mr Manggut acknowledged that the competition between the technology companies and the news media that originate from the journalistic field is not an equal fight:

> The difference is that these technology companies do not only rely on traffic but also data. These companies have accurate users' data, which can be used to make advertisements more targeted. (Interviewee no. 14, March 2019)

According to Mr Manggut, things became more complicated when the news media outlets tried to boost their traffic by creating Facebook pages. In 2020, this online social media and social networking service had the most users in Indonesia, at about 140 million (Statista 2020b). Mr Manggut likened Facebook to a big house where all agents, including news media outlets, scramble for the public attention, but this house is actually shrinking the news media business:

It must be admitted that the primary source of readership comes from Facebook. Their users are over 140 million. Meanwhile, readers who come directly to online news media, if all combined, are only 10 to 30 million. Because the big house is there, we also have to exist there. That is why we created the pages. But as a result, the number of direct readers to the news website is getting smaller, because they prefer to rely on the technology company [Facebook]. (Interviewee no. 14, March 2019)

Because the news media and other types of media – including individual and corporate websites – compete on the same platform (Facebook), those that gain the highest traffic attract more advertising. Mr Manggut said that, as a result, the news media's share of advertising was diminishing because they could not perform well against their competitors:

Banner ads are still the mainstay but it is decreasing. Brand owners think social media can access more viewers. In news media, banner ads might be seen by 2 million, but on Facebook can be seen by 150 million people, so the cost per person is lower.

I noticed that some brands are no longer appearing in news media banners. This is because they shifted. Some created their own Facebook page or other social media accounts, and they can establish engagement with their audiences. (Interviewee no. 14, March 2019)

Tables 6.2 and 6.3 provide evidence to support Mr Manggut's comments. Table 6.2 shows the top 10 Facebook pages by the number of likes, the blue highlights indicating the only two news media pages in that list. Table 6.3 shows the top 10 Facebook pages owned by news outlets and non-news media by the number of likes. In line with Mr

Manggut's statement, some brands have managed to create their audience base so they can deliver their message effectively without relying on news media platforms.

Table 6.2
The Overall Indonesian Facebook Page by the Number of Likes

Rank	Name	Occupation	Account type	Likes (millions)
1	Mario Teguh	Motivator	Individual	18.88
2	Drawing Pencil	Artist	Individual	12.94
3	Kompas.com		Business	10.54
4	President Joko Widodo	Politician	Individual	10.06
5	Kang Dedi Mulyadi	Politician	Business	10.02
6	Persib Bandung		Business	9.76
7	Prabowo Subianto	Politician	Individual	9.62
8	Blibli.com		Business	8.54
9	Dahsyat		Business	8.41
10	Liputan6		Business	8.37

Source: Indonesia Facebook page statistics (2020)

Table 6.3
Top Ten Indonesian News Media and Non-News Media Brand on Facebook by the Number of Likes

Rank	News media		Non- news media brand		
	Name	Likes	Name	Product/service	Likes
1	Kompas.com	10.54	Blibli.com	E-commerce	8.54
2	Liputan6	8.37	OLX Indonesia	E-commerce	7.64
3	Tribunnew.com	8.25	Tokopedia	E-commerce	6.34
4	VOA Indonesia	6.30	Yamaha Motor	Motorbike	6.10
5	Detikcom	4.94	Welovehonda	Motorbike	5.78
6	Indozone.id	4.94	Telkomsel	Network provider	5.51
7	Merdeka.com	4.28	MyXL	Network provider	5.44
8	Viva.co.id	4.10	Batik Indonesia	Fashion	5.18
9	SCTV Indonesia	4.03	Sorabel	Fashion e-commerce	4.24
10	NET Mediatama	3.74	Indomie	Food	3.90

Source: Indonesia Facebook page statistics (2020)

Furthermore, when the news media moves to Facebook, this social media takes advantage of the increased advertising because it has more visitors. Mr S Nugroho said that the news media outlets actually fight for the small share of advertising (Interviewee no. 17, March 2019). Mr Dharmasaputra said he calculated that 80 per cent of the advertising share had been acquired by Facebook and Google (Interviewee no. 11, March 2019).

6.2 The Fight for Traffic and the Diminished Quality of Journalism

Although it is difficult for online news media companies to compete on Facebook or other social media platform, they still struggle to maintain or even boost their traffic. In light of this situation, Mr Manan argued that news media were not certain about the business models they needed to apply when they shifted to the digital platform. He said that news media just adopted the trend in the digital realm:

> The media are not confident in journalism or a business model that must be developed. They adopt the trend because they think this is the way to survive. (Interviewee no. 15, March 2019)

Moreover, Mr Manan said that news media often have to amplify stories that are viral on social media:

> News media often follow issues from social media instead of coming up with their own. And they expect to reap the revenue. (Interviewee no. 15, March 2019)

Echoing Mr Manan, Mr W Nugroho said online news media outlets are still in the "trial and error" phase while they find the right business model:

> If we know the best business model, we will definitely apply it. But everyone is still trying. In this world, no one has yet found the right business model. In the meantime, many are reliant to page view and AdSense.
>
> The logic is that the more people click your article, the more profit you will get. How do I get the most clicks? Make the sensational news and make the attractive news even though it is not in the public interest and not useful. The important thing is to produce a high page view. (Interviewee no. 5, March 2019)

Sensationalism also makes social media attractive, according to Mr Manan. Sensational stories circulated on social media, posted by unverified users, sometimes go viral. Mr Haryanto said that news media outlets were often worried about not updating for fear of missing sensational stories:

> News media are afraid of being abandoned by the public because of missing sensational stories. Hence, they [are] forced to create or follow up such viral stories on social media, without considering whether the stories make sense. (Interviewee no. 15, March 2019)

Consequently, some news media had to abandon journalistic values for speed and traffic, as Mr S Nugroho noted:

> When news media are on a digital platform, of course, the competition will be much more violent than when they were still on traditional platforms. That is why they sacrifice the accuracy, and they hasten to upload news to increase traffic, causing misleading in public. (Interviewee no. 17, March 2019)

In addition to lack of accuracy, Mr Dharmasaputra pointed out that clickbait has become one of Indonesia's online news media characteristics:

> To be honest, most of the online news media outlets in Indonesia have given up, whether they like it or not, they have to adopt clickbait because the revenue stream is only from traffic. As long as you still rely on traffic, it is difficult to get out of the clickbait trap. (Interviewee no. 11, March 2019)

Mr Manggut also said that the news media has had to put aside some journalistic values because the race for pageview on the digital realm is not limited to news media only. Those who are outside the journalistic field are not regulated by media laws or codes of ethics:

> In terms of content, they are free. They are not required to adhere to [mainstream] media laws, ethics, cyber media guideline like we are. So, we [news media] found ourselves in a big landfill, which damage our credibility. (Interviewee no. 14, March 2019)

Mr Manggut gave an example of how news media were "forced" to abandon their journalistic principles when the fake story of the "Ratna Sarumpaet assault"[37] arose during the 2019 Presidential Election campaign in October 2018:

> It has become customary that news media refers to social media. If someone posts a story that is viral, news media will rush to create or follow up the story. In the Sarumpaet's case, it is true that the news media can be blamed because it was adrift in misinformation for too long. The media did not attempt to verify. It must be admitted that only a few media verified it because Sarumpaet's news was very viral. (Interviewee no. 14, March 2019)

Minister Rudiantara said that online news medias' journalistic practices are worsened by the fierce competition between them; instead they should be upholding journalistic values to differentiate themselves from non-news media organisations or individuals:

> The problem is, news media are also competing with each other. Each outlet strives to be the first to convey information. So, the choice is between speed and truth or accuracy. Understandably, one outlet is afraid of falling behind from other outlets. (Interviewee no. 19, April 2019)

Mr Nasution said that lack of attention to accuracy and the use of clickbait (see Figure 6.1) sometimes occur in newsrooms with reputations for quality journalism:

> We can see that sometimes Tempo[38] also uses strange titles [clickbait]. Likewise, Metro TV. They seem to throw away the credibility that has been built for decades. This is because they compete with other types of media, including social media. (Interviewee no. 20, April 2019)

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[37] Ratna Sarumpaet was an artist and activist. She supported Prabowo Subianto during the 2019 Presidential Election. Subianto was the only presidential candidate facing the incumbent Joko Widodo. Sarumpaet, as claimed by social media accounts of her friends, was assaulted after leaving an airport in the city of Bandung, leaving her face with some bruises. Later, Sarumpaet admitted that the bruises were caused by cosmetic surgery and that she was not attacked and was not travelling to Bandung. Sarumpaet's fake story is outlined in the introduction chapter of this thesis. Mr Prasetya noted that in reporting Sarumpaet's case, many journalists were engrossed by Subianto's supporters' comments. They missed checking some crucial details, such as the flight to Bandung, to make sure that Sarumpaet was in the city. "They should interview airport's authority to find out," said Mr Prasetyo (Interviewee no. 10, March 2019).

[38] On February 27th, 2020, *Tempo.co* uploaded an unverified story saying that Hong Kong actor Jackie Chan was Covid-19 positive (Marvela 2020). However, on the next day, *Tempo's* Fact Check announced that the story was fabricated (Arsyad 2020). *Tempo.co* also sometimes used clickbait titles, and it was admitted by its CEO Mr Toriq Hadad during an interview for this research. "We reject clickbait. We don't want to deceive readers for the sake of traffic. Yet, if there is news that is clickbait (on *Tempo*), it is done by accident" (Interviewee no. 1, March 2019).

Figure 6.1

A Screenshot of AJI Surabaya's (the Surabaya Branch of the Alliance of Independent Journalists) Twitter

Note. The Alliance of Independent Journalists warned news outlets to avoid sensational news and clickbait following the Sriwijaya Air (SJ) flight 182 crash near Jakarta on January 9, 2021. The tweet contains some screenshots of news titles from two online news outlets. The titles exploit the tragedy, as well as utilised it to boost unrelated stories. The following are translations of the four news titles (top line left to right): 1. The charm of Laki Island, where Sriwijaya Air is allegedly crashed; 2. A glance of Lancang Island beauty, where Sriwijaya Air disappeared; 3. Airplane crashed, here is the salary of Sriwijaya's pilots; 4. They said good bye last night, no premonition: Family of SJ182 (@aji_surabaya 2021).
Image captured on 28 February 2021.

6.3 Spread of Hoaxes

Greater internet access provides opportunities for everyone to create and spread their

content, particularly on social media. Surveys conducted by the Indonesian Internet

Providers Association (APJII) show a significant increase in the number of internet users in the country (see Figure 6.2). From 16 million (out of a population of 226 million) users in 2010, the number of internet users rose more than twice in 2015 to 42 million (of 241 million). In 2015, the number of users was 88.1 million (out of 258 million), and this had almost doubled to 196.7 million (out of 266 million) in 2019 (APJII 2017, 2019).

In terms of social media users, Indonesia is among the top countries with the highest numbers. In 2020, it had 140 million Facebook users (third rank), 78 million Instagram users (fourth), and 13.2 Twitter user (seventh) (Statista 2020b, 2020c, 2020d). In 2019 Indonesia ranked fourth in the number of WhatsApp users, with 60 million (Iqbal 2021).

Figure 6.2
Growth in the Use of the Internet by the Indonesian Population
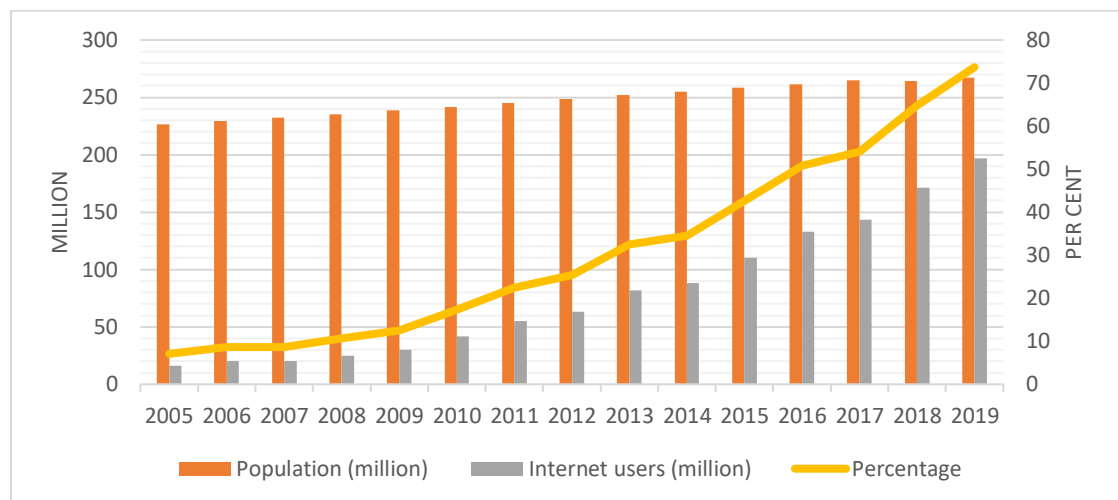
Source: APJII (2017) and APJII (2019)

While social media and messaging applications have become the avenue of democracy, they are also platforms for hoaxes and disinformation. According to Mr Haryanto, News media is facing the rapid development of social media. Social media allows various contents to spread quickly. These contents (especially those widely circulated) are considered reality, even truth. (Interviewee no. 12, March 2019)

Mr Manan also explained:

> People are allowed to write fake news, and there is no code of ethics being
> enforced. There are no specific regulations, for example, the Press Law.
> (Interviewee no. 15, March 2019)

While creating and circulating contents are easy, there is a concern about the lack of
digital literacy in public, as Mr S Nugroho said:

> Many people read information from one source but fail to compare it with other
> sources. Many fail to understand the context of the information and they are
> often caught in clickbait news. So, the lack of literacy makes people lose clarity
> in responding to an issue. (Interviewee no. 17, March 2019)

Political Hoaxes

Mr S Nugroho explained that the Indonesia's political division, which emerged since
the 2014 presidential election[39], has worsened the spread of hoaxes:

> This polarisation fosters hatred and love. Everyone loves the person he chooses,
> and at the same time hates the opponent of the person he loves. Such a person
> will easily believe in hoaxes aimed at attacking a character he hates, or that
> over-glorifies a character he adores. (Interviewee no. 17, March 2019)

The spread of hoaxes had also become a great concern of the Indonesian Press Council.
Its Chairman, Mr Prasetyo, noted that hoaxes became prevalent during significant
political contests:

> The spread of hoaxes and disinformation was so high ahead of the 2014[40]
> general election. It happened again before the Jakarta Governor Election in

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[39] Joko Widodo and Prabowo Subianto were the two presidential candidates in 2014.

[40] In 2014, for the first time in Indonesian history, a presidential candidate emerged not from the Jakarta political circle elites. Joko Widodo was a mayor twice in a small city in Central Java from 2005 to 2012. He should have served until 2015 but ran for the 2012 Jakarta Gubernatorial Election, accompanied by Basuki Tjahaja Purnama (a Christian who was the Regent of East Belitung), defeating incumbent Fauzi Bowo. In 2014, Widodo ran for the Presidential Election and won. In 2008, before Widodo was widely known, he was selected – among other nine mayors and regents – as the best regional leaders by *Tempo* weekly magazine. At that time, I was involved in the *Tempo's* editorial team, who initiated and prepared the report. Political pundits credited Jokowi's sudden popularity to his "blusukan" (frequent impromptu visit to the communities to check government services) (Tapsell 2015). In the years leading to the election, retired Army General Prabowo Subianto was often regarded as the strongest candidate. He won support from major political parties, except PDIP, which supported Widodo. During the 2012 Jakarta election,

2017[41]. And it continues until now [ahead of the 2019 presidential election][42].
(Interviewee no. 12, March 2019)

In 2014, after Widodo's declaration as a presidential candidate, hoaxes and disinformation were circulated to discredit him. Three topics of hoaxes that attacked Widodo were claims that: he was a Christian (Figure 6.3); he had a Chinese background, so he owed allegiance to the Chinese communist government (Figure 6.4); and that he and his father were communist party members and sympathisers (Figure 6.5) (Hearman 2014a; Hearman 2014b; Varagur 2016; Widodo 2014). As a result of continuous political polarisation, these hoaxes were re-fabricated during Widodo's first term in office (Baiduri 2017).

Mr S Nugroho said that political hoaxes have dominated, "mostly in the lead-up to political events such as elections" (Interviewee no. 17, March 2019). In 2018, Nugroho's Mafindo gathered and debunked 997 hoaxes. Almost half of them (448) were related to politics and 119 were related to religions. The remaining 59 items were related to health issues (Mafindo 2018). In its special report, Mafindo noted that while political hoaxes in 2014 mostly attacked Widodo, in 2018 (before the 2019 election), hoaxes also targeted Subianto.

Political themes are the main content of political hoaxes, which peaked in September 2018[43] (38 hoaxes). The issue raised partly repeats the old narrative about Presidential Candidate 1 (and its supporters), starting from Widodo not allowing the call to prayer

Widodo and Purnama were endorsed by Subianto. At that time, Purnama was a member of Gerindra, a political party established by Subianto.

[41] The Jakarta election was considered a continuous battle between parties and groups who supported Widodo and Subianto in 2014. The candidates were incumbent Basuki Tjahaja Purnama (who replaced Joko Widodo upon his inauguration as president) and Anies Baswedan. The latter was supported by Islamic hardline groups, including Islamic Defender Front (FPI). While Widodo's PDIP endorsed Purnama (after he left Gerindra), Anies was endorsed by Subianto. Purnama's Christian background made it easier for him to be framed as a threat to Islam, and he lost the election. Jakarta's election gained national attention because the winner was considered to have a strong chance to run for the presidential election, following the success of Widodo in 2014.

[42] The 2019 Presidential election was a rematch between Widodo and Subianto. As in 2014, Subianto was supported by the Islamic Prosperous Justice Party (PKS) and FPI. This time, Widodo secured support from other major political parties and again defeated Subianto. A few weeks before Widodo's second inauguration, he met Subianto in an MRT station in Jakarta. Both agreed to a reconciliation. Later, Subianto was named as Defense Minister in Widodo's second administration.

[43] On September 21, 2018, the Indonesian General Commission Election drew ballot number for the 2019 Presidential Election. It was also considered as the kick-off of the election (Farisa 2018).

(10 September 2018), Jokowi facilitate Chinese soldiers in Indonesia (18 September 2018), and hate speech banners installed by tadpoles[44] (20 September 2018). Hoaxes against Candidates 2, including claims Prabowo owed 17 trillion in debt (20 September 2018) (Hidayah et al. 2018).

Figure 6.3
Screenshots from Facebook Posts

Left. A Screenshot from a Facebook post "revealing" President Widodo is a Christian. To back up its claim, it included photos of Widodo's inner circle who are Christian (Syafitrah 2019).
Right. Another screenshot from a Facebook post. It shows a Christian preacher blessing Widodo. It suggests that Widodo is Christian because he was involved in a religious practice (Nasution 2016).
Images captured on 5 March 2021.

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[44] "Tadpoles" was the word used by Subianto's supporters to insult Widodo's supporters. While the latter used "small bats" to insult the former (Heriyanto 2019).

Figure 6.4
Screenshots from Facebook and Twitter Posts

Left. A picture of newspaper condolence ad circulated on Facebook and other social media. It pretends that Widodo has died, and he has a Chinese name (Oey Hong Liong). It uses "Herbertus" (widely known as non-Muslim name) for Widodo's first name, instead of Haji (a title for Muslim who had completed pilgrimage to Mecca) (Gunawan 2014).
Right. A post from Twitter account of the ex-Minister of Law and Law Professor, claims that 10 million Chinese worker would arrive in Indonesia (Helsyanto 2016). Image captured on 5 March 2021.

Figure 6.5
Screenshots from Facebook Posts

Left. An image from a Facebook post presenting Widodo's father as a communist commander (Ningtyas 2020).
Right. Young Widodo (circled) attending a communist mass meeting in 1955[45].
Images captured on 5th March 2021.

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[45] The speech occurred in 1955, while Widodo was born in 1962 (Jakarta 2017). The man speaking in the right-hand image is DN Aidit, Chairman of The Indonesian Communist Party (PKI). The Indonesian

Hoaxes Targeting Government Programs and Agencies

According to Mr S Nugroho, in addition to hoaxes targeting political figures, especially Widodo, there were also hoaxes targeting government policies, programs, and ministers (Interviewee no. 17, March 2019). During his first term, Widodo focused on improving infrastructure, which had been the main obstacle to attracting investors (Vaswani 2015). Hence, his infrastructure projects became the target of hoaxes. Hoaxes were also aimed at the Ministry of Finance and the Minister for Finance, Sri Mulyani (Figure 6.6) because they were responsible for preparing money – partly from foreign loans – for the projects, as reported by Mr Sakti, Head of Bureau of Communication and Information Services at the Ministry of Finance, who was also interviewed for this research:

> The most common are hoaxes about state debt. These hoaxes always appear at the beginning of the year, when we announce the state budget, usually from January to February. In addition, there were minister's statements that were quoted in fragments and narrated out of context. The current minister is a public figure, so many people mentioned her and hoped that the content they delivered, including hoaxes, will go viral. (Interviewee no. 8, March 2019)

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government banned PKI and communism in 1965 after the party was accused of attempting a coup and Aidit was sentenced to death.

Figure 6.6

Minister of Finance Sri Mulyani Clarifies a Hoax on Her Instagram Account

Note. The hoax was spread on Facebook, telling that she plans to sell the island of Bali to pay state debt (Kompas 2018).
Image captured on 7th March 2021.

Meanwhile, Mr Yuwono, Head of Public Communication at the Ministry of Public Works and Housing, said that infrastructure projects financed by loans from the Chinese government are prone to becoming the target of hoaxes. Mr Yuwono was interviewed for this study. His agency oversees the implementation of infrastructure construction projects.

> Hoaxes related to projects funded by loans from the Chinese government include, among other things, that all workers are imported from China. Yes, there are workers from China, but not as many as the hoax conveyed[46].
>
> (Interviewee no. 22, April 2019)

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[46] These hoaxes are derivatives of the hoax that portrays President Widodo as having a Chinese background and being loyal to the Chinese communist government. As shown in Figure 6.4, one of the hoaxes said 10 million Chinese blue-collar workers invaded Indonesia. The hoax was widely spread between 2015 and 2016 and the government, including President Widodo, repeatedly denied the rumour. In November 2016, data from the Ministry of Labor revealed that despite Chinese workers making most foreign workers in Indonesia, they were only 21 thousand out of 71 thousand people (Widyanita 2016).

Regarding hoaxes targeting the government, Mr S Nugroho noted that one of the causes was the government not being able to process and present the data in ways that are easy to understand:

> The public does not understand how the government manages data, which raises suspicion. The public also spread hoaxes to one another due to the lack of data on social media. (Interviewee no. 17, March 2019)

In the wake of the Covid-19 pandemic, new hoaxes have disrupted the public. A report from Mafindo noted that from mid-January to mid-March 2020[47], there were 201 hoaxes related to Coronavirus (Astuti 2020). This report found that Facebook (43 per cent), Twitter (25 per cent), and WhatsApp (15 per cent) were the three highest hoaxing platforms. The report also noted that online news media websites disseminated 7 per cent of hoaxes. Furthermore, the Ministry of Communication and Information reported 1402 hoaxes on Covid-19 from January 2020 to January 2021. While some of the hoaxes contained tips or cures related to the pandemic, many of them targeted the government or had religious content (Direktorat Pengendalian Aplikasi Informatika 2021).

Impact of Hoaxes on News Media

The spread of hoaxes was also a concern of Mr Manggut. As mentioned previously, he said news media outlets had to compete with other content creators, including hoaxers. As a result, people cannot tell the difference between news media and other content creators:

> In the end, we are badly affected by the spread of the hoaxes. On social media, our posts are on the same timeline as hoax posts. After people identify hoaxes on the timeline, they might suspect that the content we post was also hoax. (Interviewee no. 14, March 2019)

Moreover, Mr Manan said that not only are news media considered to be the same as hoax spreaders, they are also vulnerable to acting as hoax spreaders themselves:

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[47] The first Covid-19 case in Indonesia was confirmed on March 2nd, 2020 (Gorbiano 2020).

Once the news media is not disciplined in verification, it is very easy to become a channel for propaganda or the spread of disinformation. (Interviewee no. 15, March 2019)

Mr Manan therefore suggested news media should not compete for speed and traffic; instead, they should focus on their expertise:

We have to compete in areas where mainstream media journalists are competent, presenting more accurate information, making information more meaningful to the public, and presenting more attractive and easy-to-understand information. I think those three things are lacking in social media. That is why journalists are required to have new skills so that they can differentiate themselves from social media. (Interviewee no. 15, March 2019)

6.4 Data Journalism to Distinguish Journalism

Mr Manggut said the flood of hoaxes is not an issue that could be addressed by journalism alone. He said fighting against hoaxes is a mission involving the government and tech giants such as Facebook and Google (Interviewee no. 16, March 2019). He noted that people tend to spread hoaxes that are mostly sensational and shocking, rather than genuine information or clarification of hoaxes:

It must be admitted that if we get terrible or exciting information, we are motivated to share that information. However, this is not the case when we get clarifying information. (Interviewee no. 14, March 2019)

Mr S Nugroho said that hoaxes are produced not only for political causes but also for economic benefits:

There was a video confession someone who created and spread hoax in Pontianak [Central Kalimantan Province]. He admitted that he earned IDR300 million to 500[48] million a month by managing several hoax sites. He did not care about the form, type, and theme of the hoaxes he uploaded. The goal is simply to get traffic to generate money[49]. (Interviewee no. 17, March 2019)

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[48] About AUD50,000
[49] In April 2018, an Indonesian district court sentenced Jasriadi, the leader of Saracen group to 10 months in prison. Saracen in one of hate-speech propagator networks with economic motivation (Harahap 2018; Post 2017).

Mr Manan said that the news media could not eradicate hoaxes. However, it could participate in the fight against hoaxes, at least by avoiding being channels for hoaxes:

> We may not be able to prevent people from spreading hoaxes, but we are trying to prevent journalists from doing so. That way, we block one of the spreaders of hoaxes, because I think journalists also spread hoaxes and make the problem even worse. (Interviewee no. 15, March 2019)

In doing so, news media and journalists are encouraged to show their obedience to journalistic principles, instead of prioritising views. Mr Manan said that applying data journalism is one of the efforts the news media and journalists could make in the wake of hoaxes and disinformation:

> One of them is developing data journalism. This is one of the innovations that can be done to face social media. I think this is an innovation that could contribute to the restoration of public trust in journalism. (Interviewee no. 15, March 2019)

Mr Hadad said that data journalism is another form of verification. This because data journalists are required to provide data to support their stories:

> Data presentation is crucial in the proliferation of hoaxes. (Interviewee no. 1, March 2019)

Mr Haryanto said that journalism's role in the digital era had to shift, especially when dealing with social media:

> Journalists need to adapt or perhaps redefine their roles. When dealing with social media, journalists should act as verifiers. (Interviewee no. 12, March 2019)

Mr Rudiantara made a similar comment:

> Mainstream media must improve itself, uphold the code of ethics and professionalism. In my opinion, the mainstream media's role is to become a clearinghouse or filter of information amid the spread of hoaxes. (Interviewee no. 19, April 2019)

Some online news media outlets also saw the spread of hoaxes as an opportunity to show quality journalism and draw the line between journalism and other content creators. Mr Dharmasaputra said:

> Hoaxing is a blessing in disguise for the media industry. The massive spread of hoaxes makes people think that we need a credible media industry. For Katadata, hoaxes give us the opportunity to produce quality content. Media that will survive in the end is media that can supply quality content. Media that does not provide quality content will be washed away by social media waves and hoaxes. (Interviewee no. 11, March 2019)

A similar comment was made by Mr W Nugroho:

> This hoaxing has its positives too. We are grateful for the many hoaxes because this will make the position of journalism clearer. The difference between journalistic and non-journalistic products is getting clearer. (Interviewee no. 5, March 2019)

Among other forms of quality journalism is data journalism. Mr Haryanto noted that data journalism is an innovation that allows the journalist to produce stories that we never imagined before from a pile of data. He said that data journalism is a process to find, select, analyse, tell, and present data (Interviewee no. 12, March 2019). In the midst of hoaxes and controversy, data journalism can also be a tool to find the truth:

> I think the minimal function that data journalism can do is verification. For example, during the presidential election campaign, journalists could examine the claims submitted by candidates. Although the level of data journalism in Indonesia is still modest and it is just starting. (Interviewee no. 12, March 2019)

Since data journalism requires news skills, Mr Haryanto encouraged journalists to adapt to technology:

> Journalism is a profession that demands continued learning, keeping up with the times. (Interviewee no. 12, March 2019)

Mr Tamara of Katadata.co.id said that some of the data journalism produced by his team was in response to hoaxes and disinformation:

Some of the stories we made were aimed to provide clarity. (Interviewee no. 9, March 2019)

Figures 6.7 and 6.8 are examples of the stories mentioned by Mr Tamara. Figure 6.7 is an infographic clarifying the number of foreign workers in Indonesia in the midst of hoaxes claiming 10 million Chinese workers were invading Indonesia. More than 17 thousand internet users have viewed the graphic[50]. Figure 6.8 is an infographic explaining the different between economic crises in Indonesia in 1998, 2008, and 2015. Some people believed the crisis in 2015 was as bad as in 1998.

Figure 6.7
An Infographic Published by Katadata.co.id Responding to Hoaxes

Source: Widyanita (2016)
Image downloaded on 8th March 2021.

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50 On December 30th, 2016, Katadata.co.id produced 33 stories, including the infographic. Of the 33 stories, only four were viewed by more than 10 thousand visitors.

Figure 6.8

An Infographic Published by Katadata.co.id Clarifying Debate Over Economic Turmoil in Indonesia in 2015
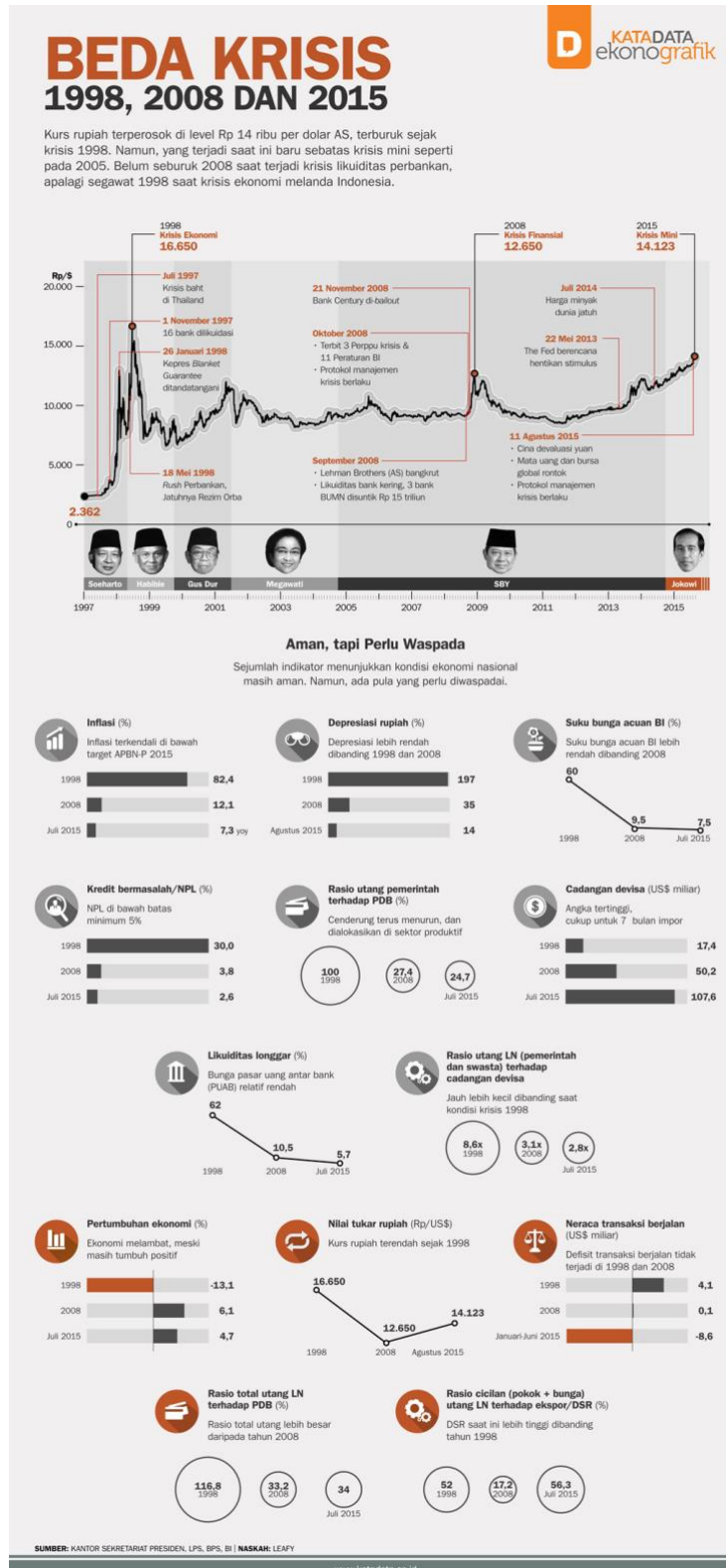
Source: Anjangi (2015)

Image downloaded on 8th March 2021.

As a part of improving the quality of journalism, data journalism has also contributed to the news media organisations developing their business models. Mr Dharmasaputra said data could be converted into revenue:

> We think that data development will become a revenue engine for Katadata.
> (Interviewee no. 13, March 2019)

Mr Dharmasaputra implied that his outlet was developing paid content that can be accessed by subscription.

6.5 Discussion

As described in Chapter 3, the field of journalism has a unique position within field of power. It is located in field of cultural production (Benson 1999), but due to its large-scale production characteristics and its role which can influence other fields, the field of journalism is closer to the economic and political pole (Champagne 2005; Webb, Schirato & Danaher 2001). For this reason, along with its cultural capital, the journalistic field maintains its economic capital, including circulation and advertising revenues (Hesmondhalgh 2006). These types of economic capital lie in the technological field. Search engines and social media offer not only speed but a colossal audience and effective advertising (Brake 2017).

Earlier in this chapter, research participant Mr Manggut was reported as likening Facebook to a big house that news media need to get into it to increase their audience, and that the abilities of social media and web browsers to target audiences, including through advertising, are supported by the data they possess and analyse (Interviewee no. 14, March 2019). From the perspective of Bourdieu's field theory, it can be observed that the field of digital technology extends over the journalistic field. This was illustrated by the comments of Mr Nasution, Mr Dharmasaputra, Mr Manggut, and Mr Manan. Taking advantage of this economic capital, which can be applied in the journalistic field, agents from the technological field are venturing into the news media business, challenging the old players and reaching significant audiences[51].

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[51] IDN Times is among new media outlets that founded by people with technological background. In October 2021, its Instagram account was followed by 2.1 million users, three times bigger than Kompas,

This fact prompted Mr Dharmasaputra to reconsider what the most important journalistic capital is (Interviewee no. 12, March 2019). As quoted earlier, he saw people with robust habitus in journalism and strong grasps of journalistic cultural capital (including intelligent commentary, verification, skilled writing, and great networking) struggle to survive in their media outlets in the digital era. Skills in technology, which allow news media outlets to reach wider audiences and attract advertising, are now more appreciated in journalism. Moreover, the influx of entrants to the journalistic field from other fields is inevitable because there are no substantial entry barriers to entering journalistic field (Schudson & Anderson 2009). For example, unlike the professions of medicine and law, no specific education is required to be a journalist (Skovsgaard & Bro 2011), and in Indonesia, there is no permit needed to establish news outlets on the basis of freedom of speech.

Since audience growth has become essential and is regarded as news value (Kristensen 2021), news media are now "migrating" to social media platforms, creating pages and accounts to reach larger audiences. As well, journalism has to compete with institutions and individuals who have many more advantages, such as famous brand owners, public figures, celebrities, and content creators. As Mr Manggut suggested, the competition is not equal because journalism is bound by a code of ethics binds, while the others are not required to adhere to media laws, ethics, and cyber media guidelines. So news media finds themselves in a giant landfill, which that in the end may damage their credibility (Interviewee no. 14, March 2019).

The case of Youtuber Atta Halilintar and his interview with the Indonesian President Joko Widodo is an example of media inferiority against individuals with millions of followers and whom technology allows to be content creators and disseminators at the same time. Youtubers like Halilitar possess more power to invite public figures in the creation of their content because more audience watched their content, so they generate more money. In contrast, the audiences of news outlets are diminishing, and their

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one of the largest media conglomerations in the country. More about Kompas is discussed in Chapter 5. IDN Times is categorised digital native media, having established by people who grow in digital era (Salaverría 2020).

businesses will continue to be threatened unless they follow the logic imposed by the technology firms (Wu, Tandoc & Salmon 2019b).

Consequently, journalists have had to adjust the values they adhere to. Journalistic doxa – what guides journalists in carrying out their tasks, including the code of ethics – is not unchangeable and can be renegotiated (Tandoc Jr 2013). Mr Nugroho noted that news media apply sensational news to gain more readers, even if it is not the public interest, following the examples set by digital influencers such as Halilintar (Interviewee no. 7, March 2019). Mr Dharmasaputra even said that many the media outlets in Indonesia had given up the journalistic doxa, with journalism now forced to embrace clickbait to attract visitors (Interviewee no. 11, March 2019).

This difficult time for the news media has coincided with Indonesia's fiercest political contestations: the 2014 presidential election, the 2017 Jakarta gubernatorial election, and the 2019 presidential election. Before, during, and after these elections, political disinformation spread rampantly on digital platforms, especially social media. Even news outlets became the target of hoaxes, and they were attacked by what George & Youm (2022) called the "ground forces" of "people power", this includes the public at large or particular groups of people. Lim (2017) argues that during the political contestations, while encouraging people to voice their opinion, social media has become the platform that facilitates hate speech and disinformation. As a result of their fading cultural capital, news media outlets were often caught in the middle of hoaxes, delivering disinformation instead of verifying it.

In addition, as Mr Manggut mentioned, news media content and disinformation were in the same house (social media). A constant flow of disinformation would damage media trust, which is a crucial journalism capital:

> After people identify hoaxes on their social media timeline, they might suspect that the content we post was also hoax. (Interviewee no. 14, March 2019)

Mr Manggut's view echoes recent research that has concluded that the spread of hoaxes harms journalism (Lima-Quintanilha, Torres-da-Silva & Lapa 2019).

Mr Manan said news media should distinguish themselves from other content creators by prioritising stories in the public interest, upholding accuracy, presenting the stories attractively, and ensuring they are easily understood (Interviewee no. 15, March 2019). These are the criteria that fit data journalism. In the wake of media disruption and the spread of disinformation, Mr Manan suggested that adopting data journalism could reinforce journalism and restore public trust in the news media.

Mr Hadad said that by embracing data journalism, the profession would strengthen its role as a verificatory (Interviewee no. 1, March 2019). This view reinforces research findings that adopting data journalism can enhance the ability of news media to interrogate holders of power, improve democracy (Boyles & Meyer 2016; Parasie & Dagiral 2013; Tong & Zuo 2021), and regain public trust (Stalph & Borges-Rey 2018). Furthermore, this shows the characteristic of Indonesian journalists: adhering to ethics, being neutral and precise, and prioritising facts (Hanitzsch 2005; Steele 2011).

From the perspective of field theory, when journalism moves into social media platforms and takes advantage of search engines for visibility, it becomes subordinate to the technological field, leaving itself peripheral within technological realm (Tandoc Jr 2019). Journalism has to negotiate its cultural capital to adjust to the rules in the field of technology. As a result, the distinction between news media and other content producers has faded. With the spread of hoaxes on social media, people might consider news media outlets additional sources of disinformation. Hence, the adoption of data journalism could be perceived as an enhancement of cultural capital in the field of journalism. Upholding this cultural capital would distinguish the journalistic field from others and maintain its level of autonomy.

Adopting data journalism will undoubtedly pose challenges for news media organisations in many aspects. It will require, for example, changing the habitus from traditional journalism to data journalism, managing human resource availability, attracting more viewers, and finding sustainable business models. However, unlike in other studies that indicate media leaders' reluctance to adopt data journalism because it does not generate direct revenue and fit with media business models (De Maeyer et al. 2015; Nduhura 2019), the Indonesian media leaders interviewed for the current study see opportunities to generate income. As Mr Dharmasaputra said:

We think that data development will become a revenue engine for Katadata. (Interviewee no. 11, March 2019)

6.6 Conclusion

This chapter has presented original data illuminating the state of Indonesian online news media as it faces technological advances in the digital era. For news media, technology is a double-edged sword. Technology allows news media outlets to disseminate news immediately. However, social media has introduced complicated problems that concern the sustainability of the news industry and journalism. The participating research participants pointed out how the new social media players have changed the journalistic field, and how technological skills, not strong journalistic backgrounds, now determine the survival of news media in the digital era.

Some participants said that in order to draw the readers, news media outlets need to exist on social media, particularly Facebook. This social media platform is where almost 200 million Indonesian internet users now flock to. With all content creators fighting for their attention, upholding journalistic principles and adhering to codes of ethics has become more difficult because these tend to slow journalistic works. News media outlets are under pressure to prioritise speed over accuracy and exploit sensationalism because they have to compete against social media accounts or content creators that are not regulated by journalistic laws or codes of ethics. Verification, which is the essence of journalism (Kovach & Rosenstiel 2007), has become a liability in terms of speed and cost.

In Indonesia, this situation began evolving during the political divisiveness following the 2014 presidential election, when social media, notably Facebook, polarised the public into two camps. It was loaded with hoaxes and disinformation, undermining or overly glorifying the candidates, to create allegiance or agitation (Rakhmani & Saraswati 2021). The hoaxes also targeted government programs and agencies because these were considered to represent one of the political camps. Some news media outlets went adrift in the hoaxes, but others saw hoaxes as an opportunity to uphold journalism by, among other things, adopting data journalism. Hence, the finding of this chapter has

clearly answered Research Question 1 because it demonstrates the driving factors of the adoption of data journalism in Indonesia.

From the perspective of Bourdieu's field theory, this chapter suggests that the field of journalism in Indonesia has become increasingly dependent on the field of technology, while in the New Order era it depended on the government (Dhakidae 1991). This is because journalism needs to maintain its economic capital, especially "circulation", which is facilitated by social media and search engines. To possess this capital and to adjust to the technological rules, journalists need to negotiate their cultural capital and doxa, including that encapsulated in journalism codes of ethic and news values. Meanwhile, using their advantages (e.g., crowd and targeted advertising) agents from the technological field are encouraged to venture into journalism.

The next chapter presents the findings from an analysis of 50 data journalism artefacts that were collected from five online Indonesian news media outlets. Because, as Mr Haryanto said, data journalism in Indonesia is still considered new and shallow (limited to presenting and clarifying data, instead of as a tool to support the investigative journalism project) (Interviewee no. 15, March 2019), Chapter 7 will only discuss the infographics which are considered as the simple form of data journalism.

Chapter 7

Content Analysis of Selected Data Journalism Projects

In Chapter 6, I situated journalism in Indonesia in the wake of the technological disruption to the fundamentals of the media business and I discussed how the media outlets have responded. To survive in the digital era, some news media outlets prioritised speed over verification and adopted clickbaiting. This happened during the nation's high political polarisation from 2014 to 2019, a period when hoaxes and disinformation were rampant on social media and messaging platforms. While many journalists realised data journalism would be no silver bullet, some news outlets adopted it as the way forward.

Before exploring the adoption of data journalism in the five media outlets in Chapters 8 and 9, this chapter will present a content analysis of 10 infographics from each outlet. This analysis shows the particularity of data journalism projects retrieved from the five media news organisations. Some details of data journalism artefacts that will be highlighted are data sources, people (in terms of number and type of expertise) involved in their production, and how data is presented. This chapter contributes to answering Research Question 2: "How do media outlets in Indonesia adopt data journalism?" by exploring an output of data journalism and showing how each news outlet has its own characteristics.

Data journalism is evident in many forms of journalistic projects. However, the infographic is the most common type adopted by news outlets (Knight 2015).

> Overall, infographics, graphs, chart, static maps and pullquotes were the most common form of data information presented, with little variation among them. (p. 62)

Kompas.com (Kompas), Tempo.co (Tempo), Katadata.co.id (Katadata), Tirto.id (Tirto), and Lokadata.id (Lokadata) are among the newsrooms in Indonesia that produce infographics regularly. Taking account of Katadata's experience when publishing their

infographic during the fuel price debate in the country in 2014, as mentioned in Chapter 1, an infographic is a powerful way to disseminate a complex message because, by containing various visual resources, it is eye-catching and easy to understand and share. By helping an audience digest information, it generates more appreciation (De Haan et al. 2018). Moreover, infographics have been proven to be effective in combatting misinformation during vaccine rollout (Domgaard & Park 2021).

The infographics examined in this research were retrieved from two-constructed weeks during the second half of 2019. Each week consisted of five days, which made ten days in total. Although an outlet could produce more than one graphic per day, I took ten infographics (one per day) as the sample to avoid data overwhelm. During the selected period (130 days, excluding weekends and holidays), Kompas published 310 infographics, Tempo 230, Katadata 140, Tirto 819, and Lokadata 113.

Key elements of data journalism stories are numbers and statistics, presented using maps, bars, charts, images, and other graphics (Rogers 2012; Royal & Blasingame 2015). Some infographics from the five media outlets did not meet the standard, so they were excluded from this study. From the two-constructed weeks, I retrieved 12 infographics from Kompas, ten from Tempo, 12 from Katadata, ten from Tirto, and ten from Lokadata. Because there was more than one graphic in Kompas and Katadata on two selected days, I picked one published earlier on those days.

7.1 Content Analysis of Each News Media Outlet

Kompas.com

Kompas did not have a specific infographic or graphic tab or channel on its website. To find the infographic index on the site, I had to type the "infografik" (Indonesian for infographic) keyword on its search engine. At the top of the search results was a link "Berita Harian Infografik Terbaru Hari Ini/Today's Latest Infographic Stories" (https://www.kompas.com/tag/infografik) that took me to the infographic index, as shown in Figure 7.1. So, instead of a dedicated channel, Kompas's infographics were marked with a hashtag (#) "infografik". However, when I visited each of the graphics, they were under the "Tren" (Indonesian for "trend") tab (Figure 7.2). After clicking the

tab, I found that not all of the content was infographics. The index showed that Kompas published its first infographic on its website on August 20, 2014.

Figure 7.1
A Screenshot from Kompas Website
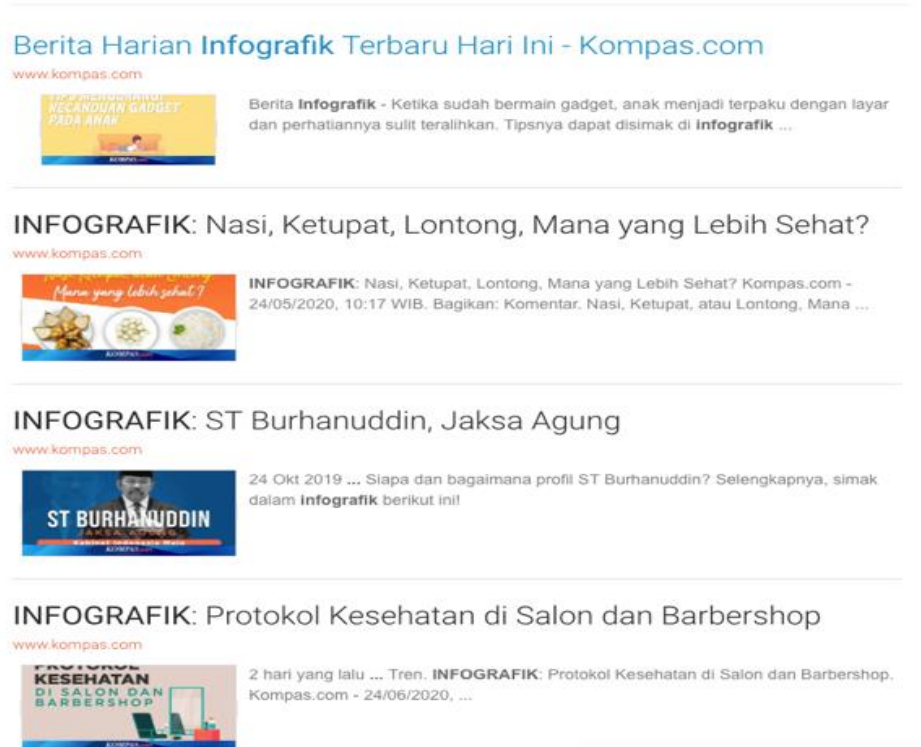
Image captured on 28th February 2020

Figure 7.2

A Screenshot from Kompas Website

Image captured on 28th February 2020

Table 7.1

Ten Infographics from Kompas

Day	Week	Date	Title
Monday	39	23 Sep	14 Celebrities in the House of Representatives
Tuesday	42	15 Oct	Facts on Jabodebek LRT to be Operated in 2021
Wednesday	48	27 Nov	Farewell, Mr Ciputra…
Thursday	40	12 Dec	BPJS Kesehatan Premium Increase from 2020
Friday	32	8 Nov	Top 10 Wealthiest People in the World
Monday	44	28 Aug	Safe Salt Intake
Tuesday	27	2 Jul	Transport Options to Kertajati Airport
Wednesday	33	14 Aug	9 New Toll Roads to be Operated in 2019
Thursday	36	5 Sep	Virgil van Dijk, the 2019 European Best Footballer
Friday	35	30 Aug	Head-to-head Indonesia Vs Malaysia

Despite Kompas being a general-interest news outlet that primarily publishes political, legal, and social stories, five out of the ten infographics covered economic issues (Table 7.2). Of these five, three focused on government infrastructure projects, which were the priority of Widodo's administration during his first term in office. In contrast, only one graphic discussed politics. The other four focused on health (2) and sport (2). In terms of tone, all of the infographics were neutral.

Table 7.2

Topic of Infographics from Kompas

Topic	Number of infographics
Economy/energy	5
Health	2
Sport/entertainment	2
Politics/law/social	1

In each of the graphics, the "infografik" was attributed to a name. Two people shared attributions from the ten infographics: Dhawam Pambudi (three graphics) and Akbar Bhayu Tamtomo (seven). Outside the graphics, these people were also named writers (*penulis*). To find out the exact role of each in creating the infographics, I contacted Mr Pambudi and asked him to clarify. Mr Pambudi said that he was the person in charge of designing the graphic. His name was mentioned as the writer because he also prepared the infographic drafts, which were the materials gathered from articles in Kompas. The drafts were approved by an editor, whose name was also located outside the graphics under the title of the accompanying article.

Infografik, writer, and editor (the latest two located outside the graphic) consistently appeared in the selected Kompas's graphics. In the six infographics that had photos, the names of photographers were acknowledged. There were ten external photographers and eight internal. Although their names were mentioned, the photographers were not involved in creating the infographic. It is a common practice in the newsroom that images are retrieved from an internal database, and photographers who store their photos on the database usually do not know who in the newsroom will use the photo or for what project. Therefore, I conclude that the production of infographics in Kompas involved designers, writers, and editors. Since the writer and designer were the same person, two people, excluding the photographers, actively created one infographic. Table 7.3 shows the number of people and their roles in producing infographics in Kompas.

Table 7.3

Roles and Number of People Involved in the Production of Infographics in Kompas

Position/role	Number of people
Designer/writer*	10
Editor**	10
Photographer	8
Total	**28**

Designer and writer are the same person.
**Located outside the graphic.*

Data from nine out of ten infographics in Kompas were generated internally (Table 7.4). This means the writers collected the information or data from Kompas's website. According to Mr Pambudi, the data were gathered by reporters who published it in a conventional (written) news story. In addition to using internal data, one story used data from other news media outlets. Another story sourced two foreign institutions providing the 2019 European best soccer player profile. As shown in Table 7.5, from the ten graphics, eight had a single source, one graphic had two sources, and one had more than two sources.

Table 7.4

Sources of Data and Their Occurrences in Ten Infographics from Kompas

Data sources	Occurrences
Own source	9
Other news outlets	2
Foreign	2
Total	**13**

Table 7.5

Sources in Kompas's infographics

Number of sources	Number of stories
1	8
2	1
More than 2	1
No sources	-

Since most of the graphics were about the economy, including infrastructure, the dominant types of data were financial (four), industrial (four), and geodata (three). Other types of data that were often used included biodata (two) and survey/poll/election (two). Biodata was used to present information about an individual and their achievement, for example, "Farewell, Mr Ciputra…", which paid tribute to Mr Ciputra, one of Indonesia's real estate magnates, who had died. Table 7.6 indicates the type of data and their appearances in the ten Kompas' infographics.

Table 7.6
Types of Data and Their Occurrences in Ten Infographics from Kompas

Types of data	Occurrences
Financial	4
Industrial	4
Geodata	3
Biodata	2
Survey	2
Health and sciences	1
Other	1
Total	**17**

Although no illustrator was involved in the production of Kompas' infographics, five graphics had illustrations (Table 7.7). Photos were also one of the most frequent visual resources used in Kompas (five graphics). Other visual resources were charts (two graphics) and pictograms/logos (two). On average, every graphic from this news outlet deployed more than one (1.4 each) visual resource. Four infographics were complemented with two visual resources, and two of them dealt with infrastructure (economy), namely, "Facts on Jabodebek LRT to be Operated in 2021" and "Transport Options to Kertajati Airport".

Table 7.7
Visual Resources and Their Occurrences in Ten Infographics from Kompas

Visual resources	Occurrences
Illustration	5
Photo	5
Chart	2
Pictogram/logo	2
Total	**14**

The graphics were in portrait format and accompanied by a short article of less than 500 words, which was placed outside the graphics. In terms of interactivity, Kompas only provided a comment box for its audience's comments. It also included Facebook and Twitter icon buttons to allow readers to share the infographics on social media.

Tempo.co

Tempo dedicated a specific tab called "grafis" (Indonesian for graphic) on its website. The ten latest infographics and the five most popular ones were on the tab. If readers wanted to obtain previous editions, they had to go the "index" tab (Figure 7.3) and select the the desired date of publication and "infografis" channel (Figure 7.4).

Figure 7.3
A Screen Capture from Tempo Homepage Showing Tabs, Including "Grafis" (Blurred) and "Indeks"

Image captured on 28th March 2020.

Figure 7.4

The Index Page to Search Previous Stories on Tempo
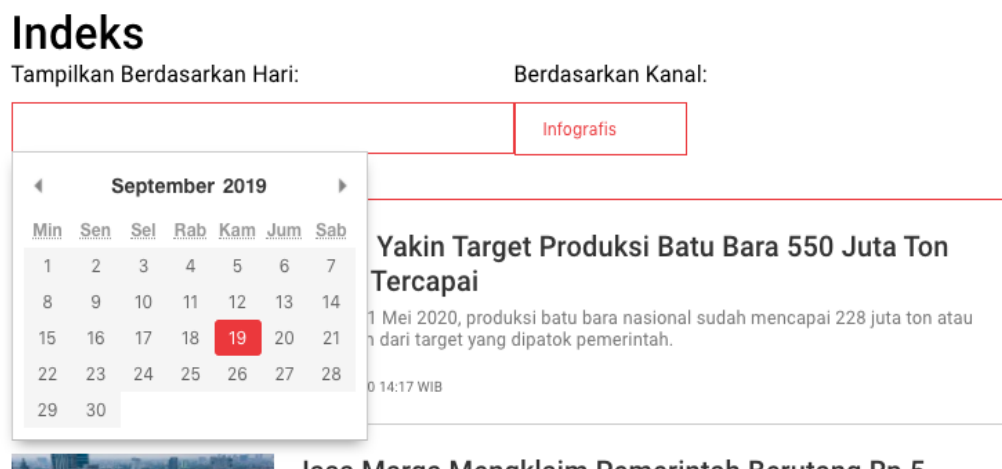
Image captured on 28th March 2020.

Table 7.8

Ten Infographics from Tempo

Day	Week	Date	Title
Monday	34	19 Sep	Police Named 4 Companies as Suspect in Forest Fire
Tuesday	31	30 Jul	Reports of Sexual Violence Against Women are Still High
Wednesday	32	7 Aug	Retail Businesses Lost Hundreds of Billions due to Blackout
Thursday	42	17 Oct	Palapa Ring to be Completed within 14 Years
Friday	49	6 Dec	Impact of Screen Time on Children and How to Control it
Monday	46	11 Nov	Formation of the 2019 CPNS (civil servant)
Tuesday	40	1 Oct	Riots in Waena and Wamena, 33 Died Caused by Hoaxes
Wednesday	39	18 Sep	Hundreds of Thousands Suffer from Respiratory Disorders Caused by Forest Fire
Thursday	29	18 Jul	Distributing Minister's Seats in Widodo's Administration
Friday	41	11 Oct	One Price Fuel Program, the Government Exceeds the Target Number of Distributors

Table 7.8 shows ten infographic titles from Tempo and their publication dates. In line with its general interest news outlet's nature, half of the infographics retrieved from Tempo presented politics, law, or social issues (Table 7.9). However, economic issues were still considerable, with three infographics. Two infographics contained health

issues. In terms of the tone, five infographics were critical of the government or an event (Table 7.10), among them "Distributing Minister's Seats in Widodo's Administration". This graphic showed that the president had to accommodate political parties supporting him when formatting the new cabinet based on their votes in the parliamentary election. The original title of the graphic used "jatah" (ration/portion), which has a negative meaning in political practice in Indonesia. The only supportive story was an infographic about the single price fuel policy ("One Price Fuel Program, the Government Exceeds the Target Number of Distributors"), which met the distribution target. The word "berhasil" (successful) was repeatedly used in this graphic.

Table 7.9
Topic of Infographics from Tempo

Topic	Number of infographics
Politics/law/social	5
Economy/energy	3
Health	2

Table 7.10
Tone of Infographics from Tempo

Tone	Number of infographics
Critical	5
Neutral	4
Supportive	1

Regarding the producers of the infographics, one name consistently appeared outside the graphics. This was Moerat Sitompul, and there was no attribution to identify his role. In Tempo's masthead, Mr Sitompul was named the Head of Medialab. Mr Sitompul told me that Medialab is a Tempo Group unit tasked with creating innovation to respond to technological changes. During his interview for this research, Mr Sitompul said he considered himself a journalist.

Apart from Mr Sitompul's role, other names appeared in the graphics. These were the photographers, writers, researchers/data analysts, editors, illustrations, and designers. However, similarly to Kompas, I have excluded the photographers because they were not actively involved in creating infographics. It is worth mentioning that the

infographic "Retail Businesses Lost Hundreds of Billions Due to Blackout" was a collaboration of six writers, a designer, and Mr Sitompul. Meanwhile, "Formation of the 2019 CPNS" involved the most roles: an illustrator, a researcher, a graphic designer, an editor, and Mr Sitompul. On average, not including the photographers, one infographic in Tempo was a collaboration of 2.7 persons. Table 7.11 shows the number of people and their roles in producing infographics in Tempo.

Table 7.11
Roles and Number of People Involved in the Production of Infographics in Tempo

Position/role	Number of people
Writer	8
Designer	4
Editor	2
Photographer	2
Researcher/data analyst	2
Illustrator	1
Unspecified*	10
Total	**29**

*Located outside the graphic

Table 7.12 shows that Tempo mostly relied on the government as a source of data. Five of the ten selected graphics used data provided by government institutions or agencies, and two of these five used data from two different government institutions. Other sources were foreign (one occurrence) and other Indonesian news media (one).

Table 7.12
Data Sources and Their Occurrences in the Production of Infographics in Tempo

Data sources	Occurrences
Government	7
Own sources	3
Foreign	1
Other news outlets	1
Total	**12**

It is important to note that two infographics did not mention a source, namely, "Riots in Waena and Wamena, 33 Died Caused by Hoaxes" and "Distributing Minister's Seats in

Widodo's Administration". Four infographics had one source, and the other four had three (Table 7.13). Table 7.14 indicates that industrial and "other" data appeared in three graphics, followed by financial (two), survey/poll/election (two), and health and science (two).

Table 7.13
Sources in Tempo's Infographics

Number of sources	Number of stories
1	4
2	4
More than 2	-
No sources	2

Table 7.14
Types of Data and Their Occurrences in Ten Infographics from Tempo

Types of data	Occurrences
Industrial	3
Health and sciences	2
Financial	2
Survey/poll/election	2
Event/field reporting	1
Other	3
Total	**13**

Tempo deployed charts, pictograms/logos, photos, illustrations, and maps to present the infographics (Table 7.15). Charts and maps were the most frequent visual resources, appearing in six graphics. These were followed by maps (five) and pictograms/logos (four). "One Price Fuel Program, the Government Exceeds the Target Number of Distributors" had all five visual resources. The other four stories contained three visual resources, including a graphic about a telecommunication infrastructure: "Palapa Ring to be Completed within 14 Years". On average, one infographic in Tempo had more than two (2.4) visual resources.

Table 7.15

Visual Resources and Their Occurrences in Ten Infographics from Tempo

Types of visualisation	Occurrences
Chart	6
Illustration	6
Map	5
Pictogram/logo	4
Photo	3
Total	**24**

The graphics were presented in different formats, seven graphics were portrait, and three were square. They were all accompanied by a short article, less than 500 words, placed outside the graphics. Tempo allowed its readers to comment. Sharing was accommodated by following social media and messaging applications, including Facebook, Twitter, WhatsApp, Line, and dozens of others (none of which is mentioned in my coding frameworks).

Katadata.co.id

Katadata had a specific tab called "Jurnalisme Data" (Data Journalism) (Figure 7.5). A visitor would use the tab to locate its data journalism projects, which consisted of "Infografis" (infographic) and "Analisis" (analytic) (Figure 7.6). The "Infografis" tab loaded the 28 latest infographics and five most popular. To navigate the previous graphics, readers would need to scroll down and click the "Tampilkan lebih banyak" (load more).

Figure 7.5

A Screen Capture from Katadata's Homepage Showing The "Jurnalisme Data" Tab
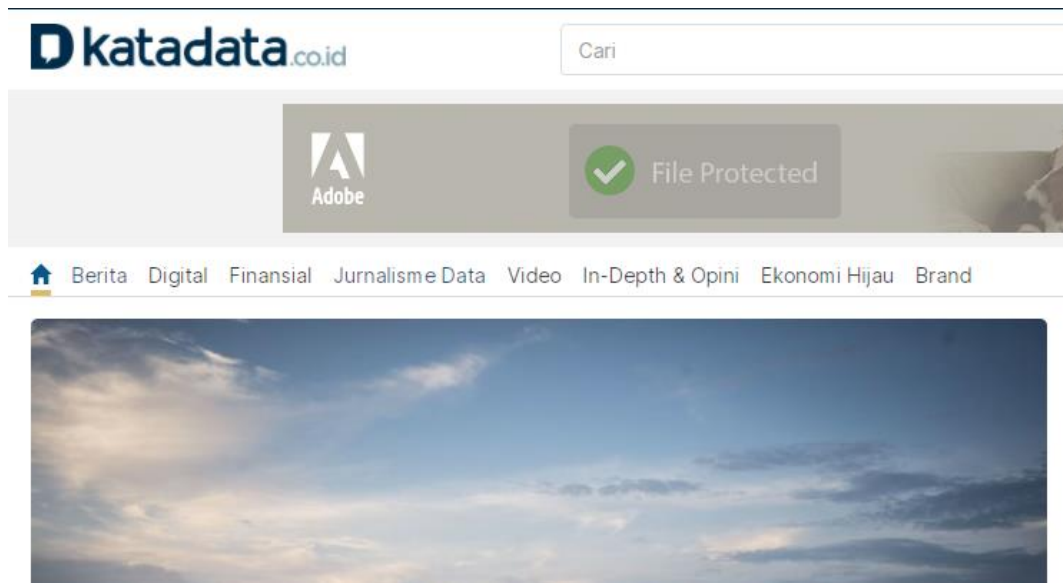
Image captured on 2nd April 2020.

Figure 7.6

Screen Capture from Katadata's "Jurnalisme Data" Page
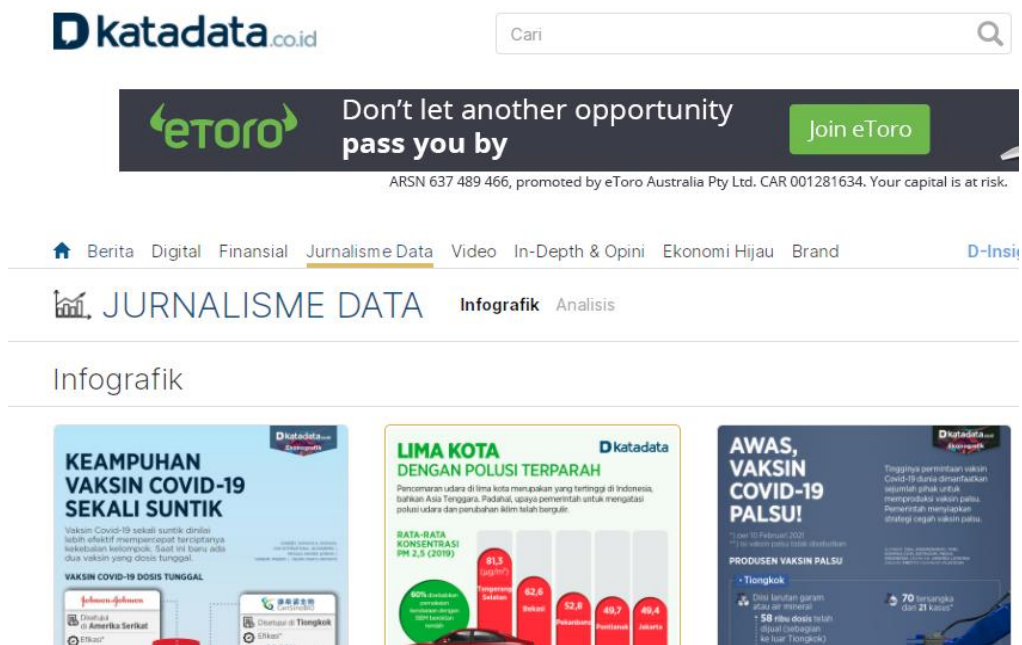
Image captured on 2nd April 2020.

Table 7.16

Ten Infographics from Katadata

Day	Week	Date	Title
Monday	34	19 Aug	The unicorn hunters
Tuesday	32	6 Aug	Chaos in Java due to the power outage
Wednesday	45	6 Nov	Mental health problem in Indonesia
Thursday	38	19 Sep	Indonesia's Investment problems, according to the World Bank
Friday	51	20 Dec	The cause of Indonesia's low education quality
Monday	35	26 Aug	Indonesian unicorn expansion
Tuesday	31	30 Jul	The deadliest earthquakes and tsunami in Indonesia in the last two decades
Wednesday	42	16 Oct	Indonesia's digital economy is the largest in Southeast Asia
Thursday	30	25 Jul	5 stages of telecommunications networks evolution
Friday	47	22 Nov	Foreign investment in Indonesia's banking

Table 7.16 shows ten infographic titles from Katadata and their publication dates. Six out of ten infographics from Katadata covered economics and business issues (Table 7.17). This corresponded with the media outlet's speciality in economics and business (Katadata 2020). Each of the other four other graphics fell to politics/law/social, technology, health, and others. Regarding the tone, seven infographic stories were considered neutral, and three were critical (Table 7.18). Among the critical stories was "Indonesia's Investment Problems According to the World Bank". The graphic highlighted the poor investment climate in the country, using data from the World Bank, by employing negative connotations such as "minus", "risky", "complicated", "uncompetitive", "unpredictable", "inconsistent", and "contradictive".

Table 7.17

Topic of Infographics from Katadata

Topic	Number of infographics
Economy/energy	6
Politics/law/social	1
Health	1
Other (natural disaster)	1
Technology	1

Table 7.18

Tone of Infographics from Katadata

Tone	Number of infographics
Neutral	7
Critical	3
Supportive	-

Each infographic involved a writer, designer, and editor in its production. The editor's name was located outside the graphics. An illustrator contributed to creating three graphics: "Chaos in Java Due to the Power Outage", "The Deadliest Earthquakes and Tsunami in Indonesia in the Last Two Decades, and "5 stages of Telecommunications Networks Evolution". The first of these acknowledged the editor and a writer outside the graphic, making it the most collaborative project, involving five people from four different areas of expertise: writer (two), illustrator, designer, and editor. In Katadata, at least three people were actively engaged in infographic production. The average number of people involved in one infographic was 3.4. Table 7.19 shows the number of people and their roles in producing infographics in Katadata.

Table 7.19

Roles and Number of People Involved in the Production of Infographics in Katadata

Position/role	Number of people
Designer	10
Editor*	10
Writer	10
Illustrator	3
Unspecified*	1
Total	**34**

*Located outside the graphic

Table 7.20 shows that Katadata sourced data 32 times (3.2 per story), 14 of them foreign sources. Some graphics discussed local content such as "The Cause of Indonesia's Low Education Quality" and "Indonesian Unicorn Expansion". Six infographics used foreign data. Moreover, "5 Stages of Telecommunications Networks Evolution" used data from five foreign institutions. Other significant data sources for Katadata were government (seven) and other news outlets (seven). All in all, there were

five different sources of data used by Katadata: the government, private corporations, own source, other news media outlets, and foreign institutions.

Table 7.20

Sources of Data and Their Occurrences in Ten Infographics from Katadata

Data sources	Occurrences
Foreign	14
Government	7
Other news outlets	7
Private corporation	3
Academic	1
Total	**32**

In terms of the number of sources per graphics, six infographics had three sources or more, two graphics had two sources, and one graphic had a single source (see Table 7.21). Corresponding to most of the topics, industrial and financial data appeared most often, seven and four times respectively (Table 7.22). Data surveys or polls were also significant; they appeared four times in ten infographics, followed by demographical data (three times).

Table 7.21

Sources in Katadata's Infographics

Number of sources	Number of stories
1	1
2	3
More than 2	6
No sources	-

Table 7.22

Types of Data and Their Occurrences in Ten Infographics from Katadata

Types of data	Occurrences
Industrial	7
Financial	4
Survey/poll/election	4
Demography	3
Economic indicators	2
Health & Science	1
Event/field reporting	1
Total	**22**

Table 7.23 indicates that the pictogram was the most frequently used type of visual resource in Katadata's graphics. It appeared in all infographics, followed by illustrations (seven), charts (four), photos (3), and maps (2). Six infographics had three visual resources. On average, a graphic in Katadata had more than two visual resources (2.6). The format of the graphics was portrait, and each was accompanied by a short article, less than 500 words, which was placed outside the graphic. While the outlet did not provide room for commenting, it encouraged sharing through Facebook, Twitter, and LinkedIn.

Table 7.23

Visual Resources and Their Occurrences in Ten Infographics from Katadata

Types of visualisation	Occurrences
Pictogram/logo	10
Illustration	7
Chart	4
Photo	3
Map	2
Total	**26**

Tirto.id

The infographics on Tirto were located in a specific channel called "Infografik". From its home website, visitors had to scroll down to find the channel (Figure 7.7). On the upper right corner of Figure 7.7, the "Lihat Semua" (see all) tab would bring readers to the latest 30 infographics. Despite having a dedicated channel, infographics on Tirto were a part of in-depth reports (long-form journalism) of about 1500 words each.

Figure 7.7

A Screen Capture from Tirto Homepage Showing "Infografik" Index
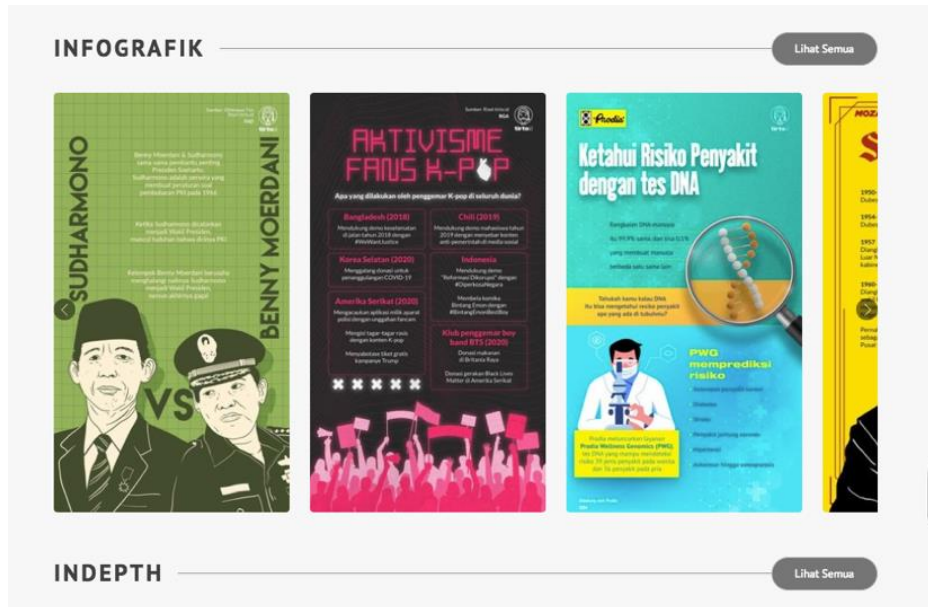
Image captured on 15th April 2020.

Table 7.24

Ten Infographics from Tirto

Day	Week	Date	Title
Monday	38	16 Sep	Impact of Forest Fire
Tuesday	35	27 Aug	Trends in world economic growth and Indonesia
Wednesday	36	4 Sep	Roberto Firmino
Thursday	52	26 Dec	Indonesian police problematic performance in 2019
Friday	31	2 Aug	Indonesia-China trade
Monday	43	21 Oct	Countries threatened by recession
Tuesday	50	10 Dec	Lords of the andesite rock
Wednesday	46	13 Nov	Alternative recovering for Jiwasraya
Thursday	37	12 Sep	The 1984 Tanjung Priok incident chronology
Friday	30	26 Jul	Voice command feature

Table 7.24 shows ten infographic titles from Tirto and their publication dates. Economic issues dominated half the sample of Tirto infographics (Table 7.25). The rest were politics and law (two), health, sport, and technology. Four infographics criticised the government or highlighted problems (Table 7.26). One of them was "Polri's Problematic Performance in 2019". This infographic questioned a budget increase for

the Indonesian police, listing some police actions that drew public outcry. Another example was "Lords of the Andesite Rock", which said that local government revenue from andesite rock was insignificant. An article accompanying the graphic argued that the revenue was minuscule compared to the social and health problem caused by the quarrying activities.

Table 7.25
Topic of Infographics from Tirto

Topic	Number of infographics
Economy/energy	5
Politics/law/social	2
Health	1
Sport/entertainment	1
Technology	1

Table 7.26
Tone of Infographics from Tirto

Tone	Number of infographics
Neutral	6
Critical	4
Supportive	-

In terms of the creators, there was consistency in Tirto's infographics. There was only one initial inside each graphic, which I had expected to be the writer, but it turned out to be the designer. During an interview, Mr Aulia Adam, Tirto's writer who accompanied his colleague, Ms Wan Ulfa Nur Zuhra, one of this research participants, told me that the text for the graphics was prepared by the writer of the accompanying article (the in-depth report). Hence, the writer's name was put outside the graphics at the beginning of the article. Table 7.27 shows the number of people and their roles in producing infographics in Tirto.

Table 7.27

Roles and Number of People Involved in the Production of Infographics in Tirto

Position/role	Number of people
Designer	10
Editor*	10
Writer*	10
Total	**30**

*Located outside the graphic

Data for five infographics in Tirto were obtained from foreign sources (Table 7.28). While Tirto relied on the government data (four), it also used data provided by their reporter, which was already published on the website (four). Also, as Ms Zuhra said during her interview, reporters and writers were encouraged to create a database, either data collected manually from reporting premises or the internet. Regarding the number of sources, eight stories had one source, one story had two sources, and another had more than two sources (Table 7.29). Table 7.30 shows that the most common data type was financial, in line with the topic. Other types of data that were prevalent were economic indicators (three).

Table 7.28

Sources of Data and Their Occurrences in Ten Infographics from Tirto

Data sources	Occurrences
Foreign	5
Government	4
Own source	4
Total	**13**

Table 7.29

Sources of Infographics from Tirto

Number of sources	Number of stories
1	8
2	1
More than 2	1
No source	-

Table 7.30

Types of Data and Their Occurrences in Ten Infographics from Tirto

Types of data	Occurrences
Financial	4
Economic indicators	3
Industrial	2
Event/field reporting	2
Survey/poll/election	2
Biodata	1
Health &science	1
Total	**15**

Table 7.31 indicates illustrations were present in five infographics, making these the most common visual resources applied in Tirto's infographic. Other visual features were photos (three), charts (three), and pictograms/logos (one). Three graphics from Tirto contained two visual resources, and the rest had one. The format of the graphics was portrait, and, as mentioned earlier, the infographic was part of long-form journalistic work. Tirto did not provide tools for interactivity, but it allowed readers to share the stories on Facebook, Twitter, and Linked In, and it provided a shortcut to email and copy the link.

Table 7.31

Visual Resources and Their Occurrences in Ten Infographics from Tirto

Types of visualisation	Occurrences
Illustration	5
Photo	3
Chart	3
Pictogram/logo	1
Total	12

Lokadata.id

To find infographics in Lokadata, a visitor would have to go to its homepage main menu, then select the "Multimedia" tab, which would bring them to the Multimedia page (Figure 7.8). The infographics tab was located on the multimedia page, along with Video, Siniar (podcast), Komik (Comic), and Kartun (Cartoon). On the infographic

page, Lokadata presented its nine latest infographics. Clicking the "tampilkan lebih banyak" (load more) gave access to the previous infographics.

Figure 7.8
Main Menu on Lokadata's Homepage
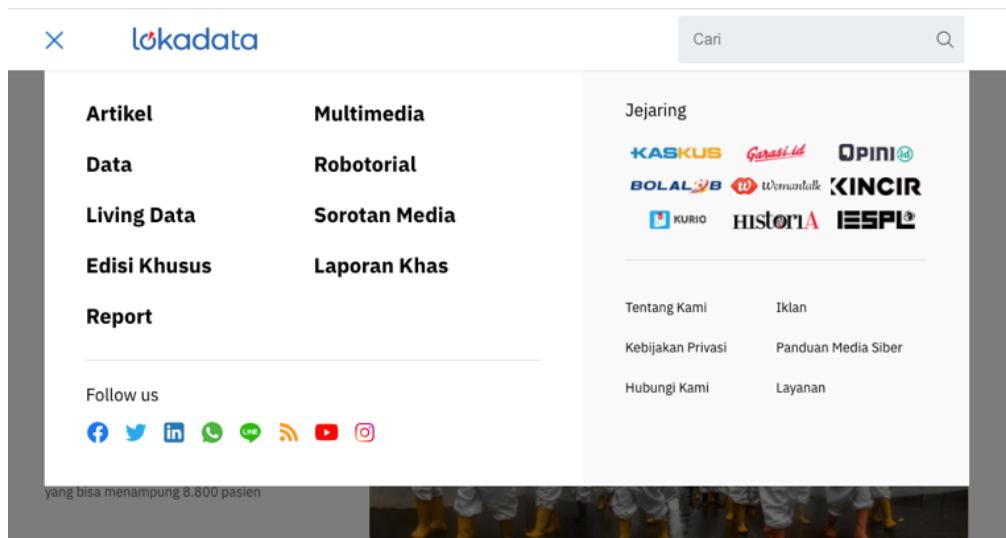
Image captured on 24th September 2021.

Figure 7.9

Infographics in Lokadata's Multimedia Page
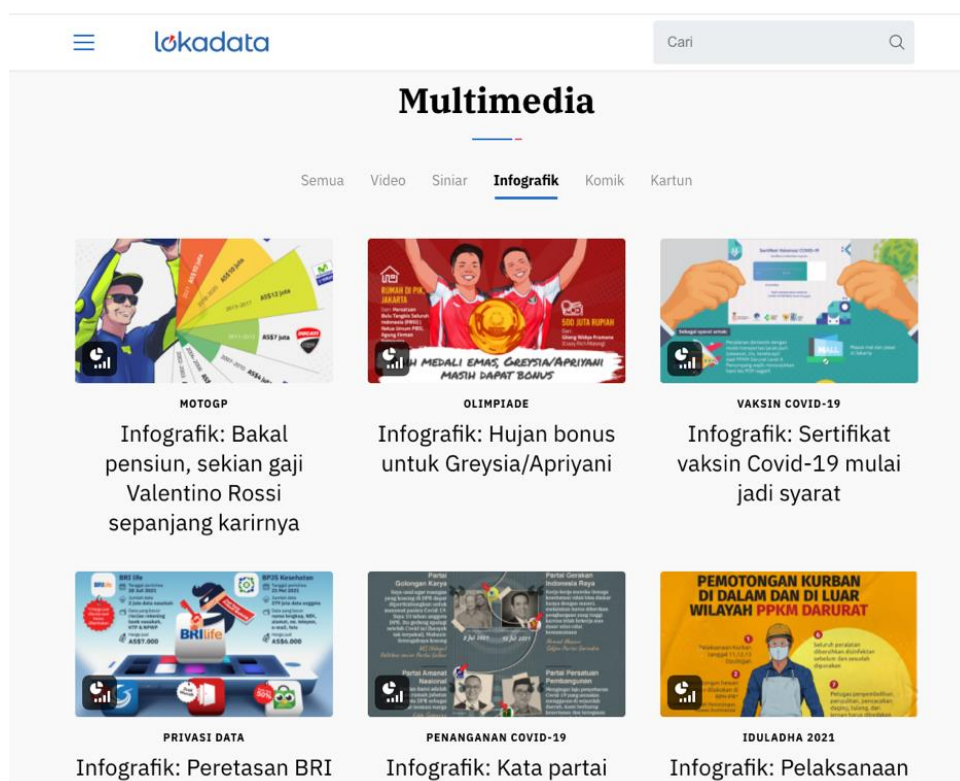
Image captured on 24th September 2021.

Table 7.32

Ten Infographics from Lokadata

Day	Week	Date	Title
Monday	27	1 Jul	The rise of sharia motorcycle taxis, protecting women and promoting religion
Tuesday	25	23 Jul	Withdrawing money that is mistakenly deposited into your bank account
Wednesday	47	20 Nov	1,000 civil servants will work remotely, picnic is allowed
Thursday	32	8 Aug	Can the authority enforce law on motorcycle taxi
Friday	43	2 Aug	Adding more ministers but expecting a slim organisation
Monday	49	2 Dec	Ahok's challenges in the state oil company
Tuesday	42	10 Dec	Hagibis, the high category cyclone destroyed Japan
Wednesday	28	13 Nov	Pros and cons of PUBG (an online multiplayer battle royale game)
Thursday	45	12 Sep	Indonesia joins the world's biggest trade partnerships
Friday	37	26 Jul	Fear of the influx of foreign workers

Table 7.32 shows ten infographic titles from Lokadata and their publication dates. As shown in Table 7.33, infographics about economy/energy and politic/law/social each occupied four out of the ten stories from Lokadata. Two other infographics were about technology and other (natural disaster). In terms of tone, seven infographics were neutral, two were critical, and one was supportive (Table 7.34). One infographic, "Adding More Ministers, While Expecting a Slim Organisation", criticised the creation of new deputy ministers in Joko Widodo's administration even though the president had committed to having a slim and effective cabinet. The other, "Can the Authority Enforce Law to Motorcycle Taxi", highlighted the habits of motorcycle taxis, which often stop on the roadside in a big platoon to wait for passengers, thus blocking the road and causing congestion. The first infographic used a pejorative phrase in its title inside the graphic, "Jokowi's streamline style", and compared the number of deputy ministers in previous (three) and current administrations (12). The only supportive graphic was about the government's plan to allow civil servants to work remotely from tourist destination areas, "1,000 Civil Servants Will Work Remotely, Picnic Is Allowed". This contained the sentence, "There are disadvantages, but work from office also has disadvantages."

Table 7.33
Topic of Infographics from Lokadata

Topic	Number of infographics
Economy/energy	4
Politics/law/social	4
Technology	1
Other (natural disaster)	1

Table 7.34
Tone of Infographics from Lokadata

Tone	Number of infographics
Neutral	7
Critical	2
Supportive	1

Outside each infographic was listed the role of an unspecified person (Table 7.35).

These could be editors or writers. In infographic number 6, titled "Ahok's Challenges in the State Oil Company", for example, Mr Dwi Setyo Irawanto is the unspecified person. Mr Irawanto was Lokadata's Editor-in-Chief and one of this study's research participants. All infographics had designers and, except for infographic number 9, writers. Three infographics (numbers 2, 3 and 4) were created by one person, who acted as unspecified (without an attribution), writer, and designer. Some other people also had a double role, for example, "Fear of the Wave of Foreign Workers" in which the writer and designer is the same person, and "Pros and Cons of PUBG", in which two people acted as writer and data analyst. Selected infographics from Lokadata did not show an illustrator in their by-lines. This is because they used free visualisation resources such as Freepic and Shutter. Lokadata employed 23 people for ten infographics or 2.3 people per graphic.

Table 7.35
Roles and People Involved in the Production of Infographics in Lokadata

Position/role	Number of people
Writer/analyst**	4
Writer/designer**	4
Designer	3
Writer/designer/unspecified**	3
Analyst	1
Writer	1
Unspecified*	7
Total	**23**

*Located outside the graphic
**Multiple roles played by a person

Only two of Lokadata's infographics mentioned their sources, namely, "The Rise of Sharia Motorcycle Taxi, for Protecting Women as Well as Promoting Religion" and "Pros and Cons of PUBG". The sources were corporate websites providing information related to the topic of the infographics. The first one used three sources, while the other used four. There was a similarity between those two infographics, in that they both discussed online applications (transport and game). Four other infographics deployed in-text citations (instead of mentioning sources in the by-line), quoting regulations and

officials. As for the types of data, four stories contained financial data, three stories geodata, and three industrial data (Table 7.36).

Table 7.36

Types of Data and Their Occurrences in Ten Infographics from Lokadata

Types of data	Occurrences
Financial	4
Geodata	3
Industrial	3
Event/field reporting	2
Economic indicators	1
Health &science	1
Others	3
Total	**17**

Table 7.37 shows that pictograms/logos and illustrations were the visuals most often found in Lokadata's graphics. Seven infographics were featured with those visualisation resources. Two other common visualisation resources were charts (five) and photos (three). The graphics format was portrait, and there was no tool for interactivity. Moreover, Lokadata encouraged their readers to share the graphics on Facebook, Twitter, Linked In, WhatsApp, Line, and mail.

Table 7.37

Visual Resources and Their Occurrences in Ten Infographics from Lokadata

Types of visualisation	Occurrences
Illustration	7
Pictogram/logo	7
Chart	5
Photo	3
Map	1
Total	23

7.2 Discussion

Topic, Tone, and Creator of the Infographics

Table 7.38 shows that the most frequent topic of the 50 infographics from the two-constructed weeks was economic issues, followed by politics. Economic issues

dominated almost half (23) of the graphics, even though four out of five news outlets focused on general interest news and current affairs. Economic and business news usually involved numerical data, e.g., financial reports, stock exchange data, and share price which lend themselves to visual/graphic displays and may be easier for audiences to absorb in these infographic forms. The data availability was supported by government institutions and corporations' websites (Berglez & Gearing 2018). As shown in Table 7.38, six of the business graphics originated from Katadata. Kompas and Tirto each had five each, and Lokadata four and Tempo three. Politics, law, and social only made up about 13 infographics. Another topic receiving significant attention was health, which was found in six out of the 50 infographics.

Table 7.38
Topic of Infographics

Topic	Number of Infographics	News media outlet				
		Kompas	Tempo	Katadata	Tirto	Lokadata
Economy/ energy	23	5	3	6	5	4
Politics/ law/social	13	1	5	1	2	4
Health	6	2	2	1	1	-
Sport/ entertainment	3	2	-	-	1	-
Technology	3	-	-	1	1	1
Other (natural disaster)	2	-	-	1	-	1
	50	10	10	10	10	10

Several of the interviewees in this study commented on infographics. Mr Sapto Anggoro from Tirto said an infographic is a summary of a long article (Interviewee no. 18, March 2019). Mr Metta Dharmasaputra (Katadata) noted that an infographic help readers understand complex information (Interviewee no. 11, March 2019). Moreover, as Mr Wisnu Nugroho (Kompas) stated that, as a product of data journalism, an infographic is also a tool to provide clarity to the public and respond to hoaxes or disinformation (Interviewee no. 5, March 2019). "Transport Options to Kertajati Airport" from Kompas, for example, gave clarity to travellers who wanted to find their way to and from Kertajati, a new airport near Bandung, capital of West Java province. The graphic was published on July 2nd, 2019. Based on Google search results using

"access to Kerjajati" as keywords, on June 30th and July 1st, some media outlets published stories revealing many passengers had no idea how to reach the city from the airport. The graphic showed 12 transport options, including their fares. Another graphic that offered clarity was "Withdrawing Money That Is Mistakenly Deposited into Your Bank Account" from Lokadata. It explained the legality of withdrawing money in the wake of massive transfer errors by a state-owned bank.

An infographic from Tempo, "Formation of the 2019 CPNS", is an example of using data journalism to respond to hoaxes. The graphic explained the timetable and procedure of civil servant recruitment in Indonesia. In Indonesia, the civil servant is one of the most contested vacancies. In 2018, more than four million people applied for about 240 thousand positions allocated by the government (Arnani 2018). Since many people eagerly waited for information about the recruitment, they were prone to become the victim of hoaxes and disinformation. Prior to an official announcement from the government regarding the recruitment, many hoaxes circulated, telling of recruitment dates and procedures. One of the hoaxes was indicated by the hoaxbuster team at the Ministry of Communication and Information Technology (Kominfo 2019).

In terms of tone, Table 7.39 indicates that most simple data journalism projects were neutral, just presenting facts or figures (34 of 50). However, 14 graphics were rated as critical because they used words associated with blaming or criticising an event, government policy, or business. Eight of these 14 stories dealt with political issues, and the rest were economic (three) or health (three). The fact that most of the critical items were about political topics can be explained from the point of view that political news is aimed to shape public opinion toward an issue while economic or business news is to encourage the community to discuss and understand economic and financial issues or events (Munoriyarwa 2020). Therefore, the more frequent deployment of strong words in political stories, including infographics, is intended to influence the audience or reader.

Table 7.39
Infographic's Tone

Tone	Number of infographics
Neutral	34
Critical	14
Supportive	2

Even in its simple form using infographics, a data journalism project is a collaborative work. It requires more human resources (Appelgren & Nygren 2014) than the traditional journalistic projects (written pieces). Figure 7.10 shows the number of people involved in the production of each infographic from five media outlets. It indicates that the number of graphics that were created by two and three people were almost three-quarters of all the samples (37 out of 50). Meanwhile, eight infographics were created by four people or more, and only five by one person. An infographic by Tempo, "Retail Business Lost Hundred of Billion Due to Blackout" involved eight people. Table 7.40 shows the number of people involved in each graphic by media outlets. Katadata, Tirto, and Lokadata allocated more people than Kompas and Tempo.

Figure 7.10
The Number of People Involved in Each Infographic
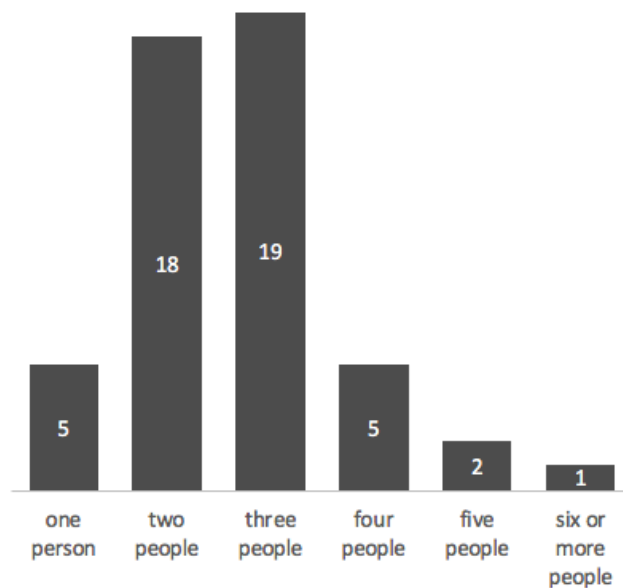
Table 7.40

The Number of People Involved in Each Infographic by News Outlet

Infographic from outlet	People					
	One	Two	Three	Four	Five	Six or more
Kompas		10				
Tempo	5	1	1	1	1	1
Katadata			7	2	1	
Tirto			10			
Lokadata		7	1	2		

Data in Infographics

Previous research in North America and Europe found that government data was the backbone for data journalism sources (Knight 2015; Tabary, Provost & Trottier 2016; Young, Hermida & Fulda 2018; Zamith 2019). While some participants in this research understood that government data is available and accessible and believed it should be beneficial for their work, some challenges hindered them from using it. Table 7.41 shows that while government data was significant (used 18 times in 13 infographics), it was found less often than foreign data (22 in 12 graphics) and data generated by journalists (19 in 19 graphics).

These findings are similar to those of a data journalism study in Arab countries (Lewis & Nashmi 2019), which concluded that the lack of domestic data, especially from the government, had the journalists turn to data provided by foreign agencies. In Indonesia, journalists mainly use data from foreign agencies to work on economic, health, and technology issues, as well as international stories (including sport). It is worth mentioning that data from foreign agencies was used in two of Katadata's infographics to criticise the government's health and education record. Also, one infographic criticising the government deployed academic work data, indicating that the journalists used scientific evidence to back up their criticisms.

Table 7.41
Data Sources from 50 Infographics

Source	Appearance in 50 graphics
Foreign	22
Own source	19
Government	18
Other news outlets	17
Academic	1
Total	**77**

As shown in Table 7.42, 21 of 50 infographics used just one source of data. However, 19 of 50 had two or more sources. Nine graphics used two sources, and ten graphics use more than two sources. An infographic from Katadata, "Chaos in Java Due to the Power Outage", used six sources, a higher number than in any other. On the other hand, eight graphics from Lokadata did not mention a source in its by-line. However, four of the eight displayed quotations from regulations and officials. This practice shows that data journalism in Lokadata was still heavily influenced by old journalistic styles, contrary to the openness trend adopted by data journalists who show their data sources to regain public trust (Curry & Stroud 2021; Mor & Reich 2018).

Table 7.42
Number of Sources in 50 Infographics

Number of sources	Number of stories
1	21
2	9
More than 2	10
No source	10

In correspondence to the most infographics topics, Table 7.43 shows that the most often used data types were industrial and financial. Industrial data appeared 19 times in 50 graphics, and financial data 18 times. These were followed by survey/poll/election data (ten). Some infographics incorporateed different types of data. "Indonesia's Digital Economy Is the Largest in Southeast Asia" from Katadata contained four types of data: financial, industrial, demographic, and economic indicators. Six other infographics, two from Kompas, two from Katadata, and two from Lokadata, use three data types.

Table 7.43

Types of Data in 50 Infographics

Types of data	Appearance in 50 graphics
Industrial	19
Financial	18
Survey/poll/election	10
Geodata	6
Health and science	6
Event/field reporting	5
Economic indicator	4
Biodata	3
Demography	3
Other	7

Data Presentation, Visualisation Features, and Infographic Formats

Digitalisation has allowed news outlet to enrich their products by using audio and visual features. Moreover, the availability of audio and visual resources has become a consideration for a newsroom when deciding whether an event is newsworthy (Harcup & O'Neill 2017). Hence, technology has changed the way journalists determine what news is. As the name implies, an infographic requires visualisation features, including images, to convey its message to the public. The newsroom also aims to use visual resources to emphasise news values and attract readers' attention (Caple & Bednarek 2016).

Infographics from the selected five media organisations deployed charts, pictograms/logos, photos, illustrations, and maps. Table 7.44 shows the most often used visualisation resources: illustrations, pictograms/logos, photos, charts, and geographical maps. As for the narratives in the infographics (Table 7.45), they were presented in ways that were easy to understand using dot points/lists, timelines, short quotes (no more than two sentences), and opening paragraphs (except in Tirto's and Lokadata's graphics and one Kompas infographic). Mr Anggoro from Tirto said that conciseness is the key to creating an infographic because it attempts to explain the very core of the story (Interviewee no. 18, April 2019). Meanwhile, Mr Dharmasaputra from Katadata said an infographic has to be very simple to make it easier to understand (Interviewee no. 11, March 2019). Yet, simple does not mean that an infographic is easy to create; as Mr Dharmasaputra said, it requires significant resources to work on it.

Table 7.44
Visual Resources

Types	Number of infographics
Illustration	30
Pictogram/logo	24
Chart	20
Photo	17
Map	8

Table 7.45
Narrative in Infographics

Types	Number of infographics
Dot point/process	38
Timeline	13
Quote	5

In terms of format, 47 of 50 infographics were presented in portrait orientation, which is more convenient for readers who access the graphics using a smartphone. Three infographics from Tempo were square, fit for posting on Instagram. To make it easier for their audiences, share buttons were provided, linking to social media and messaging applications. Table 7.46 shows all news outlets accommodated sharing on Facebook and Twitter. The more an infographic is shared, the more it gains readership. Hence, a newsroom is more likely to publish stories that have potential to be shared by the readers (Caple & Bednarek 2016).

Table 7.46
Sharing Buttons

	Kompas	Tempo	Katadata	Tirto	Lokadata
Facebook	✓	✓	✓	✓	✓
Twitter	✓	✓	✓	✓	✓
WhatsApp	-	✓	-	-	✓
Line	-	✓	-	-	✓
Linkedin	-	-	✓	✓	✓
Mail	-	-	-	✓	✓
Other	-	✓	-	-	-

Distinction and Collaboration

In Chapter 6, I discussed how Mr Manan encouraged journalists to emphasise the distinctive role of journalism by accentuating areas where journalists are expert and where social media falls short. Those areas included providing accurate information, making information more meaningful to the public, and presenting information that is easy to understand (Interviewee no. 15, March 2019). The use of infographics could be seen as a way to emphasise that distinction. As mentioned earlier in this chapter, Mr Anggoro, Mr Dharmasaputra, and Mr Nugroho said that in their news outlets an infographic is aimed at providing clarity and responding to disinformation. From Bourdieu's field theory perspective, the infographic samples show evidence that the adoption of data journalism is an attempt to strengthen the journalistic field.

Drawing on Bourdieu's field theory and Anderson's institutional lenses to analyse computational journalism, it becomes clear how other fields or institutions influence and shape data journalism implementation in news media outlets (Anderson 2013). This content analysis of infographic data sources has demonstrated that data produced by various institutions was crucial for creating data journalism projects. As shown in Table 7.41, foreign institutions were the most significant data suppliers for the 50 infographics analysed. Next were government agency sources and other news media outlets. Applying Anderson's (2013) political lens, Chapter 8 and 9 will explore in more depth the question of data availability in the Indonesian government institutions from journalists' points of view.

Among the key elements of data journalism are numbers and statistics (Rogers 2012; Royal & Blasingame 2015). The economy is one of the reporting fields that consistently produces numbers and statistics. Almost half (23) of 50 infographics discussed economic issues, followed by politics and health (see Table 7.38). In all the media outlets, except Tempo, the economy was the topic of the majority of infographics (see Tables 7.2, 7.9, 7.17, 7.25, and 7.33). Hence, no distinction can be made between infographics from general interest news outlets and those from the outlet (Katadata) that focuses on economy and business. The higher proportion of stories about the economy explains why most of the infographic tones were neutral (Table 7.47) – stories about the economy are generally aimed at helping people understand an issue (Jackson cited

byMunoriyarwa 2020). This is also in line with the goal of data journalism, which is, as stated by the research participants, to provide accurate information.

Table 7.47
Tone of Infographics Based on Topic

Topic	Number of graphics	Tone		
		Critical	**Neutral**	**Supportive**
Economy/energy	23	3	19	1
Politic/law/social	13	8	4	1
Health	6	3	3	-
Technology	3	-	3	-
Sport/entertainment	3	-	3	-
Other (natural disaster)	2	-	2	-
	50	14	34	2

The use of data to support stories and meet the demand to be (visually) engaging and easy to understand requires news outlets to deploy the various skills of data journalism. I argue that data journalism has become a field within the journalistic field where people from different backgrounds are collaborating newly. This content analysis of the selected infographics shows the array of roles involved in their creation. Table 7.48 shows 122 people in nine roles were involved in producing 50 infographics, or more than two per graphic. While one person may have played several roles (for example, writer, designer, and illustrator in Kompas, and data analyst and writer in Tirto), other outlets had a specific individual for each role (for example, Tempo, Katadata, and Lokadata. The significance of each role allowed it to gain more authority in the newsroom. This will be discussed in Chapters 8 and 9 based on interview data with journalists working in data journalism.

Table 7.48

Roles and People Involved in Producing 50 Infographics

Roles	Number of people
Editor	32
Unspecified	35
Designer	16
Designer/writer	13
Writer	12
Illustrator	4
Writer/analyst	4
Unspecified/writer/designer	3
Researcher/analyst	3
Total	**122**

7.3 Conclusion

In this chapter, I have presented a content analysis of 50 infographics from the five online news media outlets I selected for this study. The infographics were collected from two constructed weeks during the second half of 2019. This analysis has focused on infographics because the selected news outlets did not publish other types of data journalism projects on a regular basis. The infographics were analysed using frameworks derived from previous studies evaluating data journalism projects, as outlined in Table 4.3 in the methodology chapter. Five primary nodes were applied to code the infographics: topics and tone, creator, data, visualisation, and shareability.

This content analysis explains the characteristics of the five selected media outlets adopting data journalism in Indonesia. While there are some similarities between these media organisations, there are also differences. The economy was the most frequent topic in infographics from Kompas, Katadata, Tirto, and Lokadata, despite Kompas, Tirto, and Lokadata being general interest news websites. Tempo also had a significant number of infographics on the economy. The frequency of economic issues was higher because the topic is often associated with numbers, and these lend themselves to visual/graphic presentation. The more infographics discussing the economy, the more neutral tone we can expect to see because stories on the economy aim to encourage people to discuss and understand the market and financial issues.

As a simple form of data journalism project, an infographic is a collaboration of different skills. The findings from this content analysis demonstrate that only five infographics out of 50 were created by one person. Moreover, as shown in Figure 7.10, 19 graphics involved three people, and eight were produced by four people or more. This finding indicates a difference from research by Young et al. (2018) on data journalism projects from Canadian news outlets submitted for international awards, which shows that 15 out of 26 projects were created by two people or less. Yet, Young's study also shows seven projects were collaboration of six people or more. In terms of human resources, this findings chapter shows that some people played multiple roles, for example, a designer who is also a writer preparing drafts for infographics or a writer who is also an analyst. These could indicate the following: 1. Journalistic skills are not limited to editorial; hence a journalist is required to possess other proficiencies, 2. Media outlets faced difficulties in recruiting people.

In terms of data, the five news media outlets still relied on foreign sources (22 appearances in 50 infographics) and data collected by themselves (reporting/survey) (19). These findings could infer that the data journalists had problems accessing government data or doubted its accuracy. To elaborate on these matters, the following chapters will present findings from interviews with professionals from the news outlets. Further, data presentation and visualisation were the critical elements in an infographic to attract audiences' attention and help them understand the story. Tempo and Katadata had the most visualisation features (24 each) in their ten infographics. Illustrations and pictograms/logos were used frequently, the former appearing in 31 infographics and the latter in 24. In terms of format, the majority of graphics (47) were in portrait, and all websites accommodated sharing on Facebook and Twitter. From a field theory perspective, the inclusion of the social media tab indicates that news outlets are dependent on the technological field to reach the desired audience, even though they invest considerable resources to emphasise their distinction from other media by producing data journalism.

This content analysis of 50 infographics shows the efforts by media outlets to distinguish themselves in the midst of hoaxes and disinformation. In doing this, journalism has shifted its role from watchdog to verifier by responding to disinformation and clarifying issues for the public. The need for data to support data

journalism projects makes journalists rely on other institutions, notably foreign institutions and the government. Meanwhile, at the micro-level, the newsrooms in which data-driven journalism is implemented have become a field where agents from different backgrounds interact and attempt to be more significant. Therefore, apart from answering Research Question 2, this content analysis also contributes to answering Research Question 3: What changes are caused by the deployment of data journalism in newsrooms and journalists' professional practice?

The next two chapters will present findings from research participants representing the respective media outlets to get a deeper insight into the adoption of data journalism in each media outlet. Specifically, Chapter 8 will focus on the online news outlets owned by legacy media organisations: Kompas and Tempo. I will apply (Anderson 2013) six sociological lenses: politics and public policy, economics, institutions and fields, organisation-level dynamics, culture history, and technological and news. These will be discussed using field theory and its concepts in journalism, outlined in Chapter 3.

Chapter 8

The Big Old Machines:
Data Journalism in Legacy Media Outlets

In Chapter 7, I analysed samples of simple data journalism projects (infographics) from the five news outlets investigated in this research. Among that chapter's key findings are the need for more human resources to work on data journalism, despite it being only a simple project, and the use of visualisation tools. Hence, the adoption of data journalism is considered to significantly impact a newsroom. From the content analysis, the previous chapter also shows differences between news outlets in perceiving and adopting data journalism.

This chapter aims to answer Research Questions 2 and 3: How do media outlets in Indonesia adopt data journalism, and What changes are caused by the deployment of data journalism in newsrooms and journalists' professional practice? It argues that data journalism will introduce changes in the newsrooms in regard to the getting and handling of data, managing human resources, work processes, and news selection. This chapter focuses on the news media outlets that originated from the legacy media. This chapter also argues that the capacity to adopt data journalism is not directly proportional to the size of the business of one news outlet.

To adapt to technological advances, legacy news media organisations in Indonesia, especially print, have expanded their use of the internet and diversified their digital products and services. Some financially advantaged organisations have established digital empires, their businesses including content creation, mobile applications, and technological infrastructure (Tapsell 2017). These include Kompas, Jawa Pos, and Tempo, although the latter does not engage in the field of infrastructure. Meanwhile, other media outlets struggle for survival.

In terms of journalism, several outlets have strived to improve their work and to enhance readers' trust. Kompas.com and Tempo.co are among the outlets that have gained recognition in the global level for these efforts. In 2010, Tempointeraktif.com (now Tempo.co), was runner up for the best online infographic in Asian Digital Media Awards (Poernomo 2010). In 2011, Kompas.com received the silver award at the Asian Digital Media Awards for the best online media (Kilman 2011) and, in 2020, one of its reports was awarded best data-driven, in-depth reporting by the Alliance of Independent Journalists of Indonesia (Febrina 2020). Tempo.co and Kompas.com consistently produce infographics, a key output of data journalism.

This chapter presents an investigation of the adoption of data journalism in Kompas.com and Tempo.co, which are owned by Indonesian legacy media organisations. It is hoped that this chapter will illuminate the dynamics and characteristics of data journalism adoption in news outlets that were established by the old media institutions. I coded and categorised the findings from the research interviews according to six sociological lenses outlined in Chapter 3: (1) politics and public policy; (2) economics; (3) institutions and fields; (4) organisation-level dynamics; (5) cultural history; and (6) technology and news (Anderson 2013). Because the last two lenses overlap, I merged them into a single parent code: culture history and technological and news.

There are six participants whose accounts provide the primary data for this chapter (see Table 8.1). Two of them were from Kompas.com: Mr Wisnu Nugroho and Mr Amir Sodikin. At the time of his interview, Mr W Nugroho had been Editor in Chief for almost four years. Before that, from 2001, he was reporter and editor at *Kompas* daily, focusing on political issues. Mr W Nugroho has a bachelor's degree in philosophy and a master's in communication. In addition to being a journalist, he teaches at a Multimedia Nusantara University, owned by Kompas Gramedia (publisher of Kompas). Mr Amir Sodikin joined Kompas in 2002 and at the time of his interview had been Managing Editor for almost four years, after his transfer from *Kompas* daily. Mr Sodikin has a bachelor's degree in biology. Before his assignment to Kompas.com, he managed Kompas.com daily's "Multimedia" page.

Three participants were from Tempo: Mr Toriq Hadad, Mr Wahyu Dhyatmika, and Mr Moerat Sitompul. Mr Hadad is CEO of Tempo Group and a senior journalist who started his career with *Tempo* magazine in the mid-1980s. He has a bachelor's degree in agriculture and a master's in management. Before becoming CEO, Mr Hadad was Editor in Chief, both at *Tempo* weekly magazine and *Koran Tempo* daily. Mr Dhyatmika is the Editor in Chief at Tempo.co, and he started as a print journalist in 2001. He has a bachelor's degree in social science, a master's in international journalism, and he was a Nieman Fellow at Harvard University. He has also taught at Indonesian universities. Mr Sitompul is Manager at Tempo Media Laboratory (Media Lab) and oversees the company's implementation of new initiatives, including data journalism. Mr Sitompul has a bachelor's degree in graphic design and has been responsible for Tempo's design. Between 2010 and 2012, he worked overseas for Vietnamese news outlets. The sixth participant was Mr Iman D. Nugroho, a journalist who was also Head of Education Division at The Alliance of Independent Journalists.

Table 8.1

Research Participants Quoted in This Chapter

Interviewee no.	Name	Organisation	Position
1	Mr Toriq Hadad	Tempo	CEO Tempo Inti Media
2	Mr Wahyu Dhyatmika	Tempo	Editor in Chief of Tempo.co
5	Mr Wisnu Nugroho	Kompas	Editor in Chief of Kompas.com
6	Mr Moerat Sitompul	Tempo	Manager at Tempo Media Lab
8	Mr Iman D. Nugroho	The Alliance of Independent Journalists	Head of Education Division
16	Mr Amir Sodikin	Kompas	Editor at Kompas.com

Note. Interviewee numbers refer to Table 4.1 in Chapter 4

Before presenting the findings from the interviews, I will provide profiles of Kompas.com and Tempo.co as context for the data and discussion. These include the historical backgrounds of the outlets.

8.1 Kompas.com

The first edition of *Kompas* newspaper was published on July 28, 1965, amid the rivalry between the Communists and the Army in Indonesia (Cribb 2001). The founders were Petrus Kanisius Ojong and Jacob Oetama, who were encouraged by Frans Seda, a minister at that time and the leader of the Indonesian Catholic Party. Seda was asked to create a newspaper by Army Commander General Ahmad Yani (Ishwara 2001), who was kidnapped and killed during a failed coup on the September 30 Movement (G30S)[52]. The newspaper was to be named *Bentara Rakyat* (*People's Herald*) to offset *Harian Rakyat* (*People's Daily*), which was owned by the Communist Party of Indonesia and later banned along with the elimination of the party. However, President Sukarno preferred "*Kompas*" (Compass), to describe the role of the newspaper as a navigational instrument to guide the people during the revolution (Bramasta 2020).

Kompas evolved as an independent newspaper. Between January 21 and February 5, 1978, it was banned after covering students protesting against President Soeharto, who was running unopposed for the presidency for the third time[53] (Wijayanto 2015). After seeking forgiveness, the paper was back in business. It became the largest newspaper in the country in terms of business and circulation[54], and the most respected (Sen & Hill 2006). Moreover, Kompas Gramedia (its holding company) has grown to be one of Indonesia's main conglomerates, involved in many business sectors.

In response to the spread of the internet, *Kompas* went online on September 14, 1995. The online version, Kompas Online, replicated its print version (Kompas.com 2020). From a small unit within the Kompas newsroom, this online version became a news unit business in 1998, with its own newsroom, under the holding name PT Kompas Cyber Media (Kompas.com 2020). In 2008, Kompas Online was rebranded as Kompas.com, and it vowed to deliver quality journalism similar to its print version and to develop its content and channels (Kompas.com 2020).

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52 G30S stands for Gerakan 30 September (September 30 Movement).

53 Soeharto was named as acting president on March 12, 1967, after the Provisional Peoples' Consultative Assembly (MPRS) of Indonesia stripped Sukarno of power. In the next year he was sworn for his first five-year terms. Soeharto was again appointed in 1973 (McDonald 1980).

54 At the height of print era, *Kompas* was reported to sell 600,000 copies daily (Miller 1990). The most recent claim was made in 2014, saying that it printed 500,000 copies per day (Kompas 2014).

Kompas.com has devoted itself to the use of data to promote accuracy and impartiality, especially in the age of disinformation (Kompas.com 2020). Hence data presentation, which involves visualisation and requires more resources, has become a necessary part of its newsroom. Mr Sodikin, Kompas.com's managing editor, commented on this during his interview:

> We strive to utilise data and visualisation. Ideally, we could apply data-driven journalism to improve journalistic works. (Interviewee no. 16, March 2019)

Data-driven journalism artefacts can be found in some channels or tabs on Kompas.com's website. As mentioned in Chapter 7, simple data journalism projects in the form of infographics, which are published daily, are located in channel "Tren" (trend). Infographics, which is part of a long-form data-data driven journalism story, are located under "JEO" and "Visual Interaktif Kompas" (visual interactive Kompas/VIK). JEO tends to update its content weekly, and VIK up to twice each month.

Politics and Public Policy: Scarcity in Historical Data

The lack availability of government data has become a constraint in carrying out data-driven journalism projects at Kompas.com. Mr Sodikin stated that, although some of the latest data are available in the government institution websites, historical data are scarce:

> Some of the latest data is easy to get. Nevertheless, we have difficulty finding datasets for an extended period, for example, data that are consistently collected over many years (thus showing a trend, pattern or change). (Interviewee no.16, March 2019)

This is in contrast to the Satu Data Indonesia (One Data Indonesia) portal (data.go.id)[55], a government-initiated website that integrates and synchronises data from all ministries and agencies. Mr Sodikin noted that data presented on Satu Data Indonesia, even though its format is user friendly, are mostly obsolete, which is unfortunate because the portal could be a consolidation of the national data to support public access, including data journalism projects.

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[55] Satu Data Indonesia portal was opened to the public in 2014. The move was part of the Indonesian government's efforts to carry out its obligation stipulated in the 2008 Public Information Disclosure Act (World Bank 2017).

Mr Sodikin said finding the latest data, as well as historical data, was difficult for him and his team. Moreover, there is scarcity when it comes to data at the regional government levels, from provinces to the villages:

> It is difficult for us to play with data … Such data is not publicly available. In the industrial sector, such data are for sale. (Interviewee no. 16, March 2019)

Even when data is available, its format and structure often create difficulties for the editorial team. Formats of data include PDF, Excel, and Word, while structures include elements in the data. Working with different formats and structures of data raises technical issues and requires more resources (Ser 2018). Mr Sodikin explained:

> When we worked on election data, although the data is provided by the election commissions (in central and regional levels), my team had to work harder to process the data so it could be analysed. It was fortunate that one of our staffs was eager to convert various formats of data, make it easier for the rest of the team to work on it. (Interviewee no. 16, March 2019)

Economics: Relying on the Existing Resources

As indicated in Chapter 5, Kompas Gramedia is a conglomerate that, in addition to media, has a range of business ventures, including manufacture, hospitality, property, retail, education, and event organising. In 2018, Its owner, Jacob Oetama, was named as one of Indonesia's 150 richest people (Globe Asia 2018). Kompas Gramedia is the sole owner of Kompas Cyber Media, the company name of Kompas.com (Kompas.com 2020). Kompas Gramedia disbursed IDR11 billion (USD747,000) in 2008 to revamp Kompas.com, which was previously known as KCM, an abbreviation of Kompas Cyber Media.

In 2020, Kompas.com's editorial team consisted of 82 reporters and editors, including a managing editor and editor in chief. In addition, there were 10 personnel for handling multimedia and social media. Kompas.com produced an average of 344 news stories per day, as estimated using two weeks sampled in the second half of 2019. During the same sampling period, Kompas.com managed to publish 27 infographics or 2.7 projects per day (Kompas.com 2020).

Despite this capacity, lack of human resources has hampered Kompas.com's sophisticated data-driven journalism project. Mr Sodikin said that instead of recruiting new staff, the news outlet encourages existing personnel to upgrade their skills:

> We do not recruit special personnel in the field of data mining or data visualisation. We only use existing human resources: employees who have skills in the areas of web development, programming, and coding. They do not have a journalistic background, and they also do not have specific knowledge of data visualisation. (Interviewee no. 16, March 2019)

Mr Sodikin also stated that working on a complex data journalism project, which requires visual elements and big data, was very difficult because of online media working habits that prioritise speed over depth. Moreover, he pointed out that finding talented people in data journalism is challenging because this field is considered new:

> The existence of human resources is fundamental in this field, besides the availability of technology. If human resources are qualified, we can produce more interactive projects, and we can maximise the use of available programming tools. However, in the end, it is difficult for us to find the right talent for data-driven journalism because only a few in Indonesia have that ability. Even if there are [people], their capacity is still shallow, and they lack experience in journalism. (Interviewee no. 16, March 2019)

Hence, work on a big project, for example, a combination of several visualisations and long articles, can take two weeks or a month for Kompas.com. Mr Sodikin referred to data journalism projects undertaken by Visual Interaktif Kompas/Kompas Interactive Visual (VIK), a channel under Kompas.com. This channel displays journalistic reports of more than 1,000 words combined with multimedia (text, image, audio, video, and infographic). Mr Sodikin said:

> One project in VIK could involve up to 13 persons from different kinds of expertise in the newsroom. These staffs were asked to work on the project while also carrying out their daily tasks. (Interviewee no. 16, March 2019)

Institutions and Fields: Paid Courses from Other Agencies

Presenting complex data and the use of substantial elements of visualisation are a characteristic of data journalism (Bradshaw 2012; Rogers 2012; Royal & Blasingame 2015). Kompas.com's Editor in Chief, Mr W Nugroho, pointed out that the aim of his news outlets data-driven journalism was to present clarity during chaotic situations resulting from the flood of information (Interviewee no. 03, March 2019). While Mr Sodikin was reluctant to state that Kompas.com had implemented data-driven journalism[56], said that his team strives to meet what he called a "visual and data standard":

> We still need to learn and do more experiment to get there (data-driven journalism), for example, to work on engaging data journalism projects. But it is our mission, that we have to combine data and visualisation. (Interviewee no. 16, March 2019)

Mr Sodikin said that to achieve this goal he needed the kinds of expertise that are traditionally beyond the journalistic field. These include programming, coding, and webmasters. Realising that acquiring new personnel with the specified skills would be difficult, Kompas.com encouraged its existing staff to attend training courses provided by other institutions, including some that were held overseas. Mr Sodokin said:

> I have attended several training and workshops, both at home and abroad. The company gave us full supports. It covered all expenses for the training, including accommodation and travel allowance. (Interviewee no. 16, March 2019)

Mr Sodikin said that WAN-IFRA (The World Association of News Publishers) is one of these training organisations. Based in Frankfurt, Germany, WAN-IFRA membership comprises around 3,000 news publishing and technology companies (WAN-IFRA 2020b). In addition, to protect the independent media companies, the association helps its members adapt their products to technological advances. Hence, despite being a newspaper association, it provides training to upgrade skills in digital media, including data journalism. In July 2020, for example, WAN-IFRA, in collaboration with Google News Initiative, held a webinar on data journalism, featuring Kuek Ser Kuang Keng, a leading data journalist in South East Asia (WAN-IFRA 2020a).

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[56] On the 15th January 2022, Kompas held a webinar called "Jurnalisme Data" (Data Journalism) for campus journalism. Speakers from Kompas explained data journalism practices in their newsroom (Alvita 2022).

Other training institutions noted by Mr Sodikin were Facebook and Satu Data Indonesia (One Data Indonesia). In Indonesia, Facebook is known for periodically providing training for journalists. It also has a dedicated page called "Facebook for Journalists", containing educational resources for digital journalists. Satu Data Indonesia, which is managed by the Executive Office of The President of Indonesia, also held a series of data journalism training courses in several cities to mark the International Open Data Day (Sinambela 2017).

Organisation-Level Dynamics: The Ad Hoc Team

At the time of writing, Kompas.com did not have a dedicated team to work on long-form data journalism projects. However, some staff were assigned permanently to infographics work. The sample from the two constructed weeks between July and December 2019 demonstrates that two editorial staff worked consecutively to produce simple data journalism projects (infographics). Mr Sodokin said that for the long-form, data-driven journalism project that was presented in VIK, more staff were required:

> For the infographic, we allocate one journalist to produce the graphic. We also assign a designer to work on the visualisation. These two are freed from other responsibilities. For the long-form project, it requires up to 13 personnel (an ad hoc team), including photographer, graphic designer, and web developer. (Interviewee no. 16, March 2019)

Mr Sodikin explained that, when working on the visualisation, the initiative was started by a creative team based on the story decided by the journalist:

> The creative team would provide a storyboard to be consulted with graphic designers. A storyboard that was agreed by the latter would be a dummy to circulate to the editorial team. At this point, there would be discussion and compromise between the editorial team and graphic designer. (Interviewee no. 16, March 2019).

Hence, in terms of the news production process, working with data and visualisation has changed the state of the newsroom in Kompas.com:

There have been significant changes in the way and relationships of work. (Interviewee no. 16, March 2019).

Mr Sodikin, who spent 13 years at *Kompas* daily newspaper, recalled a time when the journalists used to be know-it-alls and were unlikely to consider the opinions of supporting staff:

> Someone who comes from a traditional newsroom culture will be emotional and will not accept it if a staff who is not from the editorial office proposes something related to the news.

> Our way of working is different from the newsroom in general, where the creative and design teams are only complementary. We cannot treat them like that. They are partners who have initiative and can execute their ideas visually. We have to welcome their input because they know better about visualisation, they know better about technology and its compatibility with platforms, whether mobile or desktop. (Interviewee no. 16, March 2019).

Mr Sodikin stated that a data journalism project is also a product of technology, so the editorial team needs to consider and acknowledge advice from the creative team. He noted, for example, a graphic designer could ask a writer or editor to cut their draft to fit with the expected design, although it is the journalists who ultimately approve the publication of the product:

> We need to emphasise the significant role of the creative and design team because this is a collaboration. (Interviewee no. 16, March 2019)

Cultural History, and Technology and News: "We Do Not Want the Technology to Destroy Us"

With the rise of social media, the mainstream media, especially online news outlets, are facing considerable challenges, as Mr W Nugroho explained:

> Online journalistic demands speed, constant update, and types of information that are easy to digest and popular. While accommodating the demands, we have to adjust them, so they meet the principles of high-quality journalism. (Interviewee no. 5, March 2019)

The employment of data SEO (search engine optimiser) officers, for example, has helped journalists gather keywords and other information that gain public attention. However, the outcome of the SEO might be different from what the journalists have in their mind, as Mr W Nugroho argued:

> What is the point of making a good article if people do not read it? (Interviewee no. 5, March 2019)

However, when it comes to which deciding stories to work on, Mr W Nugroho said that the editorial team would make the call:

> We choose not to report, let alone exploit an event for page views if it harms the nation's unity and vulnerable groups. That is our principle, we do not want the technology to destroy us". (Interviewee no. 5, March 2019)

Mr W Nugroho added that Kompas.com employed technology to relieve its journalists from technical tasks. In uploading a news story, for example, Kompas.com did not need to manually add links of related news to it. When editing a news draft, its editors did not need to be worried about technical errors such as typos, because there is a tool to fix them.

For Mr Sodikin, these technological advances have allowed him to explore many ways to develop journalistic products. Ideas that were impossible to implement in the printed platform have become a reality on the Internet:

> There were many ideas, when I was in *Kompas* daily, that could only be executed at Kompas.com because we could explore the Internet without limits. For example, I used to envision report of expeditions conducted by *Kompas* to be branded as a separate product. However, due to limited space, it was impractical to be accommodated. (Interviewee no. 16, March 2019)

Moreover, Mr Sodikin noted that the internet has made it possible to accommodate long-form journalism, including data-driven journalism, thus responding those who insist that high-quality journalism products can only be found on print media:

> Online journalism has received much criticism because it only displays breaking news or flash news, fragmented, and incomplete. Online journalists have also been criticised for not being present at the news scene. So, we were challenged

to respond to these criticisms, one of which is through this VIK. (Interviewee no. 16, March 2019)

Accordingly, Mr Sodikin said that the long-form data journalism project must not be evaluated based on the number of views, as would be applicable to conventional online content:

> Its key performance indicators are visual quality and interactivity. Then we checked the page views. But we do not take page views into account. Its function is only to monitor products that readers like. The main thing is the design and quality. (Interviewee no. 16, March 2019)

8.2 Tempo.co

Tempo magazine was founded by Goenawan Muhammad and friends in 1971. In its early years, Tempo aligned itself with the New Order's developmentalism (Steele 2005). However, it did not take long before the magazine criticised the regime and repeatedly highlighted corruption, especially in the governance of state-owned enterprises (Tempo 1977). Until it was banned in 1994, *Tempo* was the only public affairs magazine in Indonesia, with a circulation of about 190,000 mostly middle-class readers, including the intellectual elite (Steele 2005). The banning, which brought *Tempo* to its lowest point in terms of both business and existence, was caused by a cover story that broke news of a scandal behind the purchase of ex-East German battleships, allegedly involving Indonesia's Minister of Research and Technology, BJ Habibie[57] (McCargo 1999).

In 1996, *Tempo*'s journalists created a website to keep informing the public (Margianto & Syaefullah 2012), and the magazine resumed publication in 1998, five months after the fall of Soeharto. As Mr Hadad, CEO of *Tempo*, said during an interview for this project in 2019, the magazine soon regained its popularity as a muckraker and its circulation broke 200,000 copies, the highest in its history. This achievement generated enthusiasm within the organisation and, as a result, a plan to develop Tempointeraktif.com was no longer a priority:

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[57] Habibie was considered as Soeharto's heir. He was vice-president in 1998, for less than three months, before replacing Soeharto after his resignation. It was during Habibie's presidency that the Press Law of 1999 was enacted, abolishing government authority over media licensing.

> The sell was very impressive but intoxicating at the same time. It kept us away from the fact that our readers gradually shift to the internet. There was a significant decrease in circulation when the internet and smartphone allowed us to access information. Hence, in 2004, we pay more attention to develop our website, we revamp the newsroom and business model. (Interviewee no. 1, March 2019).

In 2011 Tempo rebranded its portal as Tempo.co and strived for accuracy as well as attractive news. It also adopted data journalism. Mr Hadad said:

> Accuracy is at the heart of Tempo's journalism. We are very strict to it all the time to support our investigative report. The availability of data improves the accuracy, and it maintains our credibility. [In] the wake of hoaxes we [the journalists] are more expected to use data. (Interviewee no. 1, March 2019).

Mr Dhyatmika, Editor in Chief of Tempo.co, said the outlet had been implementing data journalism for some time:

> Tempo is not a new player in data journalism. However, the term data journalism is often not attached to Tempo's journalism practices. So, the term data journalism has only emerged recently, even though it has been in place since the beginning of Tempo's investigation. (Interviewee no. 2, March 2019).

Regarding the existence of its two channels on the Tempo.co website ("Grafik" and "Data"), which regularly published infographics and data in a simple chart, Mr Dhyatmika noted:

> These two channels were created to emphasise that this is the form of it (data journalism) so that people become more familiar. It is also part of an effort to introduce data journalism to editorial members and attract their interest. (Interviewee no. 2, March 2019)

Politics and Public Policy: A Need for a One-Door Data Policy

Finding data is often the most challenging task for data journalism in Indonesia. Mr Dhyatmika said the climate of finding data had not helped journalists do their work, even though data are available.

The problem is that there is no one-door policy for accessing data. For example, when the Alliance of Independent Journalists of Indonesia[58] launched its data journalism program, many government representatives attended. They enthusiastically say our data is open and accessible. But journalists do not know where the data is stored, and how to access it. (Interviewee no. 2, March 2019).

Mr Sitompul, Manager at Tempo Media Lab, who was involved in the daily routine of newsroom production, acknowledged that the government had tried to realise an open-data policy. However, this did not meet the needs of the journalists because some officials were reluctant to release their data. He explained:

The government's efforts are still far from expectations. The government often asks why data has to be published. They worry that the data is being misused, even though it should be made available to taxpayers. (Interviewee no. 6, March 2019)

Facing that situation, Mr Sitompul said he would often create his own databases. However, this initiative was limited to selected topics. When working on stories about elections, for example, he could only rely on the generosity of the General Election Commission (KPU).

An accurate map in presenting news about elections is crucial. I believe the KPU has the map. I could not possibly make the map myself because it would not be accurate. In this case, the general map also cannot be used because of its low accuracy. (Interviewee no. 6, March 2019)

When data is accessible, not only does the format create a problem, it often leaves the journalist with the daunting task of cleaning the data. Mr Sitompul referred back to the election data he worked on ahead of the 2019 Indonesian General Election:

Most of the time, we have to clean up data. For example, there were Muhammad and Mohammad. It turned out that after we checked, both names belonged to one person. There is also one person with different details, for example, one was a high school graduate, and the other holds a bachelor's degree. After we

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[58] Dhyatmika was an active member of Alliance of Independent Journalists of Indonesia. He occupied some executive offices in the Alliance, including Chairman of the Jakarta chapter, and was board member of the Alliance when the interview was conducted.

examined it, it turned out that the latter was the most recent. We have to tidy up everything manually so that it can be processed. (Interviewee no. 6, March 2019).

While complaining about limited access to data, Mr Dhyatmika pointed out that some journalists are not equipped with the skills to retrieve data; this happens because these journalists are not used to being assigned work on data-driven journalism:

So that the knowledge that certain data can be found in certain places does not grow. (Interviewee no. 2, March 2019)

Despite the difficulty in finding data, Mr Dhyatmika said that his team has never applied the Freedom of Information Act (Law no. 4 of 2008) to force government agencies to release their data because there are always other ways to get data. Moreover, using such legal mechanisms is not an option for journalists because it could take months to get the final answer to the request. He explained:

The FOI Act is not a practical option for us. The law does not provide a quick procedure to obtain data. At the same time, the deadline for publication is usually tomorrow or next week. (Interviewee no. 2, March 2019)

Economics: "Everyone Does Everything"

Tempo Inti Media (TIM) limits its scope of business to the media sector. It has been listed on the Indonesia Stock Exchange since 2001 (IDN Financials 2020). Through its subsidiary, Tempo Inti Media Harian, TIM controlled 90.25 per cent of Info Media Digital (IMD), the publisher of Tempo.co, with the rest owned by Temprint (4.75 per cent) and IDN Financial (5 per cent). The former is another subsidiary of TIM, and the latter is a Singapore-based private equity firm (Astria 2017; IDN Financials 2020).

In the five years to 2020, TIM had been struggling financially because of diminished newspaper revenue. In 2016, it recorded an IDR13.56 billion net loss, before it recovered and gained profits of IDR3.06 billion in 2017 and IDR4.45 billion in 2018 (Amelia 2018; Hendartyo 2019). However, its profit then dropped almost 50 per cent to IDR2.8 billion in 2019 (Wahyudi 2020). In mid-2020, the group suffered a loss of IDR22.5 billion, so it held off Tempo.co's IPO (initial public offering), which should

have taken place in March 2020 (KR 2020). The IPO was aimed to boost Tempo's digital product, including Tempo.co, because it contributed to 61 per cent of advertising revenue in 2018 (Fitri 2019).

Mr Hadad said that the future of Tempo as a corporation relies on its ability to adapt to the digital era; hence, developing Tempo.co has become the main priority for the company:

> We want to adopt as many digital tools as possible for the benefit of the corporations. We optimise all existing resources to be fitted with digital technology. This effort was marked by the establishment of the Media Lab, which became a bridge between editorial and digital platforms. (Interviewee no.1, March 2019)

In 2020, despite the financial hardship, the Tempo.co newsroom had 68 journalists and 13 other staff who handled technology and social media (Tempo 2020). Tempo.co published an average of 376 news stories per day during a sample of two-constructed weeks from the second half of 2019. However, during the same period, it only published 15 infographics, or 1.5 seven projects per day, and 10 simple data charts. Thus, the combination of infographics and simple data charts only contributed 0.66 per cent of the overall daily news production.

Mr Sitompul noted that the problems with his Media Lab team arose because there was no work specialisation or division of labour:

> At the moment, everyone does everything because we do not have staff devoted to research, data scientists, designers, programmers, and software. We, therefore, use our existing capabilities to search for data (and work on data journalism). If it is likened to a boat, we are canoes, not a cruise ship. But we are heading in the same direction. (Interviewee no. 6, March 2019)

Mr Dhyatmika shared views similar to those of Mr Sitompul. He said that the newsroom needs to recruit specialists to be more engaged with data journalism:

> We had a specialist in data-driven articles, but then he left. So, the position is not permanent. While looking for the right person, we also train the existing staff and encourage them to attend workshops.

Some staff used to be able to process data and use design tools. But they come and go. Meanwhile, journalists are generally not familiar with these tools. (Interviewee no. 2, March 2019)

Mr Dhyatmika added that there were five staff in the Media Lab whose primary task was producing data charts and infographics for the "Data" and "Infografik" channels. However, these staff also accommodated the needs of other news platforms within the Tempo group, including *Koran Tempo* daily and *Tempo* magazine. Hence, Mr Sitompul said he often found himself as the only producer of infographics:

I do everything. Looking for materials, making layouts, preparing scripts, and giving titles. (Interviewee no. 6, March 2019)

The lack of human resources has also made it difficult to develop the tools for data journalism. Mr Dhyatmika said that tools such as Tableau and Infogram help journalists to visualise data, but they have limited features and do not fit with the organisation's IT system:

We created a toolbox for data journalism, but we have limited resources to develop it … Also, we need more time to make our staff familiar and eager to use the tool when working with stories that have data. (Interviewee no. 2, March 2019).

Institutions and Fields: Training and Collaboration

According to Mr Dhyatmika, any form of a news story that is initiated by data and places data as the cornerstone of the story is considered data journalism:

Data journalism is a journalistic practice that positions data at the centre of its process. Data can be a trigger for a story, become the primary tool to explain problems, and data is used as part of the evidence used to uncover a scandal. So, any journalistic product that uses data as an integral part of its production process is data journalism. (Interviewee no. 2, March 2019)

Tempo, as previously stated by Mr Dhyatmika and Mr Hadad, has practised the principle of data journalism for a long time:

When the term data-driven journalism came into common use, *Tempo* reinforced its "data journalism" tradition by training its staff, introducing a "data" channel, and applying specialist methods to work with data. (Interviewee no. 2, March 2019)

Training has become essential because data journalism requires many skills that are new for journalists. Mr Dhyatmika noted:

A data journalist must be able to search for a dataset. More than that, finding a dataset that could potentially be news. He/she must have the basic skills to process the dataset, be able to analyse, and understand visualisation, although the latter will be handled by the designer. (Interviewee no. 2, March 2019).

In addition to holding in-house data journalism training (attended by cadet reporters), *Tempo* usually sends its journalists to participate in workshops organised by other institutions. *Tempo*'s journalists take advantage of the free training and fellowship provided by donor agencies or non-profit organisations, such as CFI and the Alliance of Independent Journalists of Indonesia (AJI). CFI is a France-based organisation that promotes the development of media in Africa, the Middle East, and South-East Asia. Mr Dhyatmika explained:

In 2016, CFI funded data journalism regional training in three countries, and we were allowed to send three staff. (Interviewee no. 2, March 2019)

Mr Dhyatmika also said that Tempo.co engages in collaboration to improve its journalists' skills and to share the knowledge of data journalism with other news outlets, as well as to work on particular data-driven journalism projects:

Since the beginning, we were involved in the IDDJ competition, in collaboration with KSP (Presidential Staff Office), AJI, and PPMN (Indonesian Association for Media Development) in 2016. It was probably the first data journalism competition in Indonesia. We make use of the public data provided by One Data Indonesia at KSP.

Some of our journalists, including myself, also participated in AJI's ToT (Training of Trainers). The hope is that it can continue to educate younger colleagues. (Interviewee no. 2, March 2019)

In 2016, Tempo.co, led by Mr Dhyatmika, became the only Indonesian outlet involved in a collaborative inquiry into the Panama Papers, conducted by the ICIJ (International Consortium of Investigative Journalists). This investigation revealed that some Indonesian politicians, business people, and celebrities had shell companies in tax haven countries, allegedly to hide their wealth. This project was praised by Mr ID Nugroho, Head of AJI Education Division:

> Panama papers is the epitome of data-driven journalism. (Interviewee no. 8, March 2019)

Organisation-Level Dynamics: The Appetisers

The CEO of Tempo Inti Media, Mr Hadad, said the future of *Tempo* lies in the digital realm (Interviewee no.1, March 2019). His outlets have had to adapt to digital technology in order to survive and reap the benefits of the new platforms. To accommodate the adaptation, *Tempo* has created a dedicated team called Tempo Media Lab, which is also responsible for producing data journalism projects. The team works independently to produce data charts and infographics. Mr Dhyatmika explained:

> What we have in the "Grafik" and "Data" channels are initiated by the team (Media Lab). They produce on a daily basis. The team decide a newsworthy issue, then find data to enhance the presentation of the issue. When such an issue is not available, the team will look for any data on the Internet that are potential to work on. (Interviewee no. 2, March 2019).

Mr Dhyatmika noted the creation of the Media Lab and the adoption of data journalism required journalists to change their mindsets. In the age of data, journalists need to respect and collaborate with colleagues from different fields of expertise and let them take some of the roles that traditionally belong to journalists. Mr Dhyatmika said:

> This is unavoidable. We have to collaborate to create innovation in news production and to let go some of our authorities to data scientists, analysts, designers, and programmers, because they play a role in determining what is called news and what should be produced as news. (Interviewee no. 2, March 2019)

However, from a different point of view, Mr Dhyatmika perceived this phenomenon as the expansion of the definition of a journalist; the title is no longer limited to reporters and editors:

> They (data scientists, analysts, designers, and programmers) also become journalists. In fact, the definition of journalist is broader than before. The role of journalists in the conventional sense is reduced. But there are new roles that are created, and they get a more responsibility.
>
> Moerat [Sitompul][59], for example, has been granted with a press ID, and we recognise him as a journalist. (Interviewee no. 2, March 2019)

However, Mr Dhyatmika acknowledged that adopting digital technology in a legacy media needs more time as it requires changing long-established practices (traditions) in the organisation, which may generate resistance from some staff:

> A media [outlet] that was initially printed and transformed as digital must change slowly. Unlike start-ups that start from scratch, it is easier for them to define boundaries and set work processes. Here, changing A to B can draw push backs and resistance. (Interviewee no. 2, March 2019)

Additionally, Mr Dhyatmika noted that the practice of data-driven journalism in Tempo.co still shallow because the website was designed to entice readers to access the daily *Koran Tempo* and the weekly *Tempo* magazine, which also circulate in the form of e-newspapers and e-magazines:

> Actually, the "Graph" and "Data" channels are appetisers to bring readers to more powerful products, for example, reports produced by newspapers and magazines. Indeed, the reports in both outlets are still issue-driven, not data-driven. (Interviewee no. 2, March 2019)

Cultural History, and Technology and News: "Issue-Driven"

Tempo's journalism is well known for having literary and cultural roots that impact the writing style of its journalists (Steele 2005). Its founders Goenawan Mohammad and

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[59] Dhyatmika referred to Mr Sitompul, who joined *Tempo* as designer and has been responsible mostly for the outlet's visualisation division. At the time when the interview was conducted, Mr Sitompul was acting Managing Editor.

Fikri Jufri are intellectuals. Some notable Indonesian writers who have been journalists at *Tempo* are Putu Wijaya, Leila Chudori, Amarzan Loebis, and Bondan Winarno. However, Mr Sitompul said that literary style is no longer relevant in this digital era:

> I do not say our product is bad. It's just that it's difficult to reach the readers quickly. Dictions that we used tend to be literary, and many terms are not commonly used by the people. Whereas the key to reaching newsreaders today is to fit with the search engine algorithm. If we want to maintain this tradition, we have to be prepared for the consequences. (Interviewee no. 6, March 2019)

Mr Sitompul also stated that Tempo is still struggling to "differentiate between mission and tradition":

> Instead of focusing on our values we are preserving old practices. (Interviewee no. 6, March 2019)

Mr Sitompul also encouraged his fellow senior co-workers to let their juniors participate in news production processes. He said that he has confidence in his skill and work as a designer; however, when his work is compared to that of the younger staff, he feels it is obsolete and out of date. Mr Hadad expressed views like those of Mr Sitompul. He said that successful journalists are those whose writing impacts the public:

> What is the point of a good piece of writing if no one reads it? Journalists want as many people as possible to read their works. Therefore, journalists have to compromise with technology, as long as it does not take over essential roles in journalism, such as defining news angle. (Interviewee no. 1, March 2019)

While Tempo employs SEO and web analytics, Mr Hadad asserted that it does not use "clickbait". He said that there is a strong desire to use clickbait to increase website traffic and compete with other news outlets:

> We do not want to trick our readers just for traffic. (Interviewee no. 1, March 2019)

Regarding news selection for data journalism projects, as Mr Dhyatmika said earlier, Tempo.co would consider the issue or story of the day and find data to explore it:

> If we find the issue, the team will dig up data to complement the issue or big story. (Interviewee no. 2, March 2019)

This work process of Tempo.co adopts the traditions of *Tempo* daily and *Tempo* weekly, where their journalists are driven by issues, because its content is intended as a gateway to the daily and weekly publications, whether printed or electronic.

8.3 Discussion

The interviewees from Kompas.com did not clearly define data journalism. Mr Sodikin said that his team tried to produce data journalism projects by combining data and visualisation. Meanwhile, Mr Dhyatmika of Tempo.co provided a vivid definition of data journalism: it is any form of a news story that is initiated by data and places data as the cornerstone of the story is considered data journalism. This definition is based on the product, as revealed in previous studies on data journalism (Knight 2015; Rogers 2012).

For both Kompas.com and Tempo.co, data availability is one of the challenges of producing data journalism projects. This is also the generic finding in many studies on data journalism, as discussed in Chapter 2. However, when we discuss further the case in Indonesia, it shows that the obstacles are the combination of those found in the western democratic countries and beyond. The problems of data availability in Indonesia can be categorised in two ways: the data itself, and the institutions holding the data. Regarding the first category, four issues were raised by research participants: the scarcity of historical data, the lack of regional data, unclean data, and unfriendly data formats. As discussed in Chapter 2, these are similar to the problems data journalists face in Asia, Africa, and South America, with unfriendly data formats also being an issue in Norway (Karlsen & Stavelin 2014). Rather than being due to the lack of infrastructure and human resources, as found in Egypt and Zimbabwe (Fahmy & Attia 2021; Muneri 2019), the ignorance in data management in Indonesia, especially in the government agencies, may be seen as the remains of Suharto's New Order culture, which, as still occurs in some Arab countries, did not encourage accountability and transparency (Lewis & Nashmi 2019).

Regarding the second category, the Indonesian government has no clear policy for accessing data, although it has amalgamated data from all institutions, because of fears

that it could be misused. Applying the FOI law is an option, but, as found in Sweden and Spain, the FOI procedure does not fit the journalistic work process (Appelgren & Salaverría 2018). To cope with such problems, Filipino data journalists have created their own databases (Ilagan & Soriano 2019).

Despite having a solid reputation as news organisations, Kompas.com and Tempo.co represent two different sizes of business entities. Kompas.com is affiliated with a business conglomeration, and Tempo.co is owned by a company that only operates in the media business and struggles with financial hardship. However, these different sizes are not reflected in the newsroom when working on data journalism. Both media companies have similar human resources difficulties, particularly a shortage of professionals with a combination of data skills and editorial and design knowledge, and a scarcity of people with these skills who stay more than a year in the newsroom. This lack of human resources is because data journalism, as a new genre, requires a set of skills that are traditionally outside the journalistic field, especially skills in processing and analysing big data.

This study found that, instead of recruiting, Kompas.com and Tempo.co prefer to train existing human resources to become familiar with data journalism. This has opened the door to institutions outside journalistic fields, specifically not-for-profit organisations and technology companies that are concerned with quality journalism, to provide training, tools, and help with accessing data. This finding reinforces previous research conducted in Australia, Africa, and South America (Akinfemisoye-Adejare 2019; Borges-Rey 2019; Wright & Doyle 2019). Yet, as mentioned by the research participants, in Indonesia, the government and universities also fund and organise training in data journalism.

Meanwhile, while journalists are encouraged to learn new skills, they are still expected to meet their daily tasks, thus making data journalism, particularly the long-form projects, an additional task. Realising their limitations, when engaging in data journalism projects, journalists in Indonesia are now working with their colleagues from different media outlets, thus changing the journalistic work norm from competition to

collaboration. In 2017, Katadata.co.id collaborated with JARING[60] (Indonesia Network for Investigative Journalism) to publish a data-driven story and an infographic about abandoned coal mining holes in East Kalimantan province that caused 23 children drowned to death. This is happening at the global level too. Tempo.co, for example, collaborated in the Panama Papers project coordinated by the International Consortium of Investigative Journalism.

Commitment to using digital technology and adopting data journalism has manifested differently in the two media outlets. Kompas.com created an ad hoc team to produce stories to be published on their VIK and JEO pages. Tempo.co went even further by changing their organisational structure, adding the Media Lab consisting of people with data skills, designers, and an editor. Media Lab was responsible for streamlining the application of technology in all of Tempo.co's media outlets and in the production of its data journalism stories. Its ways of working also changed because of more significant roles gained by people who used to be in supporting roles or even outside the journalistic field. In line with Lewis & Usher (2016) finding that increasing numbers of professionals from non-journalistic backgrounds are securing leadership positions, Tempo's Media Lab was led by a designer who later held status as a journalist.

In both outlets, designers and people with data skills have also gained more respect because they were involved from the beginning of news production. As a result, as mentioned by Mr Dhyatmika and Mr Sodikin, representing Tempo.co and Kompas.com, respectively, journalists need to let go of some of their authority and only focus on their editorial expertise, which is also subject to adjustment based on news visualisation or presentation. Yet, Mr Dhyatmika perceived the involvement of designers and people with data skills as an expansion of the journalism profession in ways that are not limited to editorial people only.

Cultural changes are also taking place due to the adoption of data journalism, which requires a different expertise. It seems that the two media outlets have tried to keep the balance between the adoption of technology and the preservation of journalistic values.

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[60] JARING is the abbreviation for Jaringan Indonesia untuk Jurnalisme Investigasi (Indonesia Network for Investigative Journalism).

While their representatives see technology as facilitating and disseminating data journalism, they also appreciate how, in the context of journalistic values, the use of SEO can help journalists customise news stories to cater for audience behaviours and expectations. Hence, while adopting technology, Tempo.co and Kompas.com illuminate the finding of studies by Hanitzsch (2005) and Steele (2011), stating that Indonesian journalists have been characterised as adhering to ethics, being neutral and precise, and prioritising facts.

In Tempo.co, data journalism has changed its traditional writing culture from the literary to the SEO-fit, while avoiding clickbait. But in deciding what is news, Tempo.co still accommodates traditional news values, prioritising issue-driven stories over those that are data driven. This is because data journalism outputs in Tempo.co are positioned as teasers for investigative stories in their e-paper and magazine. For this reason, Tempo.co can be considered less confident in developing new initiatives in their digital platform because it still regards its daily and weekly outlets as its primary sources of revenue (Nguyen 2008). Meanwhile, Kompas.com stick to quality journalism, instead of focusing on the number of views of a particular product.

The findings from interview data show that, as a response to technological advancement, the players shaping data journalism in Indonesia are both inside and outside the journalistic field. Inside the newsroom, data journalism is a subfield in which agents from different backgrounds collaborate and negotiate their roles, changing the organisation both structurally and culturally. Discussion of the political lens shows that government institutions have constrained data journalism practice in the newsroom, forcing data journalists to create databases or to exploit personal relationships with the officials holding the data. This lack of resources also allows not-for-profit, technological companies, as well as government agencies, to contribute to the training of data journalists.

In terms of journalistic practice, since journalism competes in technological platforms, websites, and social media, it has to adhere to the logic of the platform, for example, SEO. From the field theory perspective, the use of SEO can be seen as symbolic violence – the exercise of non-physical violence by a more powerful group over a

subordinated group such that the latter submits to the values introduced by the former (Lawler 2011).

8.4 Conclusion

In this chapter, I have presented original data on the adoption of data journalism in two online news media outlets that are part of reputable legacy media organisations in Indonesia. The data were generated from interviews with six participants. Five of them represented news media outlets that have an extensive history in the print media industry, who kindly brought to this project the benefit of more than 20 years of experience in the field of media production. Four out of these five informants (Mr W Nugroho, Mr Sodikin, Mr Dhyatmika, and Mr Sitompul) were responsible for their respective online outlets adopting data-driven journalism. The fifth, Mr Hadad, controlled the whole activities of the Tempo, including Tempo.co. The sixth participant, Mr ID Nugroho, was a journalist who was also Head of Education Division at The Alliance of Independent Journalists.

I presented the data using six sociological lenses and I discussed the results of the study from a field theory perspective. Interview data quoted in this chapter show the effort of the aforementioned news outlets in deploying data journalism, hence answering Research Question 2: How do Indonesian news media outlets adopt data journalism? While confirming previous research, this chapter also found that research on data journalism in Indonesia should not be seen as just further research in a non-Western country. For example, there is a paradox when we discuss access to data and the involvement of other institutions in helping data journalists: while access to data is still a problem and some government agencies are reluctant to open their data, the government, through the Executive Office of The President of Indonesia, supports the adoption of data journalism by funding and organising training for journalists. Findings are similar to those of previous studies include a trend that people with non-journalistic backgrounds are being granted significant roles in the newsroom.

This chapter also indicates, and thus answers Research Question 3, that working on data journalism projects has changed the organisational structure and flow of work, as new divisions inside newsrooms are created and journalists learn to share their role with

designers and creative teams, thus challenging definitions of journalism. Finally, when using technology in the newsroom, journalists need to understand that the goal is to know which issues attract the public's attention. However, the selection of news is still based on journalistic principles, and data is likely to be chosen to complement news stories. Hence, while adjusting to technology, both Kompas.com and Tempo.co have tried to preserve journalistic cultures.

Chapter 9 will focus on case studies of three online news media outlets in Indonesia: Katadata.co.id, Tirto.id, and Lokadata.id. In contrast to Kompas.com and Tempo.co, these outlets are not affiliated with or supported by legacy media organisations. As with the current chapter, interviews with participants representing these outlets will comprise the data. The findings will also be presented using the same six sociological lenses mentioned earlier (Anderson 2013) and discussed in terms of field theory and its concepts, along with the concepts in journalism outlined in Chapter 3.

Chapter 9

The Newcomers: Data Journalism in Newer Online News Media Outlets

In Chapter 8, I explored the adoption of data journalism in two online news outlets, Kompas.com and Tempo.co, each owned by a different legacy media organisation. The findings of that chapter show how data journalism in Indonesia is both different from and similar to that in other countries. Among the significant findings identified are the presence of support from a government agency and the difficulty of sourcing data. In addition, working on data journalism projects has changed organisational structures and flow of work, as new work divisions have been created and journalists have learned to share their role with designers and creative teams, thus challenging standard definitions of the journalist. Furthermore, for Tempo.co data journalism is regarded as a teaser for other news products.

This chapter analyses the application of data journalism in Katadata.co.id (Katadata), Tirto.id (Tirto), and Lokadata.id (Lokadata), three online news media outlets that do not belong to legacy media organisations. This chapter demonstrates the dynamics and characteristics of the adoption of data journalism in these new media institutions and reveals the differences and similarities between them and the legacy media organisations discussed previously. As in the previous chapter, this chapter aims to answer Research Questions 2 and 3: How do media outlets in Indonesia adopt data journalism, and What changes are caused by the deployment of data journalism in newsrooms and journalists' professional practice?

This chapter argues that these three media outlets have been more adaptable to data journalism than their counterparts examined in the previous chapter. However, similarities include their difficulties in obtaining data and their engagements with not-for-profit organisations, technology companies, government agencies, and universities that provide courses to improve the data skills of their staffs. Further, working on data

journalism has changed journalistic doxa, so that use of numbers and visualisation are now more expected.

As in Chapter 8, data from original research interviews are interpreted through the six sociological lenses: (i) politics and public policy, (ii) economics, (iii) institutions and fields, (iv) organisation-level dynamics, (v) cultural history, and (vi) technological and news (Anderson 2013). The last two lenses were combined after considering data availability and overlaps between the two. This chapter concludes by describing the significance of the findings and suggesting areas for future research. While there are some similarities with the findings from the news outlets owned by legacy media, this analysis finds that Katadata, Tirto, and Lokadata are considered more adaptable to data journalism and its requirements.

As shown in Table 9.1, interview data came from eight participants from the three media outlets – Katadata, Tirto, and Lokadata. Four participants were from Katadata: its co-founder Mr Metta Dharmasaputra; data journalist Mr Nazmi Tamara; Editor in Chief Mr Yura Syahrul; and Creative Director Mr Lambok Hutabarat. Two interviewees were from Tirto: data journalist Ms Wan Ulfa Nur Zuhra, and its founder Mr Sapto Anggoro. Interviewees from Lokadata were Editor in Chief Mr Irawanto and an anonymous journalist from the Data and Research Division.

Before establishing Katadata in 2012, Mr Dharmasaputra had been a print media journalist working for *Bisnis Indonesia* daily and *Tempo* magazine/daily from 1999. During his time in *Tempo*, Mr Dharmasaputra, who has a bachelor's degree in economics and a master's degree in strategic management, gained a reputation as an investigative journalist. Mr Tamara had been a data journalist at Katadata for three years. He has a bachelor's degree in statistics. After interviewing Mr Tamara, I had a brief conversation with Mr Yura Syahrul, Editor in Chief of Katadata, who provided a relevant account on this topic. Mr Syahrul had been a long-time print journalist before moving to Katadata in 2015. Mr Hutabarat had more than 20 years' experience as a designer in numerous print publication before moving to Katadata in 2018.

Table 9.1

Research Participants from Katadata, Tirto, and Lokadata

Interviewee no.	Name	Organisation	Position
4	Ms Wan Ulfa Nur Zuhra	Tirto	Journalist, Partner Manager for Collaborative Reporting
9 9b	Mr Nazmi Tamara Mr Yura Syahrul	Katadata	Data journalist Editor in Chief
11	Mr Metta Dharmasaputra	Katadata	CEO, Co-founder
18	Mr Sapto Anggoro	Tirto	Founder, Editor in chief
23	Mr Lambok Hutabarat	Katadata	Creative Director
24	Mr Dwi Setyo Irawanto	Lokadata	Editor in Chief
25	Informant 25	Lokadata	Journalist, staff at Data and Research Division

Note. Informant number 25 chose to keep their identity confidential. Interviewee numbers refer to Table 4.1 in Chapter 4.

Ms Zuhra was a Partner Manager for Collaborative Reporting at Tirto*,* and she had been in the outlet for three years. She also worked at *Bisnis Indonesia* daily from 2012 to 2014. Ms Zuhra has a bachelor's degree in communication and a master's in data journalism from Birmingham City University, UK. In 2018, she founded Indonesian Data Journalism Network, a non-profit think tank organisation and community that promotes and teaches data journalism. During the interview, Ms Zuhra was accompanied by her colleague, Mr Aulia Adam, who specialises in in-depth reporting at Tirto.

Mr Anggoro started his journalistic career at the *Surabaya Post* and *Republika* daily before joining Detik.com, an online media outlet, as the operations director in 1998. He occupied the position for 13 years. In 2010, he established Binokular Media Utama, a digital-based media intelligence service. In 2015, Mr Anggoro initiated Tirto. He has bachelor's degrees in journalism and business management.

Mr Irawanto obtained his bachelor's degree from Bogor Agricultural Institute before joining *Tempo Magazine* as a reporter in 1990. From print journalism, he moved to

television, and in 2016 he was hired by Jitunews.com, an online news outlet. He joined Lokadata in late 2019, assuming the role of editor in chief after the outlet rebranded and changed its name from Beritagar.id. The other informant from Lokadata, "Informant 25", is a journalist who joined the newsroom in 2016, after gaining a bachelor's degree in mechanical engineering.[61] Previously, he worked for the Indonesian Broadcast Commission as a data specialist before a brief period at an online news outlet. This participant chose confidentiality.

Katadata, Tirto, and Lokadata are among the newer media outlets that are not connected to legacy media organisations. They were established after 2010, marking a new online news media model in which professionals apply visualisation, use data, and accommodate long-form journalism. In this regard, they contrast with the trend in online media set by Detik.com[62], which is characterised by competition to be the first in breaking news and less attention paid to accuracy (Margianto & Syaefullah 2012).

By devoting themselves to the new model, Katadata, Tirto, and Lokadata differentiate themselves from other online media outlets, which mostly generate news from comments made by sources, regardless of their credibility or authority in the issue. Mr Dharmasaputra explained:

> We have the luxury of freedom of the press. The quantity of news has increased sharply, however, the quality is less developed. We use data because we think journalists should make news based on statements and based on facts and data. Thus, we see data as a power to improve content quality. (Interviewee no. 11, March 2019)

Mr Anggoro said:

> Many (online) media outlets follow Detik.com. They disseminate not only facts but also opinions or claims. This makes me feel sad because the role of the

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[61] The second interviewee from Lokadata refused to have his name on this thesis. However, he allowed me to use the interview data.

[62] Detik.com is regarded as the pioneer of breaking news in online media in Indonesia (Margianto & Syaefullah 2012). While other online outlets (belonging to legacy media) only uploaded their paper version to the web, Detik published latest news by requiring their journalists to deliver reports from the field. Mr Sapto Anggoro, who joined Detik in 1999 told me that the idea was providing update news, instead of comprehensive news which takes time, so the readers were aware of the latest update on an event in no time. However, over time, most of the updates were just comments, and journalists heavily relied on sources to generate news.

media to enlighten is gradually lost. What happens if all comments are then accommodated into the news? As a result, journalism is like social media. Though what distinguishes the two is verification. When it comes to verification, we need data. (Interviewee no. 18, March 2019)

Mr Irawanto said:

We see that people are no longer satisfied with the phrases "high growth", "big profit", "sufficient food" and "grow faster". They demand more precise answers and explanations. These are what we need to present to them. Data journalism comes from precision journalism. (Interviewee no. 25, May 2021)

In recognition of its work on quality journalism, Katadata won second place in the Indonesian President's Cup for print and cyber media in 2019, specifically for its long-form report titled *Saatnya kebangkitan ekonomi kreatif* (Momentum for creative economy revival), a feature complemented by the use of data and visualisation (Redaksi 2019). As for Tirto, it was named the most innovative cyber media by the Indonesian Journalist Association (PWI) in 2018 (Damaledo 2018), and one of its reports on the Indonesian migrant workers was selected as the best journalistic work by the foreign ministry in 2018 (Alaidrus 2018).

Before presenting findings from the interviews, I will present brief profiles of Katadata, Tirto, and Lokadata to provide the context of the data and discussion.

9.1 Katadata.co.id

On 1 April 2012, three journalists, Mr Dharmasaputra, Mr Heri Susanto (both of whom previously worked for *Tempo*), and Mr Ade Wahjudi (a radio journalist), founded Katadata. With a sum of IDR300 million (about US$30,000) and supported by Lin Che Wei, an Indonesian financial analyst, this news outlet was designed to provide news, information, and data on the economic and business fields based on in-depth research (Dharmasaputra 2013). Yet, it was not until January 2014 that Katadata announced itself as a media outlet after launching its website, Katadata.co.id, with a total of ten personnel, including the founders. Among these ten, six were former print journalists.

The name Katadata is derived from *kata* (word) and data. Mr Dharmasaputra said that Katadata was built on two pillars: news and research. Hence, Katadata brings together journalistic and analytical skills, modelling itself on *The Economist* magazine. Mr Dharmasaputra explained:

> Our initial idea was to imitate *The Economist*, which has journalistic strengths, and The Economist Intelligence Unit, which has excellence in the research field. We want to combine these two forces in one digital platform.

> Katadata wants to become an integrated news data and research portal. So, it is not only news but also a data element, and there is a research element. The products are not only for news but also for data and research products. (Interviewee no. 11, March 2019)

This outlet gained broader attention in November 2014 during debates about the cut in the fuel subsidy in the early weeks of President Joko Widodo's first term. Mr Widodo planned to axe the subsidies to respond to a skyrocketing world oil price and avoid a severe deficit budget. By reducing the subsidy, the president expected that the fund could be allocated to build infrastructure (Widodo 2014). However, the plan was opposed by members of parliament and community groups. It was feared that cutting the subsidies would harm vulnerable and poor people, who form the support base of the Indonesian Democratic Party of Struggle[63] (Javadi & Priamarizki 2014). During the controversy, Katadata published ten data-based infographics to explain why the subsidies should be reduced (Yudhistira 2014). Mr Dharmasaputra reported:

> One of the graphics was shared by a Facebook account named Joko Widodo, and suddenly Katadata's server went down because more than 50 thousand internet users tried to access Katadata as it was not prepared for the visits. (Interviewee no. 11, March 2019)

For Katadata, using data and visualisation avoids its operating in a "red ocean" of fierce competition because it is almost impossible for small new outlets to compete with established players. Mr Dharmasaputra noted:

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[63] The Indonesian Democratic Party of Struggle returned to power after winning the 2014 election.

Data usage is our advantage amid fierce competition in the online media industry. We didn't choose to be in the "red ocean", but had to find the "blue ocean", so we had to be unique. What is unique about us is data use, which is relevant because we specialise in economic and business issues.

We saw data as the future. And we know that media companies cannot solely rely on the news business. Katadata, which is not supported by big funding, must seek revenue engines. We believe data development will be a source of income for Katadata. (Interviewee no. 11, March 2019)

On its website, Katadata has a specific tab called "Jurnalisme Data" (Data Journalism). It consists of two sub-tabs: "Infografik" (Infographic) and "Analisis" (Analysis). As the names imply, Infografik is a channel to find infographics, and Analisis is a sub-tab to locate long-form data journalism projects. While new infographics are published every day, the long-form data-driven journalism projects are uploaded irregularly. As for data itself, Katadata has a dedicated website named "Databoks" (Databox).

Politics and Public Policy: Our Problem Is the Availability of Data

For its work on data journalism projects, Katadata relies on data provided by other institutions. Mr Tamara stated that he is seldom able to generate data by himself because of time constraints:

We use secondary data. This kind of data is released by external agencies: state institutions, independent institutions, or associations. I once collected data myself because I was assigned to do research requiring field surveys. (Interviewee no. 9, March 2019)

However, he stressed that this secondary data is not easy to obtain:

It is still inadequate. (Interviewee no. 9, March 2019)

For this reason, Mr Dharmasaputra stated that, apart from capital and human resources, the availability of public data in Indonesia had become the main obstacle to developing data-driven journalism at his news outlet:

Nowadays, everyone is talking about the importance of data, but our main problem is data availability. Is the data available and accessible? That's the problem. It's not easy to find data. (Interviewee no. 11, March 2019)

Data reliability is another concern; Mr Tamara said that authoritative institutions sometimes produce conflicting data:

When data is available, we do not know which one is reliable. For example, some ministries issue different data on the same topic. This is a problem for us, which ones should we publish on the website. We were once reprimanded by two ministries for presenting different and conflicting data.

For example, data related to the education budget, released by the Ministry of Education, differs from that of the Ministry of Finance. Also different from the Central Bureau of Statistics data. (Interviewee no. 9, March 2019)

For data that are available and accessible, Mr Tamara noted there is often lack of detail, which makes it difficult for data journalists to compose engaging stories from the data. He gave the example that data from cities like Jakarta, Bandung, and Surabaya provide more detail to the sub-district level. In contrast, data from other cities do not provide those details. This also makes it harder for journalists to combine and compare data from different state institutions. He said:

Apart from being limited, there was a problem with the element of data. For example, some indicators only exist in the data released by some regions, particularly major cities. So, we cannot describe the complex situation in regions that are far from major cities. Also, data management in each region is different, making it difficult for journalists to compare or combine data. (Interviewee no. 9, March 2019)

Economics: Combining Data Skills and Journalistic Skills

As indicated earlier in this chapter, Katadata was initially neither supported nor funded by a legacy media organisation and it did not have large investment. To his employees, Mr Dharmasaputra repeatedly stressed that the company would not recruit many people to compete with other online news outlets:

If you think of a boat, I want Katadata to sail slowly, and gradually get bigger. (Interviewee no. 11, March 2019)

However, things changed after Katadata obtained more financial assistance in 2018. In addition to receiving an undisclosed level of support from Lin Ce Wei, Katadata had been funded by Media Development Investment Fund (MDIF), a US-based non-profit organisation that manages investment funds for independent media in countries where media freedom is considered under threat (*Mission* 2020)[64]. In 2018, Katadata completed its second phase of funding from MDIF, and it received new financing from East Venture, a Singapore-based venture company. These funds were allocated to develop the outlet as a data-driven news media by using machine learning to generate in-depth news and data-based analyses (*Katadata Raises Funding Led by East Ventures* 2018). Mr Dharmasaputra said:

We couldn't build a data system from the start [since the founding of Katadata]. We just started less than a year and a half [ago]. This requires a lot of time and effort. We have to allocate resources, funds and skills, which are not small.

We must have data engineers, data analysts, data scientists, statisticians, and staff who understand modelling. Unfortunately, these people have been outside the realm of the media. (Interviewee no. 11, March 2019)

From a small newsroom (about ten journalists) and research team (15 staff, including designers) in 2016, Katadata was employing 108 staff in its production line (not including the supporting and marketing teams) by 2020 *(Katadata 2020).* Nonetheless, recruiting talent in data is not a shortcut to the smooth adoption of data journalism. Mr Dharmasaputra gave an example of some statisticians and data scientists he hired. Despite their data processing skill, most of them had difficulties when they were asked to interpret and narrate the data.

Many people apply to Katadata as a statistician, but people who understand statistics can only process data. They find it difficult to interpret data, let alone

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[64] From 1996 to 2020, MDIF has disbursed more than U$236 million in form of loans and equity investment, and technical assistance and other grants for 122 clients in 42 countries (*Track record* 2020).

write it down. Many data scientists can only play with data and cannot generate

insights or write from it. (Interviewee no. 11, March 2019)

It is therefore essential to train the statisticians and data scientists so they can obtain

journalistic skills. This is because, as Mr Dharmasaputra noted, there are only a few

data journalists with solid journalistic backgrounds in the country:

There are very few data journalists. There may even be no journalists who can

process the data. It's the rarest talent, so in this early stage, we have to produce

that talent. So, it is a long process for Katadata. (Interviewee no. 11 March

2019)

At Katadata, the only person to describe himself as a data journalist was Mr Tamara, a

data analyst at the Katadata Insight Center. Mr Tamara said that a data journalist is a

journalist who has skills in data. Journalism experience is therefore essential, as most of

the data journalists he knew have both a professional background in journalism and a

passion for data. He said:

Because data journalists are actually journalists who specialise in the data

processing. If one with data background or analysis is then asked to produce

journalistic work, they are usually shocked. (Interviewee no. 9, March 2019)

Hence, Mr Tamara emphasised the importance of building data journalists' skills at

Katadata by encouraging recruits to both play with data and write. Mr Tamara said that

in addition to data analysts and scientists, some of Katadata's recruits held bachelor's

degrees in communication, so they were more familiar with journalistic skills:

They only need to be more familiar with data. (Interviewee no. 9, March 2019)

As for technology, Mr Tamara said he preferred Microsoft Excel or Spreadsheet to

process data. But if the data is extensive (big data), he will use advanced applications

such as SPSS (Statistical Package for the Social Sciences), R, and Python. Mr Tamara

defined big data as data that cannot be processed or analysed using Excel or

Spreadsheet, for example, data that consists of millions of rows.

Yet, these types of data are still rare in Indonesia. I can use R and Python, but I

prefer to use the spreadsheet. Using software or applications is to simplify the

data to make it easier to analyse and understand. (Interviewee no. 9, March 2019)

With its existing human resources, Katadata published seven long-form, data-driven journalism items between July 2019 and December 2019. In a sample collected during the two constructed weeks in the second half of 2019, Katadata produced 623 news stories over ten working days. These included 14 infographics. The by-lines of the infographics reveal they were created by three writers and five designers. As for the illustrations, only two infographics credited an illustrator. In addition, of the seven long-form, data-driven journalism projects, six were created by one journalist, and the seventh by another journalist.

Institutions and Fields: Fight for Talents

Mr Dharmasaputra had a simple definition of data journalism: it is a journalistic project based on data instead of only on statements. He elaborated:

> Journalistic work can be strengthened by data, such as historical data, so its context becomes broader. Usually, an article only takes a snapshot of an event, but once it is strengthened with data, the news context can be more expansive and tell a lot more. (Interviewee no. 11, March 2019)

Furthermore, Mr Tamara suggested that when quantitative data produced by credible institutions such as ministries, statistical agencies, and institutions are limited, data journalists generate data themselves:

> We [journalists] can also collect data through a survey or in-depth interview. But what we are looking for is not only the opinion of sources or respondents but also quantitative data, data in the form of numbers. This differs from the journalists we have known so far. (Interviewee no. 9, March 2019)

Hence, a data journalist is required to have data skills in addition to the traditional basic journalistic skills[65]. Mr Tamara pointed out:

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[65] Research conducted by Pierce & Miller (2007) ranks basic journalistic skills demanded by news editors in hiring. The top five are write effectively, interview, objectivity, develop source, and write a lead. A content analysis of job announcements conducted by Guo & Volz (2019) found that, in the digital era, a

A data journalist must be able to process and interpret data. More than that, more skills may be needed, including visualising data, because the products produced by data journalism cannot be separated from visualisation. A data journalist narrates the numbers in an article and describes them in graphs, maps, or other visualisations that support the product so that readers can easily understand the product. (Interviewee no. 9, March 2019)

Therefore, to create a data-driven journalist team, hiring staff with data skills is crucial. In the previous section, Mr Dharmasaputra is quoted as saying that the availability of human resources is among his primary concerns when building data journalism capacity in Katadata. This is because of the need for skills that were traditionally outside the journalistic field. As a result, when recruiting staff, Katadata has to compete with other companies beyond the journalistic realm. In addition, it needs to adjust its salary benchmark to make it attractive for people with such talents and to prevent them from being recruited by others.

Suddenly we have to compete with other industries outside the media sector to get these talents. As a result, their compensation (salary) is higher, and turnover is also high because they quickly move to non-media companies. Non-media companies (can offer higher wages because) generally have a larger business scale. (Interviewee no. 9, March 2019)

Accordingly, in addition to recruiting new staff, Katadata prefers to train its personnel, either internally or by involving other institutions outside the journalistic field. Mr Tamara said he attended some training courses held by Indonesian Data Journalism Network (IDJN). Katadata also encourages its staff to find opportunities for overseas training. In 2016, a journalist was assigned to attend the Asian Investigative Journalism Conference in Nepal to get the latest insight of data journalism, and in 2017 the same person participated in the Global Investigative Journalism Conference in South Africa. Both events held sessions on data journalism[66], including finding stories involving data and using tools to process and visualise data (GIJN 2016, 2017). The conferences were

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journalist is expected to possess the following innovative skills: social media publishing, web development, content and audience analytics, and Python usage.

[66] The Second Asian Investigative Journalism Conference organised 29 sessions on data alone, while the 10th Global Investigative Journalism Conference held 46 specific sessions on data (GIJN 2016, 2017).

organised by the Global Investigative Journalism Network, an international association of non-profit organisations that support and promote investigative journalism (GIJN 2020).

Organisation-Level Dynamics: Adjusting Organisational Structures

The need for different and new skills to build its capacity in data to produce, among other things, data-driven journalism has caused Katadata to revamp its organisation many times. As mentioned in the previous section, this online news outlet had 108 production personnel in 2020. Table 9.2 shows their allocation into six divisions, which are different from those of the traditional news organisations.

Table 9.2
Katadata's Production Team

Division/team	Number of staff
Editorial	33, including 3 staff for social media engagement and 2 for digital engagement
Multimedia	17, including a photographer.
Premium content (paid)	3
Katadata Insight Center (It offers customised research)	14, including 3 data analysts
Researcher and content strategist	20, including 7 creative content staff.
Data and technology	21, including 7 in the data management team

Source: Katadata (2020)

Mr Dharmasaputra said the organisational structure aims to push Katadata beyond the journalistic realm by broadening its business scope:

> We want not only to position Katadata as a news producer but also as a news source. Data analysis and research that we produce can be a source of news for Katadata and other media outlets. In short, Katadata wants to move outside the news media sector but still be related to the media. This is what we call the media as a service (MAAS). We have core competencies in the media field but provide various services and activities. (Interviewee no. 11, March 2019)

This goal of structural organisational change has inevitably posed a dynamic challenge to Katadata's human resources management. The arrival of the new entrants with their

unique skills has also affected the careers of some existing employees. To minimise the impact of this, Mr Syahrul, Editor in Chief of Katadata, said he was cautious in recruiting new staff, including data journalists, for the news division. He said that, despite their being some data journalists in Jakarta who would be happy to join Katadata, he preferred to train existing staff:

> We have recruited a lot of people. If we continue to recruit, I am afraid there will be problems in managing human resources. As much as possible, I prefer to encourage existing employees to improve their proficiencies and learn new skills so that their careers can also improve. (Interviewee no. 9b, March 2019)

Mr Tamara[67] said Katadata had a WhatsApp group to discuss the news, including topics suitable for data journalism projects:

> So, it is flexible. Everyone can suggest or propose a story. (Interviewee no. 9, March 2019)

When it came to visualisation, he said that a writer or data journalist must explain his design concept to the designer:

> Data journalists must possess the ability to explore visual ideas. They don't just process data and write it down. A data journalist must have a visual concept, although it doesn't have to be detailed. The graphic team (designers) will then develop the idea of choosing colours, fonts, pictograms, placement, and others. (Interviewee no. 9, March 2019)

Mr Hutabarat noted that even though the visual and editorial teams are in different divisions, communication between writers and designers or illustrators was smooth because they understand visualisation:

> The collaboration between the visual and editorial teams is getting smoother. The editorial team gave a lot of design suggestions. I am not much involved in discussions about visualisation because a designer is allocated to respond to the editorial team requests. (Interviewee no. 23, November 2020)

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[67] During this research interview, Mr Tamara was in the editorial team; he was moved to Katadata Insight Center in 2020.

In addition to the WhatsApp group, Mr Hutabarat said Katadata uses the Google Drive application to internally store and circulate drafts or data:

> Drafts and visual materials are sent via Google Drive so that each party can see, for example, the latest draft that has to be visualised or the latest infographic ready for review. (Interviewee no. 23, November 2020)

While there is a collaboration in the production of data journalism projects, Mr Hutabarat stated that the editorial team has the final say in deciding whether a visualisation meets publication requirements:

> There has to be one party to decide, and it is the editorial team's call. (Interviewee no. 23, November 2020)

However, Mr Dharmasaputra realised that journalists need to cede part of their authority:

> Currently, the one that drives editorial meetings is social media. So, journalists are driven by technology and the public who happens to be closer to technology. From that point of view, the journalists' role is reduced. (Interviewee no. 11, March 2019)

Cultural History, and Technology and News: Driven by Data

Mr Tamara said that working on data journalism was different from working on other journalistic projects. The availability of data is essential. A story, despite meeting news values, could likely be dropped if data in the form of numeric evidence is not available. He explained:

> As the name implies, data-driven journalism, while still paying attention to current affairs, also emphasises data. Events that can be worked on to become a data journalism project must have data that can be processed and developed.
>
> If data is not available, it is not suitable to be considered as data journalism. If so, then there are two options for data journalists: generating data by conducting surveys or finding other topics to work on. (Interviewee no. 9, March 2019)

Mr Tamara said the availability of data, including big data, has revolutionised the way journalists work. Instead of seeing people and conducting field reporting, data journalists can generate many angles by observing data. He recalled his work on the Lion Air flight 610 accident in Indonesia, 2018, in which all passengers and crew died:

> Regarding Boeing[68], there are many angles that we can develop into stories. From the data obtained, we can discuss the impact of accidents in Indonesia and Ethiopia or the aircraft manufacturer's shares' price movements. We can make visualisations about Boeing planes, which countries use them, how many planes have been produced, and so on. (Interviewee no. 9, March 2019)

Mr Dharmasaputra said the availability of data and the tools to process it have empowered Katadata to uphold journalistic values because it could present quality content, including data journalism, to the public amid hoaxes and disinformation. He said the Katadata website did not target high traffic since it did not implement clickbait:

> For Katadata, hoaxes are also a blessing in disguise. This is an opportunity to present quality content because the public needs credible media. Media companies that will survive are those that supply quality content, not those that take part in the social media frenzy and hoaxes. (Interviewee no. 11, March 2019)

Mr Tamara said that even without clickbait and falling behind in speed compared to other online journalistic products, the data journalism projects he had worked on still drew many visitors to Katadata. He said that the average readership for long-form data journalism projects was above 30,000, with one article read 150,000 times:

> What surprised me was a product that may have been more complicated and longer but turned out to be high in readability. Moreover, it is still read several months after being published. This means that this product is also a reference for readers. (Interviewee no. 9, March 2019)

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[68] Boeing 373 MAX was the aircraft type of Lion Air Flight 610 and Ethiopian Airlines Flight 302. Both experienced fatal accidents within six months (Mufti & Kahfi 2019; Reals 2019).

9.2 Tirto.id

Tirto.id went online on August 3rd, 2016. The website declares that its funding was provided by the founders, Mr Anggoro, Mr Teguh Budi Santoso, and Mr Nur Samsi (Tirto 2016). Like Mr Anggoro, the Editor in Chief, Mr Santoso, the Chief Content Officer, had begun his journalistic career in *Republika* daily before moving to Detik.com. Tirto is named after Tirto Adhi Soerjo, Father of the Indonesian Press, who was declared a National Hero by the Indonesian government (Tehusijarana & Gorbiano 2019). In the Javanese Language, Tirto also means water. Hence, like water, journalism is indispensable; it flows and offers clarity to the public (Tirto 2016).

In his interview, Mr Anggoro said he initially preferred to use the term precision journalism to describe his news outlet's characteristics because he aimed to produce and disseminate accurate and precise information that the public can rely on to make decisions:

> I would say that we are practising precision journalism. I often speak on various forums to explain precision journalism is. In precision journalism, data is one of the tools to produce accurate journalistic works. But it seems that people prefer to use the term data journalism. So be it. After all, "precision journalism" term is less attractive. (Interviewee no. 18, April 2019)

Mr Anggoro said the use of data is important, not only to present reliable information but also to verify statements made by news sources, especially politicians; news consumers can decide whether to believe them or not:

> The sources can say whatever they want. But we add data in the story so the readers can decide. (Interviewee no. 18, April 2019)

Despite doubting that data journalism could fight against hoaxes and disinformation, Ms Zuhra said that stories that come with data still have more credibility (Interviewee no.6, March 2019). She added that transparency is crucial to data journalism and in order to be transparent Tirto provides its audiences with access to raw data:

> We endeavour to be accountable and transparent, for example, by providing access to raw data that we use to the public. We also describe how we analyse this data. So, the public doesn't just see the final product. The public can judge

whether we work correctly and are ready to accept criticism. (Interviewee no. 4, March 2019)

In addition to using data, Tirto applies long-form journalism (more than 1500 words). Such long-form journalism projects come with infographics and can be found in the "In-depth" tab. According to Mr Anggoro, the adoption of long-form journalism counters the notion that readers, mainly Generation Z, are not interested in reading long articles:

I could not find evidence saying that the youngers prefer instant news. But they seem to be labelled that way. However, if we keep supplying our younger generation with simple and less quality reading, I cannot imagine what will happen to our civilisation in the future. Hence, it is our effort to build a better society. (Interviewee no. 18, April 2019)

Regarding infographics, Mr Anggoro said:

The infographic is the core [of long-form journalistic work]. (Interviewee no. 18, April 2019)

Tirto is well known for being very critical of the government, including reporting about separatism issues in West Papua. Its reports often highlight human rights violations, presumably conducted by the Indonesian National Police and Army in the provinces[69] (Indra 2016; Nathaniel 2020; Taher 2019; Widhana 2018).

Politics and Public Policy: Government Data as Not Suitable for Investigative Stories

Ideally, a data journalist could take advantage of the data produced by government institutions. However, Ms Zuhra said this was not the case in Indonesia:

It is very difficult. (Interviewee no. 4, March 2019)

Regarding government data, when I asked her to point out which part is difficult – accessibility, reliability, or complexity – she replied:

Everything. (Interviewee no. 4, March 2019)

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[69] Indonesia's Papua, globally known as West Papua, is divided into two provinces, namely Papua and West Papua.

She gave the following example:

> We have the BPS (Central Agency on Statistics). BPS data can be accessed and downloaded in a proper format, for example, Excel. But there are many things that the BPS data cannot explain. For example, BPS data uses provincial units, whereas we need data for smaller units, such as sub-district. (Interviewee no. 4, March 2019)

Other than from the BPS, Ms Zuhra stated that obtaining data is painful. She recalled her experience when trying to work on a data journalism project mapping Jakarta's crime, which ended with her abandoning the project. The project was inspired by similar work she had done in Birmingham in the United Kingdom while pursuing her master's degree.

> We wanted to map the crime rate in each sub-district in Jakarta. We requested data from the Jakarta Regional Police, but they refused for reasons that did not make sense. Then we went to Police Resorts (lower police command under the Regional Police). Some provided data, some others did not. Data from each Police Resort are different, so they could not be compared. The process of requesting the data took two months, and it was not even completed. We finally aborted the project. So, dealing with government agencies is quite depressing. (Interviewee no. 4, March 2019)

Furthermore, Ms Zuhra stated that data from the government may not help work on investigative stories; Tirto had created its own database for such projects:

> We scrape data from websites and social media and create a database. For example, we investigated several "ghost" media websites which their names mimic some authentic websites in Papua. Sometimes, we create data by doing surveys and research. (Interviewee no. 4, March 2019)

When having trouble accessing data, Ms Zuhra never considers using the FOI mechanism. She noted:

> I heard it takes time to challenge an institution that refuses to provide data. There is also a court proceeding to decide whether the data is public or

confidential. So, I never tried, and I do not know where to go. (Interviewee no. 4, March 2019)

Economics: Many Tools, Lack of Human Resources

On its website, Tirto declares that its three founders provided the funding for the news outlets. In 2019, it stated that the company's projected value was IDR400 billion (USD29 million[70]) (Tirto 2016). Mr Anggoro said:

> In the beginning, no one was interested in funding Tirto. Hence, we invested our own money to realise this idea. I was lucky because I had another business that could support the establishment of Tirto. Later, I received a convertible loan. (Interviewee no. 18, April 2019)

According to Mr Anggoro, hiring has been the most challenging part of establishing Tirto. This is because he needs to recruit researchers who can digest the complexity of data and write about it for the general public in the long form. He also noted that Tirto prefers to recruit on a recommendation basis:

> We never advertised vacancies. I chose a simple method, which is based on the recommendations of our existing employees. So, I encourage some employees to recommend someone appropriate to fill the vacant position here. (Interviewee no. 18, April 2019)

In 2020, Tirto employed 42 journalists and writers, the research division had four people, and it had a visual and graphic team that consisted of 20 employees. In a sample gathered during two constructed weeks in the second half of 2019, Tirto produced 63 infographics or 6.3 per each working day. All the graphics were components of long-form articles.

Ms Zuhra, who oversaw the adoption of data journalism at Tirto, said the outlet's problem is the lack of people who can work with the tools that are essential for data journalism. As a result, it is difficult to produce complex data journalism projects other than infographics.

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70 The conversion is based on the 2019 average exchange rate of Indonesian Rupiah and US Dollars, published by Statista (2020a).

Many tools can be used, but in Tirto, only two people can use, for example, R or Python. I also have limitations on using Python. I only use that application for data scraping. So, our human resources are inadequate. (Interviewee no. 4, March 2019)

Ms Zuhra said that many of the tools available at no cost are sufficient to support a data journalist. They include Tableau, Excel, Google sheet, R, Python, Datawrapper, and Florist. She encourages her colleagues to become familiar with these tools (Interviewee no. 4, March 2019).

Institutions and Fields: A Journalist Has To Learn Data Skills

Ms Zuhra, who did her master's degree in data journalism, defined the genre from the perspective of the journalist and the audience. She said that data inspires the journalist to create stories and helps the audience understand them:

Data journalism uses data to tell stories that are important and relevant to the public. Data can be a source of the stories and can also be a tool for the audience to understand the stories, or a combination of both. (Interviewee no. 4, March 2019)

Ms Zuhra stated that when working on a data journalism project, a journalist is expected to have skills in data, including the ability to understand statistics, and have computational thinking:

In my opinion, data skills are the ability to do computational thinking and understand statistics. These two things are basic requirements. A journalist should understand data and know how to analyse it. Even if she/he doesn't know how to interpret it, at least she/he knows that the data can be worked on, and he can ask other people for help to process the data. To start, the journalist has to be able to use a spreadsheet. (Interviewee no. 4, March 2019)

These skills are crucial because journalists at Tirto are encouraged to complete their projects without asking for help from others. Ms Zuhra explained:

In the Indepth team, each journalist has to do his/her project without asking for assistance from the Research team. (Interviewee no. 4 March 2019)

Consequently, everyone is expected to boost their expertise and learn new skills. Mr Anggoro said that he had been supportive of his employees when they wanted to upgrade their proficiencies:

> I support those who want to learn because the media industry can only produce quality work if the people involved in the production process have high intellect and abilities. (Interviewee no. 18, April 2019)

Ms Zuhra said some of Tirto's journalists take advantage of the Global Investigative Journalistic Network (GIJC) training:

> I attended training in Seoul, Kathmandu, and Johannesburg, which was held by GIJC. Tirto paid for all the expenses. I then shared what I had learned with my colleagues in Tirto. They are curious to know more. (Interviewee no. 4, March 2019)

In doing data journalism, Tirto understands the need for collaboration with other institutions. Ms Zuhra said she was tasked with developing collaboration with other media outlets and non-journalistic organisations. One of her efforts in encouraging collaboration was creating the IDJN, as mentioned earlier in this chapter:

> We hold a regular discussion. We invite experts to share their knowledge, and we learn together to apply that knowledge. (Interviewee no. 4, March 2019)

Organisation-Level Dynamics: There Are Many Ways To Tell a Story

When explaining data journalism skills, Ms Zuhra likened them to investigative skills, which the journalist should possess:

> The ability to analyse data should be mastered by all journalists. Therefore, in Tirto, it is my task to encourage my colleagues to have this skill. (Interviewee no. 4, March 2019)

Hence, she did not feel comfortable with the title data journalist:

> I am annoyed with the title "data journalist" because it seems different from other journalists. Supposedly, data skills can be learned by every journalist. I

find it (data journalist) a gimmick, and it is exaggerated. The skill should be a basic proficiency for journalists.

Data journalists' term is the same as investigative journalists. They are special and different from other journalists, even though they do the same thing – seeking, processing, and conveying information. Instead of creating gaps between journalists, data skills should become additional skills without making new positions. (Interviewee no. 4, March 2019)

At the time of this research, the organisational structure in Tirto reflected Ms Zuhra's idea. The outlet did not have a specific team to work on data journalism projects. The Tirto production team consisted of three divisions: Indepth, Mild Report, and Current Issues. She said that each division is expected to produce their stories complemented with data. When it came to visualisation, Ms Zuhra said the journalists supported a multimedia team and designers. When infographics were part of a long-form article, credit by-lines for designers were written only as their initials.

Ms Zuhra emphasised that working on data journalism and visualisation projects required journalists to respect other skills:

The role of journalists has not diminished. In fact, journalists are empowered. Journalists who do not understand design do need help, and that's fine. Journalists collaborate with IT personnel and designers, and of course, journalists must drop their egos. For me, who started my career in this era of collaboration, this is a good thing. Journalists must be humble. Writing is indeed important, but there are many ways to tell a story. (Interviewee no. 4, March 2019)

Cultural History, Technology, and News: Driven by Current Affairs

Ms Zuhra said data journalism at Tirto should uphold journalistic values. The use of data should strengthen news credibility, while visualisation should make the news more attractive and entertaining:[71]

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[71] Indonesian Press Law states that among the role of the press is to entertain (*Law No. 40 on the Press* 1999).

> We try to tell the truth with data. Indeed, I realised that data could be inaccurate or even lying, but it is much better rather than relying on comments[72].
> (Interviewee no. 4, March 2019)

When deciding what will be news, Tirto still considers the traditional news values, as outlined by Galtung & Ruge (1965). However, the use of data can provide new and different perspectives on a story already circulating in public. For example, Ms Zuhra recalled her investigation into the assets of an Indonesian travel agent (First Travel), whose owner embezzled US$70 million of customers' money and sent it to the UK, including for restaurant ventures:

> We discovered the irregularity of changing the name and owner of a restaurant in England that belongs to the owner of First Travel. Name changes were made many times and were close to trial dates in Indonesia. We also discovered that the registered owner's name was a chef who only worked for the restaurant. This finding resulted from three months of processing court data and accessing the United Kingdom's registrar of companies [companies house] website.
> (Interviewee no. 4, March 2019)

Furthermore, Mr Anggoro said that by offering quality journalism, Tirto avoids the SEO race and the use of clickbait:

> I do not want to undermine our readers' intellectualities. (Interviewee no. 18, March 2019)

9.3 Lokadata.id

Lokadata.id is the continuation of Beritagar.id, which was founded in 2015 by Mr Didi Mr Nugrahadi, Mr Herman Kwok, and Mr Wicaksono. Of these, Mr Nugrahadi and Mr Kwok are associated with GDP Venture, a venture capital firm in "digital communities, media, commerce and solution companies in the Indonesian consumer internet industry" (Venture 2021). Mr Nugrahadi is also known as the founder of Detik.com (see footnote 2). Wicaksono, now a social media advisor, started his career with *Media Indonesia*

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[72] Speaking in Indonesia, Ms Zuhra use the word "ludah" (saliva), derived from "jurnalisme ludah" (saliva journalism). The term is widely known among journalists in Indonesia. It describes the habit of some journalists who are only reliant on comments made by their sources without undertaking verification.

daily in 1994 and was at *Tempo* Magazine (1998–2011)[73] before embarking on his online venture with MSN ID news portal in 2011.

From the beginning of its establishment, Beritagar has been committed to data-driven journalism. On its website, Lokadata proclaims its main focus is on data journalism:

> Lokadata is a media company with a primary focus on data journalism and research. We believe that, in the future, the role of data will be increasingly crucial in presenting a new perspective on an event or trend and giving a new colour to journalism in an increasingly challenging era. (Lokadata 2021)

Data journalism became the focus after Beritagar was rebranded as Lokadata in December 2019. Lokadata's Editor in Chief, Mr Irawanto, said that Beritagar's emphasis on long-form journalism and diversity reports from Indonesia's regions has proven to be financially unsustainable because it requires enormous resources:

> Apart from the business consideration, the technology has allowed us to work on data. There is an engine to read and process data, so we do not need to involve many people. In addition, the availability of data is better compared to the past. There is improvement in the government commitment to provide data, although we need to verify it. (Interviewee no. 24, May 2021)

Informant 25 added that using data has been part of journalism from the beginning of the profession:

> In the past, news outlets utilised data. Yet, data journalism that we practice today is supported by the burgeoning technological tools and medium that enable journalists to process big data and present it. (Interviewee no. 25, July 2021)

Furthermore, Mr Irawanto noted that by applying data journalism, Lokadata endeavours to encourage data use when decision makings:

> Our grand goal is to participate in an endeavour to encourage data use in decision making. We want the public to get more into data, work on data, and

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[73] Between 2009 and 2010, Wicaksono and I worked closely in *Tempo* Magazine's technology desk.

use data in the field of economy, politics, or even in their personal life, as well as curb hoaxes and disinformation. (Interviewee no. 24, May 2021)

Politics and Public Policy: There is Always an Alternative to Replacing Missing Data

Despite saying that the Indonesian government has a greater commitment to providing data, Mr Irawanto noted that some data is messy and unreliable because the government also uses data as a political tool to build positive perceptions:

> The government understands that the public needs numbers to be convinced. The problem is, sometimes the numbers from the government are messed up. For example, the president said that we had not imported rice in the last three years, but data from the Central Statistics Agency show otherwise. (Interviewee no. 24, May 2021)

However, Mr Irawanto also said that because data on the economy is much more accountable than other types, Lokadata appears more focused on business and the economy, even though it is a general interest news outlet:

> Actually, I want the data that we talk about about the economy and social and political. However, economic data is more widely available and neutral. Political data are rarely unbiased because they are produced by political parties or political consultants. Social data is actually also interesting, but unfortunately, not many institutions provide adequate primary data. (Interviewee no. 24, May 2021)

Hence, Lokadata is more dependent on data provided by the government institutions in charge of the economy and business entities, along with the Indonesian Central Statistics Agency. Informant 25 said:

> Since last year [2020], we have the luxury of data provided by the Finance Ministry. We do not need to rewrite the data because the format is suitable for us. (Interviewee no. 25, July 2021)

Informant 25, who runs day-to-day data journalism production in Lokadata, said the formatting of data is another challenge he faced; for example, some government institutions prefer to publish their data in PDF format instead of Excel:

Many government agencies release data in PDF format. There is also a tendency, for example, local governments, to convert their data from Excel to PDF, especially regarding regional expenditure data and audits. Indeed, this regional budget data is most sought after by various CSOs [civil society organization] who oversee and monitor local governments. (Interviewee no. 25, July 2021)

Notwithstanding the challenges of data availability and formats, Mr Irawanto emphasised that the editorial team always finds a solution and never abandons a planned project. He said there are always alternatives when specific data is not available:

We always try to find alternatives. If there is no suitable indicator to describe one thing, we will use other indicators, which may not 100 per cent describe what we highlight but are relevant and related. (Interviewee no. 24, May 2021)

Economics: A New Business Model

As already mentioned, Lokadata is financially supported by a venture capital company. However, this does not mean the news outlet is not expected to make revenue. In 2019, Lokadata (then Beritagar) laid off 35 of its 40 journalists. Mr Irawanto said it then developed a new business model by deploying data-driven journalism (Interviewee no. 24, May 2021).

Lokadata's "About Us" page shows the outlet consists of four divisions: Editorial, Data and Research, Technology, and Marketing & Sales (Lokadata 2021). There are nine journalists in the editorial team, including the editor in chief, and 19 staff in the data team, including two data visualisers. Some employees in the data team also have experience in journalism, including Informant 25, who participated in this research. Although most people were working on data, Mr Irawanto said that many of them were absorbed in client-based requests:

After we implemented data journalism, it turned out that many clients, private companies and state-owned enterprises, were interested in hiring us as consultants for their data analysis. Thus, the data team was divided into two, one [team] to serve clients and the other [smaller team] to assist the editorial in producing articles. (Interviewee no. 24, May 2021)

With a small team supporting the newsroom, Lokadata uses technology and hires people on a contract basis to process data. Informant 25 said:

> We do not have significant resources, so we apply tools to read data and input it into our system. We also hired gamers to re-type documents into excel. These gamers are extraordinary, they type very fast. (Interviewee no. 25, July 2021)

Yet, gaining insight from data, giving it meaning, and transforming it into a story are very challenging, according to Mr Irawanto:

> As experienced by other media outlets, it is indeed tricky. Technological developments have made it easier for us to process data. But looking for people who understand data and journalists who are not allergic to data and graphs is actually not easy. Therefore, we are learning by doing. The risk is that sometimes we misinterpret or draw conclusions. But the important thing is that we have to keep improving. (Interviewee no. 24, May 2021)

Hence, Mr Irawanto said in-house training is crucial to boosting data journalists' skills in his newsroom. In addition, Informant 25 said that a journalist who works on data needs to upgrade their skills because there are always new skills to learn, especially for tools and applications. He also noted that journalists or data analysts must understand design to envisage the output of their data journalism stories:

> In my opinion, data journalism is expensive. Data analysis is costly in terms of infrastructure and human resources. Many new skills need to be learned. Several journalists, including foreign graduates [who have these skills], but I do not see many. Media managers have to think about funding data journalism. (Interviewee no. 24, May 2021)

Institution and Fields: Human Resources for Client-Based Projects

As mentioned earlier, Mr Irawanto said Lokatada's goal was to adapt data journalism to provide the public with precise and reliable information. However, when he was asked to define data journalism, he replied:

> Maybe I am wrong, actually what I wanted to introduce to my colleagues at Lokadata is precision journalism. Precision journalism must be supported by the

use of first-hand data from primary data. But it requires more resources. At the moment, we only use secondary data from official institutions, which we think are valid. So, data journalism is actually our endeavour towards precision journalism. (Interviewee no. 24, May 2021)

Meanwhile, Informant 25 said data journalism is intended to help people extract the essential message from complex information or facts:

Data journalism is getting the public to understand quickly [a problem]. The readers do not care about the complexity of the data and the various variables that journalists face. In addition, data journalism is a form of verification of the claims of public officials. Are these claims appropriate or supported by data? (Interviewee no. 25, July 2021)

To work with data, journalists need to be familiar with related tools or applications. Informant 25 said journalists in Lokadata's data team could work with Excel and Tableau (a visualisation tool). These skills were acquired after Lokadata (then Beritagar) hired and eventually recruited a team of consultants who are experts in the digital tools, including coding (Interviewee no. 25, July 2021). Furthermore, Informant 25 said he was lucky because his educational background had prepared him to use numbers and the tools to process them:

I happen to have an engineering education background. This is quite helpful because, during my college, I studied various visualisation tools and mathematics. I am a number freak and have never been afraid of numbers, especially now that we have many resources to process numbers that we can find on the internet. (Interviewee no. 25, July 2021)

As previously mentioned, Mr Irawanto encourages his team to learn and improve their skill by holding in-house training. He said Lokadata also sends their journalists to training courses organised by other institutions:

We are encouraged to participate in various training. I was sent for training in Singapore for a week. There was also a colleague of mine who was sent to Portugal. Domestically, many colleagues participate in training held by the

Google News Initiative and training held by UMN [Universitas Multimedia Nusantara]. (Interviewee no. 25, July 2021)

However, Mr Irawanto added that now that there is less time for training because more resources need to be assigned to client-based projects:

> Suddenly, we lack human resources, so we cannot send them out for training. But we encourage the journalists to be involved in the data enthusiast community so they can learn of new knowledge. (Interviewee no. 24, May 2021)

Organisation-Level Dynamics: The Editorial Team Is the "General"

In adopting data journalism, Lokadata has had to adjust its organisational structure. As mentioned earlier, its website indicates it has four divisions: Editorial, Data and Research, Technology, and Marketing & Sales (Lokadata 2021). Mr Irawanto said data journalism is a collaboration between the editorial and data teams:

> A small team within the data team supports the editorial team. (Interviewee no. 24, May 2021)

A firewall is therefore essential in the data team because it serves clients outside the newsroom, as well as the editorial team. Mr Irawanto said:

> When we adopted data journalism, we received many requests from other institutions to manage their data. We must deal with this by creating a firewall so that the data team working to support the editorial does not mix with those working on client-based projects. (Interviewee no. 24, May 2021)

Mr Irawanto noted that Lokadata's reporters and data team comprise fresh graduates. At the senior level, the editors are those who have strong print journalism backgrounds, including himself:

> At the reporter level, we recruit fresh graduates, including statisticians and those who are used to researching on campus. So, they understand data and are interested in journalism. At the upper layer, most of them have print journalism backgrounds.[74] (Interviewee no. 24, May 2021)

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[74] Mr Irawanto mentioned several people, including two senior journalist who have been journalist for three decades.

Furthermore, Mr Irawanto said that working on data journalism requires the collaboration of people with different skills. Stories are often proposed by data analysts and designers instead of by journalists. The editorial team also allows the visual staff to improvise in terms of data presentation.

> A number of the stories we proposed did not come from fellow reporters in the field but data processors. So, they are involved not only in the next stage but from the planning stage. Their involvement is not only in the area of supporting roles.

> Colleagues who work in graphics and video also sometimes propose something new, including the way of presentation. Because it must be admitted that those on the editorial team are not great in this regard. (Interviewee no. 24, May 2021)

Informant 25 revealed that collaboration can be challenging in the beginning because it deals with people from different knowledge backgrounds:

> Usually, furious debates occur when discussing design concepts, for example, the type of chart we should use. We need to discuss this so that there is no misinterpretation. One solution is that we use a "tester". We asked ordinary people to see if they could understand what we were doing. (Interviewee no. 25, July 2021)

Mr Irawanto used the military term *general* to describe how when a debate ends in a deadlock, the editorial team will always decide:

> The editorial team is the general. We guide our colleagues even though they have greater roles. (Interviewee no. 24, May 2021)

Cultural History and Technology and News: The Visual Element Is the Spearhead

For Lokadata, adopting data journalism is an attempt to preserve and maintain journalism's cultural value and role in society. As mentioned earlier, the outlet both contests comments made by people in power and offers precision to the audience. Mr Irawanto explained:

When the president [of Indonesia] said we had not imported rice for the last three years, we needed to be sure by checking data provided by the Central Statistics Agency. When the government said half of a million people left Jakarta for Eid homecoming, we needed to scrutinise how they got the number. (Interviewee no. 24, May 2021)

Informant 25 said that it is the nature of journalism to work with data; however, data journalism is different because we have abundant data and the technology allows us to process and present them in very creative ways:

Since the first, journalism claims have always been based on data. The technology that exists today is a luxury for us. We can use various applications to process hundreds of millions of databases. So, data journalism emerged because of digitisation. (Interviewee no. 25, July 2021)

Mr Irawanto gave an example of how technology provided data that made it possible for journalists to recreate an event and show the audience who should be responsible for an incident. During a protest against the Job Creation Law in Jakarta in October 2020, a TV station revealed a group of people who had plotted and set fire to a bus shelter to give the impression that the protest was anarchic. It found that these people had taken some time to observe the protesters and to talk with each other before starting the fire. The TV station incorporated images from social media posts and videos obtained from CCTV cameras around the location (Interviewee no. 24, May 2021). Hence, Informant 25 said he believed that the role of journalism still exists and is even more significant:

In fact, this is a new challenge for journalism. From my experience, the basic things like verification and accuracy still apply. Designers and data analysts only see numbers and interpret them in a visual form. Therefore, journalism is the central core. (Interviewee no. 25, July 2021)

Informant 25 said this challenge is new because journalists need to be open to new types and sources of information and presentations. For example, the availability of data is now crucial if an event is to become news. He also explained the role of the visual element in a story:

> Visual elements are the spearhead. Readers don't care how many rows of data and how many Excels are processed by journalists, they just want a story to be simpler, easier to understand, and easy to share. Visuals are much more important to me. (Interviewee no. 25, July 2021)

9.4 Discussion

Data from interviews with the research participants show that Katadata, Tirto, and Lokadata have different views on the definition of data journalism. From the perspective of the product, Katadata defined it as a story based on numerical data instead of statements made by news sources. Lokadata explained it from the audience's perspective as a journalistic work intended to help people understand a complex problem easily. Meanwhile, for Tirto, data journalism is the use of data to tell a story that is important to the public so they can understand it. These different perspectives and definitions confirm that data journalism has vague boundaries (Fink & Anderson 2015) and that professionals in the field define it based on their individual experiences (Hermida & Young 2019).

The participants shared similar goals for data journalism: the use of data aims to improve the quality of journalism, strengthen verification, and encourage people to pay attention to and use data in decision making. These goals align with the view that the role of journalism is to improve democracy by enriching public debate (Cushion, Lewis & Callaghan 2017), with the journalist as a knowledge broker (Donsbach 2009). In addition to their idealistic views, Katadata and Lokadata implemented data journalism to leverage their businesses, while Kompas.com and Tempo.co did not consider this. For Katadata and Lokadata, finding new business models is crucial because they would not be able to compete against established media outlets if they produced only conventional journalistic products. Hence, they us data to create markets for readers and as a consultant to groups and organisations that need advice on presenting and disseminating data.

When working on data journalism projects, Katadata, Tirto, and Lokadata confront the same problems regarding available data as Kompas.co and Tempo.co: access; inconsistent formats applied by different agencies or regional governments; inaccuracy;

and lack of detail. Data inaccuracy includes information that does not represent a factual condition, such as high rice production and its shortage, and conflicting data from different agencies. These are the problem that data journalists also face in Iran (Salimi 2019). Data formatting is a problem because some government institutions preferr to publish their data in PDF format, especially at the regional level. These PDFs are often scanned from photocopied documents, making them more difficult to convert to digital files. Research participants from Lokadata said this commonly happens in data related to budget spending.

An example of lack of detail is data that is only available for provincial and district units, whereas data journalists might need data at sub-district and village levels. Mr Ignatius Haryanto, a journalism lecturer at Multimedia Nusantara University and media trainer, raised concerns about data conflict. He said that data is considered a commodity to protect one's interests:

> This is one of the reasons for conflicting data. For example, the Ministry of Agriculture's food data is different from the Central Statistics Agency. Data in the Ministry of Agriculture is also different from data owned by Bulog (a government-owned company that deals with food distribution and price control). I don't know how to solve this problem. What is clear is that this is an irony when the government is trying to be transparent. (Interviewee no. 12, March 2019)

Furthermore, informants from Tirto specifically mentioned that government-published data did not help the production of investigative stories. As well, the use of FOI legal procedures to obtain data does not cater to the journalistic work process since it could take months to process a request, with no guarantee that data would be released. Hence, an increasing number of data journalists in Indonesia are collecting data themselves and creating databases. As has also occurred in the UK (Knight 2015), this situation has resulted in fewer investigative stories being published and more data journalism projects focusing on data visualisation to engage readers.

Katadata, Tirto, and Lokadata also found difficulties obtaining and retaining human resources. The main problem is the limited number of people with skills in data who are

also able to draw insights from and write in the journalistic style. A problem arose when Katadata and Tirto expanded their businesses' involvement in research and data because they had to allocate members of their data teams to cater to their consulting clients' needs. Mr Dharmasaputra of Katadata said that expanding the business beyond the journalistic field is inevitable in the digital era because media companies can no longer survive on income from their traditional businesses and advertising (Interviewee no. 11, March 2019).

When technology disrupted the news industry, accompanied by the arrival of new entrants in the field, the traditional media industry became less profitable. Katadata and Lokadata expanded their playing fields, positioning themselves to compete for human resources against other companies that use data. However, given their business sizes and the benefits they offer, news media outlets are proportionately inferior to such competitors. In mid-2019, Ms Zuhra left Tirto and joined Glance Indonesia, a Singapore-based artificial intelligence-based software company that produced news, and in 2021, Mr Tamara left Katadata for Tokopedia, an e-commerce unicorn[75] in Indonesia.

Because it is has been hard to recruit journalists with data skills, the three news outlets examined in this chapter have had to train their existing staff to work with data. In addition to internal training, they have relied on courses conducted by not-for-profit organisations, technology companies, government agencies, and universities. Katadata and Lokadata have also assigned their staff to participate in training overseas. Such courses are also venues where journalists interested in data can meet and establish their networks for future collaboration. For example, as mentioned earlier, Ms. Zuhra, initiated the IDJN, a non-profit training organisation and community that also facilitates collaborative reporting. IDJN has held regular data journalism workshops for journalists, designers, programmers, and students in Jakarta. In 2020, IDJN started its Data Journalism Hackathon project, allowing journalists, designers, and programmers to work together so they can share knowledge and support the use of technical skills when working on data-driven journalism.

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[75] A term used in the venture capital industry to describe a privately held startup company with a value of over $1 billion.

Along with their new business models, Katadata and Lokadata have adjusted their organisational structures and created teams with data skills to work together with editorial teams of journalists, who commonly lack numerical skills (Heravi 2018). The results presented in this chapter confirm the findings of other studies that show that data journalism has introduced a collaborative culture, not a competitive one (Hermida & Young 2019), thus allowing a greater role for expertise that is traditionally beyond the newsroom (Arias-Robles & López López 2021) because these people were considered as the leading force in news innovation in newsrooms (Engebretsen, Kennedy & Weber 2018). According to Mr Dharmasaputra, journalists need to let go of some of their authority, including news selection, be humble, and respect the other roles because there are many ways to present a story apart from writing. Nevertheless, editorial teams should make the final decision before a story is published (Interviewee no. 11, March 2019).

All the research participants quoted in this chapter agreed that the use of technology, including the adoption of data journalism, is intended to strengthen journalism's role in the midst of hoaxes and disinformation. Data is a tool of verification, which is the essence of journalism (Kovach & Rosenstiel 2007). Although data themselves are generated by institutions that may have political agendas and thus may produce misinformation (Westlund & Hermida 2021), my interviewees felt that the data were much better than oral statements.

Meanwhile, with more people from different backgrounds now involved in journalism projects, changes are also occurring in how newsrooms view news stories. While current affairs topics are still considered necessary, they can only be news stories when sufficient numerical data are available, as emphasised by Mr Tamara:

> If data is not available, it is not suitable to be considered as data journalism.
> (Interviewee no. 9, March 2019)

Ms Zuhra admitted that her team had to stop working on a data journalism projects because they could not get data. Meanwhile, Informant 25 said that visualisation, which data can generate, is most important so that people can engage with and understand the message conveyed. These echoes research that argues that the likeliness of an event to

be visualised and presented in infographic as a news value (Harcup & O'Neill 2017). In other words, journalistic doxa is not unchangeable (Tandoc Jr 2013). Furthermore, as occurs in Brazil (Gehrke 2020), the need to be transparent has encouraged Tirto to allow its audience to access the raw data of their data journalism projects.

9.5 Conclusion

This chapter provides new insights into the state of data journalism in Indonesia by presenting original findings from eight interviewees representing three online news media outlets that are not affiliated with legacy media organisations. The interviewees were Mr Dharmasaputra, Mr Anggoro, and Mr Irawanto, each of whom occupied a leadership position in one of the three outlets. As journalists with strong print-media backgrounds, each has been in the media business for three decades. The other interviewees were Ms Zuhra, who had two years of experience in newspapers before joining Tirto in 2016; Mr Tamara, who was a fresh graduate when he joined Katadata in 2017 after an internship; Informant 25, who had started his career in an online newsroom less than ten years before; Mr Syahrul who had 20 years of experience in print-media an online; and Mr Hutabarat who also had 20 years in of experience in designing newspaper, magazine, and online new media.

Insights from the findings include the business considerations for adopting data journalism that are different from those of the established outlets owned by the legacy media organisations. Katadata and Lokadata have used data journalism to expand their businesses as consultants in processing and presenting data. However, the need to recruit staff has brought them head-to-head with players outside the journalistic field. They mostly need individuals with a combination of data and writing skills, yet such staff prefer to work at technological companies because the benefits offer there are much better. As a result, these media outlets have struggled to establish data teams.

I argue that these three media outlets have been more adaptable to data journalism than their counterparts examined in the previous chapter. However, similarities include their difficulties in obtaining data and their engagements with not-for-profit organisations, technology companies, government agencies, and universities that provide courses to improve the data skills of their staffs. In a newsroom, people with data and design skills

attract more appreciation, and their opinions are regarded as important for the quality of the news. Furthermore, working on data journalism has changed journalistic doxa, where numbers and visualisation are now more expected.

Chapter 10 will present the findings from the interviews with participants representing two government institutions: the Ministry of Communication and Information Technology, and the Ministry of Finance. These institutions were selected because they have used data journalism skills and visualisation to enrich their campaign materials and to respond to hoaxes related to their portfolios. My reason for discussing entities outside the journalistic field is that changes in a field will affect its surrounding fields (Benson 1999). Just as data journalism has changed the journalistic field in Indonesia, it will also impact the public relations field. This includes government agencies tasked with public relations functions such as producing and disseminating information and maintaining their public profiles.

Chapter 10

Beyond the Journalistic Field: The Government Agencies

Chapter 9 explored the adoption of data journalism in the three selected online news media organisations (Katadata.co.id, Tirto.id, and Lokadata.id) that are not affiliated with legacy media outlets. The interview data shows the similarities and differences between these outlets and the news organisations discussed in Chapter 8. Similarities include their journalists' perceptions about challenges accessing government data. Among the differences revealed are that Katadata and Lokadata were more adaptive to data journalism, seeing it as an opportunity to find a business model outside the traditional news industry.

This chapter presents data from the original research interviews exploring two government agencies' efforts to adopt data journalism skills to improve their public relations capabilities. I selected the Ministry of Communication and Information Technology (MoCIT) and the Ministry of Finance (MoF). The former is the leading agency in government relations, and the latter is the agency that is frequently the target of hoaxes. Another agency, the Ministry of Public Works, was considered for inclusion but I removed it because it employed other parties to create publication materials, including infographics. Table 10.1 lists the interviewees whose statements were instrumental in this chapter. Interview responses from other research participants from other institutions will be added where are relevant.

Because this thesis is about data journalism, I need to emphasise that the practices in government agencies are not journalism. These agencies deploy data journalism skills to improve how they disseminate their views. Data journalism, a genre in journalism, "is an approach to knowledge creation, verification, and communication rooted in values such as honest inquiry and fairness (Lewis 2021, p. 80). Meanwhile, Grunig and Hunt (1984) define public relations as an act of managing the flow and content of information from an organisation to its public. Public relations is heavily shaped by journalism

because it monitors journalistic products and responds to them; hence, it is often called the child of journalism (White & Hobsbawm 2007). However, unlike journalism, which endeavours to be fair, balanced, and bipartisan (Macnamara 2019), public relations emphasises the positive aspect of an organisation or product to gain public or stakeholder approval (Yi 2017).

This chapter is designed to answer Research Question 4: How do Indonesian government institutions learn and deploy data journalism skills to disseminate their views? I argue that MoCIT and the MoF used data journalism skills to respond to hoaxes and educate the public using data-driven publications. This chapter shows that as a field adjacent to journalism, government public relations can be heavily influenced by news outlets. Their skills for producing infographics have been learned from news media organisations.

Table 10.1
List of Participants Quoted in This Chapter

Interviewee no.	Name	Organisation	Position
7	Dimas Aditya Nugraha	Ministry of Communication and Informatics	Head of Sub Directorate of Audio Visual and Social Media/also in-charge of website Indonesiabaik.id*
8	Nufransa Wira Sakti**	Ministry of Finance	Head of Communication Bureau
8b	Rahmat Widiana	Ministry of Finance	Head of Publication Management/ Editor in Chief of Media Keuangan (Finance Media)***
19	Rudiantara	Ministry of Communication and Informatics	Minister

Note. Interviewee numbers refer to Table 4.1 in Chapter 4.
*Indonesiabaik.id is a website operated by a team under the Ministry of Communication and Informatics.
**During the interview, Mr Wira Sakti was accompanied by two of his two subordinate officers. One of them was Mr Rahmat Widiana.
***Media Keuangan (Finance Media) magazine published by the MoF

The main questions I asked were: Why did their agencies adopt data journalism skills? How did they learn the skill? How does the red tape impact their human resources and access to data? Data from the interviewees were analysed using thematic analysis, a method for identifying, analysing, and reporting patterns (themes) within data (Boyatzis, 1998). This method moves from organising and describing data to interpreting various aspects of a research topic. I allocated the interviewees' responses to the following three parent nodes: response to hoaxes and data presentation; capacity building and human resources; and access to data and working process. Before presenting the findings, I will provide a brief background of the agencies and their dissemination mediums to provide a context for these results.

10.1 Indonesiabaik.id and Finance Media

The Republic of Indonesia Law No. 39 of 2008 stipulates that the MoCIT is responsible for executing communication (public communication) and information technology affairs, including its infrastructure (*Law No. 39 on State Ministries* 2008). In 1999, following President Abdurrahman Wahid's inauguration, the ministry (known as the Department of Information) was dissolved because its role was not considered relevant to the country (Nailufar 2020)[76]. In 2001, Wahid was deposed and his successor, President Megawati, restored the ministry.

In the MoCIT, the Directorate General of Public Information and Communications (IPK) carries the role of public relations. Mr Rudiantara said that the IPK is the continuation of the Department of Information, informing the public about policies and news related to the government:

> Actually, we have government PR, which used to be called the Department of Information, now one of the directorates general, namely the Directorate General of Public Information and Communications. We continue to improve this directorate. The IPK has a network in each ministry and has groups to interact with. (Interviewee no. 19, April 2019)

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[76] Pro-democracy activists praised the dissolution of the Department of Information because during the New Order era this department had become a government tool to control the news media through licensing and censorship (Steele 2012). In 2001, there was concern that the revival of the department, as a ministry, would bring back government control over the media (APr 2001).

As the government's PR arm, the IPK is the production house for broadcast material, including infographics, the data for which is obtained from all other ministries and agencies. At the time of the interviews, the core of this directorate-general was the Subsection of Data Processing, under the Section of Program Planning and Reporting at Secretary Directorate of IPK. This subsection was responsible for producing and disseminating messages and information. Mr Nugraha said:

> Before 2015, we only store the data, but with the arrival of Mr Rudiantara, we were encouraged to create added value of the data. (Interviewee no. 7, March 2019)

The contents were published on a website Indonesiabaik.id (Good Indonesia), instead of the ministry's website (kominfo.go.id). According to Mr Nugraha, the ministry's website aimed to disseminate information related to its portfolio:

> Our content (in Indonesiabaik.id) encompasses all sectors. Initially, we hoped that it would be published in the medium under the Kominfo brand, but we were upset because it was often not published. We had spent energy and money, but the dissemination team did not use our products. Finally, we created Indonesiabaik.go, which was also part of the Government Public Relations project initiated by the minister. (Interviewee no. 7, March 2019)

In the MoF, the leading bureau that serves the public relations function is the Bureau of Communication and Information Services, which is under the ministry's secretariat general. In addition to its portfolio, it is responsible for the nation's finances and assets. The ministry was under public scrutiny because the minister, Sri Mulyani Indrawati, was popular[77]. This meant the ministry and minister frequently became the targets of hoaxes, as stated by Mr Sakti:

> Most hoaxes are about the government debt, constantly recurring. Likewise, when we announce the national budget. The minister's statement was often quoted out of context. Because our minister is popular, some people tagged (mentioned) her so that their content went viral. (Interviewee no. 8, March 2019)

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[77] Minister Mulyani was frequently touted as the presidential or vice-presidential candidate. A survey by Lingkaran Survei Indonesia in 2019 included her in the 15 strongest prospective candidates for the 2024 Presidential Election (Sembiring 2019). She also won numerous awards from foreign agencies including being named one of the world's best finance ministers and Finance Minister of the Year for East Asia Pacific form Global Markets in 2020 (Fauzia 2020).

Furthermore, under the bureau is the Publication Management Section, with three subsections: Print Publications; Electronic Publications; and News and Documentation (*Finance Minister Regulation* 2018). Since 2015, the Publication Management Section has published the monthly *Media Keuangan* magazine (both printed and e-magazine), and is responsible for its content (Figure 10.1). The magazine has consistently produced infographics, which are also published on the ministry's website's "Infografis" page. The magazine has received several awards, including multiple prizes (platinum, gold, and silver) in the 2019 Indonesia Public Relation Indonesia Awards and Gold Winner in the 8th Indonesia Inhouse Magazine Awards in the same year (Ip, Hpy & Nr 2019; Sakti 2019).

Figure 10.1
Homepage of Indonesiabaik.id (Left) and Media Keuangan E-magazine (Right)
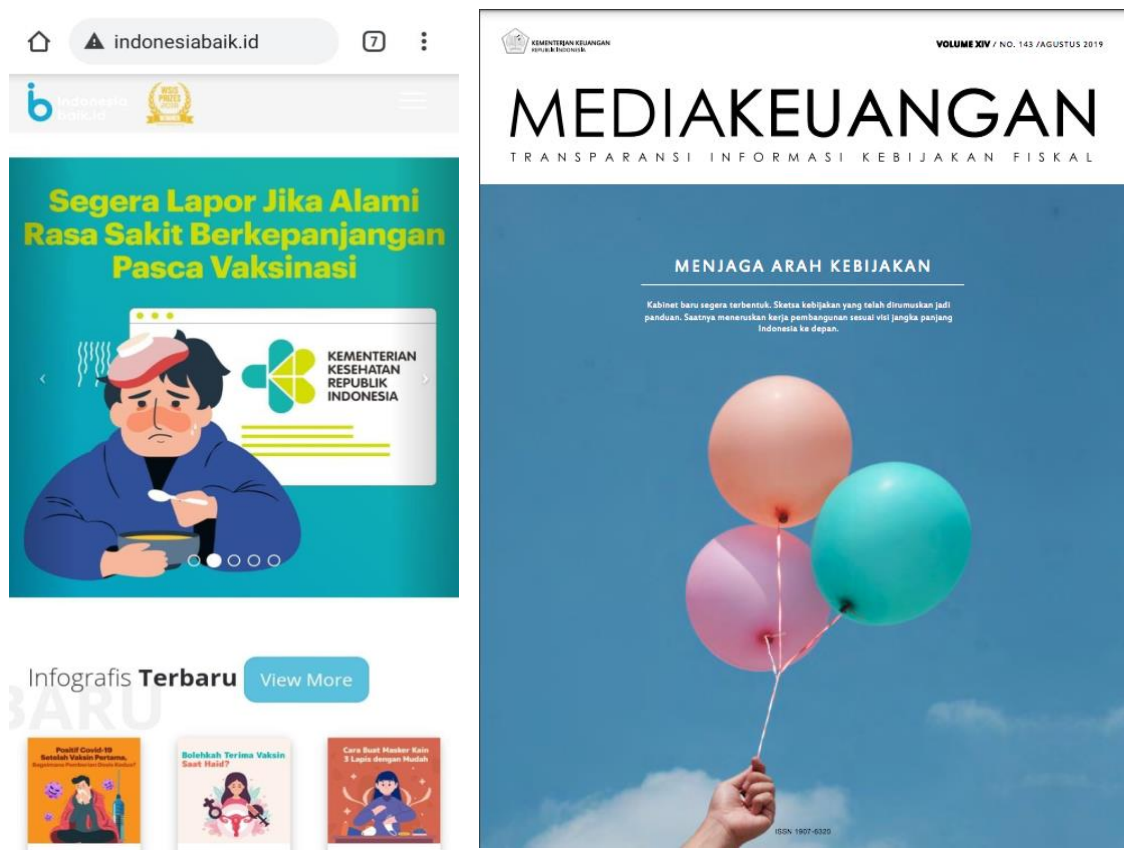
Images captured on 28th May 2021.

10.2 Responses to Disinformation and Data Presentation

On Tuesday, July 27, 2017, former Indonesian Minister of Law and Human Rights Yusril Ihza Mahendra told journalists that the House of Representatives could remove President Joko Widodo from office because the government debt was beyond 50 per cent of the national budget, which, he said, violated State Finance Law (Ginanjar 2017). Mahendra made the comment in the wake of the controversy surrounding the government plan to issue a regulation in Lieu of Law on Mass Organisation that would ban Hizbut Tahrir, a political-religious organisation for whom Mahendra was the group lawyer. Mahendra was quoted as saying "The government should issue a regulation in Lieu of Law of State Finance, instead" (Ginanjar 2017). In response, the Indonesian economist Bhima Yudhistira said that the ex-minister had not read the State Finance Law correctly. Yudhistira said the law authorised the government to have debt up to 60 per cent of the gross domestic product (GDP) instead of the national budget (Zuhriyah 2017). Yudhistira stated that the national debt at that time was under 30 per cent of the GDP.

As noted above, Mr Sakti said hoaxes and disinformation repeatedly focused on government debt. Those who produced the disinformation included high profile politicians such as Mahendra and even Rizal Ramli[78,] who briefly served as the Coordinating Minister for Maritime Affairs in President Joko Widodo's first term (see Figure 10.2). "The hoaxes are related to politics," Mr Sakti told me during an interview for this research project (Interview no 8, March 2019). While his ministry was not concerned about the political agenda, Mr Sakti said that some hoaxes or disinformation must be responded to. To avoid being involved with the political debate, he recommended that responses be based on data:

> Usually, we respond by using data and facts. We have complete and valid data. Let the data and facts explain. So, we do not have to say much. We just explain what we have done without associating or comparing them with the previous administration (Interviewee no. 8, March 2019)

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[78] Rizal Ramli had a stint period as the Coordinating Minister for Maritime Affairs from August 2015 to July 2016. Previously, he served as the Coordinating Minister for Economic Affairs (2000-2001) and Minister of Finance (June-August 2001). Meanwhile, Yusril Ihza Mahendra was the Minister of Law and Human Rights (1999-2004) and Minister of State Secretary (2004-2007).

Mr Sakti said that some of the hoaxes and disinformation required responses because these can educate the public and improve its understanding of national financial governance. He then said that the infographic is one of the options to respond to hoaxes and disinformation:

> Responding to hoaxes and disinformation at the same time to educate the public. There are many ways to respond. Among other things, through infographics and short videos, or I just respond on my Facebook. (Interviewee no. 8, March 2019)

Figure 10.2
Capture of Disinformation (Left) Made by Rizal Ramli and His Clarification (Right)

Translation.

"The government offer another bond ($2 million). The yield is 11.625%, 4 March 2019. This is the highest yield. Vietnam only set 5%. We know that rupiah is getting strong supported by a super high loan. Creditors are happy but more burden to the people. The Finance Minister is getting sidetracked."

"Apology. The yield of 11.625% belonged to the old bond. Not the upcoming one, which is 8.5%. However, it is still higher compared to Vietnam (5-6%)."

Images captured on 30th May 2021.

In the case of Mahendra's comment, the MoF's Facebook account published three infographics explaining the state of the government debt. These graphics showed that the government debt was still better compared to some other countries, and it was managed prudently (RI 2017). A few months earlier, *Media Keuangan* magazine had published an infographic about the government budget. As Sakti said, government debt was a repeated target, and it drew people's attention (Interviewee no. 8, March 2019).

Infographics were also applied to counter hoaxes in the MoCIT. Mr Nugraha said that his agency's infographics were outcomes of journalism practice and were crucial during the flow of hoaxes and disinformation:

> We call this data journalism. Data journalism is essential in the midst of the spread of hoaxes because this journalism relies on the power of data. People paid less attention to the importance of data in the past, so data was only stored without being used. (Interviewee no. 7, March 2019)

One example of an infographic made by Nugraha's team in Indonesiabaik.id that described the COVID-19 Sinovac vaccine substances was published in February 2021 (Oktari & Syaifullah 2021) (Figure 10.3). This graphic was aimed at countering hoaxes related to the vaccine rollout in Indonesia. Hoaxes related to the Chinese-made vaccine included claims that it could change people's belief in God, it was a Chinese weapon to eradicate Indonesians, it contained monkey cells, and Indonesia is the only country that imported Sinovac (Wicaksono 2021).

In addition to responding to hoaxes and disinformation, Mr Nugraha said infographic production was aimed at the public's understanding of how the government does its job by presenting data that is useful and engaging:

> For us, this is of the significances of data journalism. We can present the meaning of data from a database. The database, which is a collection of government documents, is very rigid and unfriendly to read. So, it needs to be simplified so people can understand. (Interviewee no. 7, March 2019)

Moreover, Mr Nugraha continued, there was a lack of awareness of data utilisation in many government agencies. Government data (e.g., reports, minutes of meetings, and analysis) ended up as a pile of bulk paper in libraries or even destroyed. Hence, he wanted to work on data and encourage other government agencies to do the same so that the people could benefit from it[79]:

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[79] Nugraha's account reflected the policy of President Joko Widodo. On many occasions, the president said that data is getting more important. Moreover, he dubbed data as the new oil (Kahfi 2019).

In the past, there was a term in which those in charge of data management, either public relations or the library, were marginalized and did not perform well. In fact, data is very important, especially if it is properly stored and easily accessible for use. People in government often ignore this. After producing the data, in many forms, including videos, they are only used to complement financial reports. No one knows where it is when that data or video is needed. (Interviewee no. 7, March 2019).

Figure 10.3
Infographic from Indonesiabaik.id Debunking Hoaxes About Sinovac Covid-19 Vaccine Roll Out in Indonesia

Images captured on 30th May 2021

Mr Sakti reinforced the comment made by Mr Nugraha that presenting data in a way that is easy to understand is his goal. Data from the MoF was especially complicated and contained a lot of numbers:

The National Budget, for example, has enormous numbers, compiled in hundreds of pages. People get very tired reading it. Therefore, we try to translate, explain and visualise the numbers so that the public can easily understand them. (Interviewee no. 8, March 2019)

In order to present the National Budget data, the MoF broke it down into a series of graphics, organised by topic. Mr Sakti said:

We simplify the content in many graphics, so it is easy to read. We hope that people's perceptions of the National Budget after looking at the charts is the same as ours. Apart from avoiding the public from becoming the target of hoaxes. We also hope that the content we create will be a reference to anyone to understand the National Budget. (Interviewee no. 8, March 2019)

Mr Sakti said the graphics had successfully attracted visitors to the MoF website and encouraged them stay longer on the web page:

We try to package the data well so that people are curious and want to see it further. Based on Google Analytics data, people visiting the MoF website spend a long time. This means that they are interested in the content we provide. (Interviewee no. 8, March 2019)

10.3 Capacity Building and Human Resources

For Indonesian government agencies, acquiring new expertise, especially related to technology, requires a long process. The country's bureaucracies are widely known to have "suffered from a range of problems including rampant corruption, inefficiency, poor service delivery and process orientation" (Turner, Prasojo & Sumarwono 2019). However, as Mr Nugraha said, the arrival of Mr Rudiantara[80] brought some changes to the MoCIT. In regard to public relations, Mr Rudiantara had challenged his team to upgrade their skills and learn from news media outlets:

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[80] Since changing its name to the Ministry of Communication and Information Technology in 2001, the ministers are occupied by politicians and academics. The appointment of Mr Rudiantara broke the tradition. Mr Rudiantara was considered a professional. He was an executive for several state-owned companies. He was also Secretary-General of the Association of Indonesian Cellular Operators.

At the end of 2014, when Mr Rudiantara came in, we were challenged to present what we would create. If it is considered good, it will be funded. He also encouraged us to learn from news outlets.

In 2015, we visited Kompas office several times to learn. At Kompas, we saw two corresponding sections, namely the Kompas Information Center, which managed the database and the analysts and journalists who produced infographics. In 2017, we learned from Katadata. We invited their editors to be instructors in a training series[81]. (Interviewee no. 7, March 2019)

However, support from the minister did not necessarily streamline the adoption of the new skills. In the beginning, in terms of human resources, Mr Nugraha said he could only swap his personnel instead of adding new ones:

We started applying data journalism by producing one infographic per day, or "one day, one infographic". The goal is simple, to package government data so that it is easy to understand. We tried without adding people, but only swapping with personnel whose skills we needed. Initially, there were four IT personnel because we only managed the database. Then we replaced the two with a copywriter and graphic designer.

Back then, people often mocked the infographics we made. They said it was "infotext" because more texts than the graphics. So, we continued to make improvements. (Interviewee no. 7, March 2019)

Mr Nugraha also formulated a standard operating procedure as guidance. He said as a government agency, it had to adhere to the government's views:

First, we have to avoid typos. Second, the source of the data must be accountable; it must be obtained from government agencies. If such data is unavailable, we can use non-government sources that support the government framing of an issue. (Interviewee no. 7, March 2019)

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[81] I was invited as instructor, in a one-week training.

In 2019, the Indonesiabaik.id team had grown from four to ten people. Mr Nugraha said all of them worked on a contract basis instead of as civil servants. Most were under 30:

> Our human resources are in their 20s, on average. They have no problem with technological adaptation. We only need to emphasise to them to get valid data and to process complex data so that it is easy to understand. For writers (copywriters), we looked for people who are experienced as journalists, so they were accustomed to doing research and have curiosity. (Interviewee no. 7, March 2019)

These human resources were in line with the target audience of Indonesiabaik.id. Mr Nugraha described his audience as people between 20 and 34 years old:

> People of that age better understand the data. (Interviewee no. 7, March 2019)

In the MoF, the "millennial" generation were also a key audience for the *Media Keuangan* magazine. Mr Widiana said that because this publication targeted millennials, it had to be different from the typical government agencies' websites:

> In my team, the average age is 27 to 28 years. The most senior is 45 years old, the youngest is 19 years old. This is an advantage for us because we are targeting Millennials. These young people have ideas that are out of the box, and the results are really good. Hence, our website is far from the typical bureaucrat websites (Interviewee no. 8b, March 2019)

Furthermore, Mr Widiana stated that his team consisted of 20 people[82], half of whom were responsible for the digital platform and the other half for the magazine. In addition to working on the monthly *Media Keuangan* magazine, they were also responsible for the biannual *Buletin Kinerja* (Performance Bulletin) magazine. Unlike the MoCIT, which employed all such staff on a contract basis, Mr Widiana's team personnel were all civil servants (Interviewee no. 8, March 2019). However, like the MoCIT, training was crucial for the Finance Ministry's publication team. Apart from Mr Widiana, who has a bachelor's degree in communications, his team was dominated by graduates of the Indonesian State College of Accountancy (STAN).

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[82] In addition to the dedicated team, Mr Widiana encouraged his fellow civil servants in the MoF to contribute to the magazine. "We asked those who were assigned overseas to write for us, but some others, who had passion in writing, voluntary sent their proposed article".

It is only in the past 2 to 3 years that we have people with a communication education background. The rest are those who were placed because of an assignment. They are graduates of the STAN diploma program, which has nothing to do with the area of communication. So, when they join us, they must be equipped with the basics of journalism, including interviewing techniques and how to make infographics.

In the end, those who graduated from STAN are more familiar in writing (and preparing draft from infographic). Their writing skill is much better than their math. (Interviewee no. 8b, March 2019)

Mr Widiana said the basic skills were obtained from training and visiting news media outlets:

We upgraded our skill by attending training and learn from news outlets. When there is an opportunity, we manage to participate. When we have so many tasks, we invite experts to come to our place. This is advantageous because they would share more knowledge with us. (Interviewee no. 8b, March 2019)

10.4 Planning, Work Process, and Data Validity

Indonesiabaik.id applied two work patterns in terms of story production, namely planned and unplanned infographics. The planned infographics had to be decided by the team on the weekend before the following week. Mr Nugraha said:

Usually, the topics to be produced are divided into four categories, namely government, information education, about Indonesia, and current affairs that we consider important. Content about the government must always be prepared.

After the topic is determined on the weekend, we asked the directorate for approval on Monday the following week, and we produced the content simultaneously. So, if there is feedback from the approval, we can add it later. (Interviewee no. 7, March 2019)

Mr Nugraha said that after the infographics were produced, they have to be approved by the directorate. He said that as long as the data is valid, they would not likely be disapproved.

> We avoid invalid data. Normally we receive a little feedback related to angle or data that need to emphasise. This discussion is on WhatsApp. (Interviewee no. 7, March 2019)

In terms of the quantity, Mr Nugraha noted that his team aimed to publish 20 infographics per week. He added that four infographics were published every day on the website:

> Our target is 20 infographics per week. We have four designers, so each designer must create one infographic a day. (Interviewee no. 7, March 2019)

As for the unplanned material, these infographics were usually prepared in response to viral issues and where immediate clarification was requested. Such requests came from the minister, directors, or other government agencies, including the Presidential Staff Office. Mr Nugraha said:

> When there is a request, we first check the urgency. Do we have to publish it immediately (on the same day), or can we postpone it until tomorrow? If it can be postponed, there is an opportunity for more in-depth research to make more complex infographics or create more than one piece of content. But if it must be published immediately, we make it very simple. (Interviewee no. 7, March 2019)

In *Media Keuangan* magazine, the editorial team projected its cover story for a whole year, based on the public communication grand design adopted by the Communication Bureau. So, the stories would follow the agenda of the MoF. Mr Sakti said:

> We have a public communication grand design. Based on that grand design, we plan content for one year. We set topics for each month. Then every month, we coordinate with all directorate generals to discuss agenda settings. Of course, there are also some issues that are incidental, including responding to hoaxes, which we must prepare material for. (Interviewee no. 8, March 2019)

Mr Widiana added:

For example, we have regular schedules, the National Budget in September-October and the tax file submission in March. We raise these issues across our media platforms and offset hoaxes or issues that attack the ministry. (Interviewee no. 8b, March 2019)

In terms of approval, Mr Widiana stated that as long as the content was based on verified and official data it would be published [Interviewee no. 8b, March 2019]. However, when the content was considered sensitive, it had to wait for the Head of Bureau or even the Minister to approve publication.

For data that is already in the State Budget, the decision to broadcast is our call. However, when there is an issue of high sensitivity, we need the approval of Mr Frans (Nufransa Wira Sakti, the Head of Bureau), or it could go to the minister. (Interviewee no. 8b, March 2019)

Furthermore, Mr Sakti and Mr Widiana emphasised that data validity is their greatest concern when it comes to the material to be published. Mr Widiana said:

When we publish a story, we have to double-check whether the data is accurate. We are an official state institution, so it will be terrible to publish news with invalid data. We certainly do not want to be accused of producing hoaxes.

The most important thing is data validation. We do not want the data to be inaccurate because the impact is horrible, especially when it deals with the national finances. (Interviewee no. 8b, March 2019)

10.5 Access to Data

Despite being the government's public relations arm, it is not easy for the MoCIT to obtain data from other government agencies. Minister Rudiantara said:

Even for Kominfo (MoCIT), it is not easy. Not all issues related to this ministry. When we talk about health, we need to go to the Health Ministry (to obtain or verify data), or other health stakeholders. (Interviewee no. 19 March 2019)

He said that sectoral egos hindered collaboration between the government agencies:

> I also get annoyed sometimes. If we want to go to war, we should be united. But sometimes each agency brings its interests. I do not accuse anyone. All of us contributed to this problem.

> We do have a network with other agencies. We have a group (WhatsApp) to communicate, but again, the sectoral ego is still strong. (Interviewee no. 19, March 2019)

Mr Rudiantara said that he had to post officers in other government agencies as liaisons to solve the problem. These officers were expected to streamline information and data sharing between the MoCIT and other government institutions.

> We made a breakthrough, namely the government public relations officers (THP). In order for smoother interaction, we put them in various ministries. If we only rely on the formal channel, for example, asking their public relations staff for help, the process will take a long time, and it is the same as our PR.

> Most of these were received by the ministries, and some even asked for additional people. However, some consider this THP is useless. This is certainly not easy because I am not a super minister who can order other ministers. (Interviewee no. 19, March 2019)

Mr Nugraha said that some of the THPs were even regarded as enemies by the staff of the agencies they were posted to:

> These staff, even their head of the bureau, think the THPs will replace them. Whereas we believe the THP is a solution to the lack of communication between the government agencies. Currently, the problem in all ministries is the same, they do not provide data and are reluctant to collaborate. (Interviewee no. 7, March 2019)

Moreover, Mr Nugraha said all government agencies at the national, provincial, and regency/city levels were required to provide their data periodically to the MoCIT[83]. This

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[83] Efforts to merge government data in a single medium has been initiated by the Presidential Staff Office by launching a portal called data.go.id. However, the data was very limited and obsolete because fewer

is stipulated by the Indonesian Presidential Decree 9/2015. However, the decree was not practicable because there was no implementing regulation.

> Ministries and agencies need derivative regulations as a legal basis for determining budgets, allocating human resources, and so on. (Interviewee no. 7, March 2019)

A similar problem was faced by the publication team at the Bureau of Communication at the MoF. Despite only dealing with directorates and agencies within the ministry, Mr Sakti said his team had to find other ways to get data apart from relying on the formal procedures:

> The problem is that we do not produce the data. It is in other places. For example, data on the national budget is at the Directorate General of Budget and data on taxes is at the Directorate General of Taxes. Meanwhile, we are just supporting, not in charge of or handling these fields.
>
> So, we need to find a contact person who can provide data quickly. We mapped those people who could help us and keep their contacts. This requires an extraordinary effort. If we stick to the bureaucratic procedure, it will take a long time. I have to write a letter to the directorates general, and then it will be forwarded to the department that holds the data, then back again to the director-general and me. (Interviewee no. 8, March 2019)

In regard to collaboration with other government agencies, Mr Sakti said the MoF had worked together with the Presidential Staff Office and the MoCIT, to name a few:

> We work closely with other ministries and agencies, so when something happens and we need help, we can contact them and vice versa. (Interviewee no. 8, March 2019)

10.6 Discussion

Journalism and public relations are two fields that are closely related. Journalism's need to produce an increasing quantity of stories, especially in online media, creates openings

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than 50 agencies/regional governments participated in the portal. "The portal is there, but no update" Mr Nugraha said (Interviewee no. 9, March 2019.

for public relations professionals to offer materials for publication in the form of an "information subsidy" (Gandy Jr 1980). At the same time, journalism lends its credibility to public relations information by disseminating its version via news channels (Sinaga & Wu 2007). Public relations is heavily shaped by journalism because it monitors journalistic products and responds to them, so much so it is often called the child of journalism (White & Hobsbawm 2007). These professions also require a similar sets of skills, including writing and presenting information that engages audiences. Just as changes in one field can impact other fields (Benson 1999), trends in the journalistic field (e.g., the adoption of data journalism) can affect the public relations field. Although the latter is not journalism, Mr Nugraha told me that his team at the MoCIT adopted data journalism to improve their outputs.

Interviewees from the MoCIT and the MoF said that data journalism skills help them simplify government data and make it easy to understand and engage with it, especially data consisting of numbers (e.g., financial data). These data journalism skills also allow the ministries to respond to hoaxes and disinformation. Therefore, these government agencies take advantage of journalistic skills to strengthen their capacities to disseminate information. In addition to the belief that data represent facts, it is also considered non-partisan, especially during political events, such as presidential elections. The use of data, while also responding to hoaxes, was aimed at educating the public about government policies involving numbers (e.g., the national budget). The focus on data was also driven by the remark from President Joko Widodo that data is the new oil and government institutions need to take advantage of it (Kahfi 2019).

Journalistic capital, including skills in data journalism, can instantly be brought to other fields by journalists departing news outlets. However, the recruitment system in the Indonesian government agencies has made it almost impossible to immediately recruit an experienced journalist as a permanent staff member. Therefore, the ministries have had to develop these skills by inviting professional journalists from the news outlets to be instructors and by visiting news outlets to see how data journalism is implemented. In addition, the deployment of data journalism skills has brought some changes in the composition of human resources in the ministries. The old paradigm that only the old, the underachievers, or the marginalised work in data and archives or are posted to the public relations departments and libraries has been over-turned. The millennials have

become dominant in the ministries' "newsrooms" because they are tech-savvy and more creative in presenting data; hence, they fit with data journalism.

Like traditional newsrooms in news outlets, the government-owned Indonesiabaik.id and *Media Keuangan* magazine have adopted a journalistic work routine. They determine what to publish, the deadlines, the workload per person, and they try to streamline approval to publish. What has made them different from news outlets, however, is their adherence to the government's agenda-setting and their sticking with the government-produced data. In terms of publishing in the MoCIT and the MoF, approval from the ministers or even heads of bureau is no longer needed when the stories were based on valid and official data. Approval from higher officials is only required when stories are sensitive and controversial. Hence, Mr Widiana and Mr Nugraha were quoted earlier in this chapter as saying data validity was their primary concern.

Although Indonesiabaik.id and *Media Keuangan* are owned by the government and spread its narratives, this has not meant they can gather data quickly from other government agencies. Strong sectoral egos and red tape are the main obstacles in getting data, despite the Presidential Decree 9/2015 that obliges all government institutions at the central and regional levels to supply data to the MoCIT. As Mr Nugraha explained, some officials in other agencies felt their roles were taken over by the government's THP public officers deployed by the MoCIT. Mr Sakti revealed that the bureaucracy, even in the same ministry, was still hampering his publication team; as a result, his team had to approach contacts in other directorates who could be relied on to provide data. This is a practice that most journalists also prefer because, as mentioned in Chapter 8 and 9, they are reluctant to use freedom of information (FOI) laws.

10.7 Conclusion

This chapter offers fresh insights into how government agencies in Indonesia exploit data journalism to improve their public relations functions. Data from this chapter was obtained from interviews with officials who were responsible, directly or indirectly, for public relations in the MoCIT and the MoF. Interview data were processed using thematic analysis, and the several codes that emerged were presented in this chapter.

The MoCIT was selected because of its leading role in government public relations, and the MoF because it is one of the institutions targeted by hoaxes and disinformation. As government agencies engaged in public relations, both are close to the journalistic field. Moreover, each ministry maintains its own online and printed publications. To fight against hoaxes, the government has strengthened these agencies by adding more human resources and technology and by emphasising the use of a single narrative (Sugiyanto et al. 2016).

Findings from these interviews show that the MoCIT and the MoF used data journalism skills to respond to hoaxes and educate the public using data-driven publications. Despite support from top officials in these ministries, challenges remain. These ministries need to improve the capacity of their human resources by either visiting news outlets or inviting senior journalists to be instructors. Another difficulty that persists is accessing data. Bureaucracy and sectoral egos make it difficult for one agency to obtain data from others. When the MoCIT approached other ministries to accept a liaison officer responsible for bridging communication, some ministries welcomed this, and others rejected it. Even in the MoF, retrieving data from different directorates can be burdensome; public relations officers have had to establish networks with individuals from other directorate generals to streamline data requests, instead of applying official procedures to ask for the data.

This chapter shows that as a field adjacent to journalism, government public relations can be heavily influenced by news outlets. An interviewee from the MoCIT was even confident in saying that his team adopted data journalism because it was a trend in the news industry. Both the MoCIT and the MoF created infographics to simplify sophisticated data, their skills for producing infographics having been learned from news media organisations. From a Bourdieusian perspective (Benson & Neveu 2005a), these government agencies accumulated journalistic cultural capital originating from the journalistic field. They also adopted journalistic habitus, creating newsrooms and planning their publications as the media do. Having a newsroom is a dramatic change for these agencies because to keep up with the current issues, including the spread of hoaxes, they now have to work faster, work longer (beyond office) hours, and simplify bureaucratic decision making. Hence, this chapter not only answers Research Question

4 but also provides insights into the factors driving the use of data journalism skills in government agencies and its impact on the organisation.

This is the last findings chapter of this thesis. Chapter 11 presents the conclusion and recommendations of this study, including its contribution to the existing knowledge of the impacts of data journalism.

Chapter 11

Conclusion

In this thesis I have analysed of the adoption of data journalism in media outlets in Indonesia in the wake of technological advances that have disrupted the news industry by allowing anyone to create and disseminate content. These changes have resulted in the rampant spread of hoaxes and disinformation, especially during political contests. To investigate the media landscape in Indonesia, I applied propaganda model filters that showed the development of news media in the country after the fall of President Suharto's New Order led to the free press era. My approach to investigating the deployment of data journalism in five selected news outlets (Kompas.com, Tempo.co, Katadata.co.id, Tirto.id, and Lokadata.id) has deployed Bourdieuan field theory, journalistic concepts, and rich interview data, thus allowing for a holistic analysis.

These methods have allowed me to address the research questions put forward in the introduction chapter: (1) What factors drive the adoption of data journalism in Indonesia? (2) How do Indonesian news media outlets adopt data journalism? (3) What changes are caused by the deployment of data journalism in newsrooms and journalists' professional practice? (4) How do Indonesian government institutions learn and deploy data journalism skills to disseminate their views?

In the past ten years, the mainstream media outlets in Indonesia have faced unprecedented challenges. The rise of social media and its deep internet penetration in the country have shaken their fundamental roles and business models. Media outlets are no longer the sole medium for disseminating news or conveying messages from brand owners. However, while struggling to remain relevant, they are still expected to provide reliable information in the age of hoaxes and disinformation, especially during elections and crises. Some media organisations have adopted data journalism to improve the quality of news, as well as to counter hoaxes.

My findings are distributed in Chapters 6, 7, 8, 9, and 10. Chapters 6 and 10 show the results of a thematic analysis (Braun & Clarke 2006). For Chapter 7, I implemented a framework derived from previous studies that evaluated data journalism projects. Chapters 8 and 9, which present the core findings of this research, report on my application of a sociological approach to computational journalism using Anderson's (2013) framework of six lenses.

This thesis shows how adopting data journalism has affected the dynamics of the selected Indonesian newsrooms, how journalists in each newsroom perceived data journalism, the opportunities offered by implementing this new genre, and how of data journalism practices in Indonesia are similar to and different from those of other countries. Hence, this thesis contributes to reducing the gaps found in previous data journalism research, particularly in Indonesia, and to expanding knowledge of this under-researched area. In this concluding chapter, I synthesise the core arguments of each of the findings chapters and draw on these discussions to support recommendations for future researchers, news practitioners, policymakers, and donor agencies.

11.1 Data To Differentiate Journalism Content From Other Content

Digital platforms have become a battlefield where actors (individuals, groups, and institutions) strive to get attention from the public (internet users) (Goldhaber 1997). To expand its audience base, journalism now uses digital platforms that force it to compete with other content creators from different fields. After noticing the successes of content creators, usually individuals, in reaching their audiences, news media have similarly adopted sensationalism, clickbaiting, and other strategies that prioritise speed over accuracy. These have the potential of leading the media to produce and disseminate misinformation, especially when hoaxes, disinformation, and hate speeches are rampant during political events (Lim 2017) and crises. That such strategies often annoy readers is an indication of how journalism can easily compromise its ethics and values by adjusting to the logic imposed by digital platforms (Wu, Tandoc & Salmon 2019b). Hence, journalism now exists at the periphery of the digital realm (Tandoc Jr 2019). Furthermore, there are concerns that the existence of news content alongside hoaxes and disinformation on digital platforms may harm journalism because readers may consider

journalistic content similar to hoaxes (Lima-Quintanilha, Torres-da-Silva & Lapa 2019), and making journalism more vulnerable to be the target of public mockery (George & Youm 2022) and doxing (Masduki 2021).

Because it is now impossible to abandon digital platforms, journalism has had to underline and promote its identity to make it easier for people to distinguish it from other content. Data journalism is an initiative that emphasises this difference because it depends on reliable data instead of oral comments made by news sources. In the wake of scepticism towards journalism generally, data journalism is expected to regain public trust by upholding accuracy and implementing verification. One of the reasons for the decline in public trust in media in Indonesia is that the news media in in that country are often employed by their owners to achieve political agendas. Rather than carrying out journalistic roles, these media are often considered propaganda tools, as discussed in Chapter 5. From a Bourdieusian perspective, data journalism enhances journalistic cultural capital by including clarity, accuracy, and intelligent commentary (Benson & Neveu 2005b). Moreover, the adoption of data journalism findings reinforce previous scholars' work arguing that journalists in Indonesia have been characterised as adhering to ethics, being neutral and precise, prioritising facts, voicing marginalised people, and monitoring power (Hanitzsch 2005; Steele 2011).

This thesis shows how five Indonesian media companies – Kompas.com, Tempo.co, Katadata.co.id, Tirto.id, and Lokadata.id – adopted data journalism and consistently produced data journalism projects, especially infographics. Although the key research participants from these companies described similar objectives for adopting data journalism, namely, promoting impartiality and accuracy in the age of hoaxes and reinforcing verification to strengthen journalistic roles, they had different understandings when defining the term, thus confirming that data journalism is amorphous (Fink & Anderson 2015) and that professionals in the field define it based on their experiences (Hermida & Young 2019).

Interviewees from Kompas did not clearly define data journalism but described its output as a combination of data and visualisation. Those from Tempo defined it as a product: any form of a news story initiated by data and which places data as the cornerstone of the story is considered data journalism. A similar definition has been

offered by Knight (2015) and (Rogers 2012). Still from the perspective of product, the interviewees from Katadata defined data journalism as a story based on numerical data instead of statements made by news sources. For Tirto's representatives, data journalism is the use of data to tell a story that is important to the public so they can digest the story. And those from Lokadata explained it from the audience's perspective as a journalistic work intended to help people easily understand a complex problem.

Despite these different definitions, this research shows the selected news outlets perceived the infographic as a data journalism product. Content analysis of 50 infographics (ten infographics from each outlet) indicates that stories about the economy are more frequent because economic activities produce more numerical data and are generally aimed at helping people understand an issue (Munoriyarwa 2020). This could also explain why most of the infographics had a neutral tone. My research participants also agreed that the goal of data journalism is to provide accurate information. Hence, it needs to be acknowledged that the use of explanatory data has shifted the role of journalism from being a watchdog to a verifier. This is also because data journalism is aimed to respond to hoaxes and disinformation.

In the 50 infographics analysed, there were 22 appearances of data from foreign sources. Foreign data also shows up in graphics discussing national issues, indicating how data journalists faced difficulties in getting data from local agencies (this issue will be elaborated on in the next section). Even though the infographic is the simplest output of data journalism, producing an infographic requires more human resources than traditional news projects. It also requires different skills used in collaboration – designing, editing, illustrating, researching, data analysing, and writing – although one person might have more than one skill.

11.2 Challenges and Opportunities in Adopting Data Journalism

The data journalists in the five selected Indonesian news outlets said they had difficulties in accessing and working with data, as studies in other countries have also found. Some government agencies were reluctant to make their data available. Even though government policies encouraged data use and supported data journalism by providing training and a single website to access government data, these still did not

cater to all the needs of data journalists. Indonesia also has the Freedom of Information Act, but its procedures for requesting data do not fit the working speeds of most journalists. Facing this challenge, some data journalists have created their own databases or organised surveys, and others rely on their close relationships with government officials to obtain data.

While there are initiatives from the central government, local government agencies seem concerned that releasing data would harm them. Some still prefer to release data in PDF format, scanned from photocopied documents, thus making it harder for journalists to process the data. Data journalists also complained about the lack of details in, for example, data that are only available at the national, provincial, and district levels. Even between government agencies, data sharing is still an issue because of bureaucratic and sectoral egos. These issues point to a paradox, because President Joko Widodo has emphasised the urgency of data use and some government institutions have helped data journalists. For example, the Executive Office of The President of Indonesia, supports the adoption of data journalism by funding and organising training for journalists. The government has also initiated the Satu Data Indonesia (One Data Indonesia) portal to amalgamate data from all institutions.

It is one thing to obtain numerical data but another to process it; journalists need to be familiar with numbers. A problem lies with the fact that many journalists not only tolerate general innumeracy but also celebrate their aversion to mathematics (Royal & Blasingame 2015). A research in the US found that students in journalistic programs had selected their study program because they did not like mathematics (Weiss & Retis 2018). My research participants acknowledged that many journalists in Indonesia were not interested in numbers and could not even use spreadsheets or Excel. Finding a journalist with data skills such as cleaning, processing, and gaining insights is almost impossible. Individuals with these capabilities would also be targeted by technology companies, including digital start-ups, which offer better benefits than the news outlets. Hence, it is imperative that journalists receive training in data skills. In addition to training, the newer online news outlets referred to in this study hire people with data skills to support their newsrooms. These recruitments indicate that these news outlets are more committed to data journalism than the legacy news outlets.

The lack of human resources in data journalism in Indonesia's media outlets has resulted in institutions beyond the journalistic field being invited to contribute to its adoption. These institutions include government agencies, as mentioned previously, technology companies such as Facebook and Google, not-for-profit organisations, and universities. Data journalists in Indonesia also work with their colleagues from different media outlets, thus changing the journalistic work norm from competition to collaboration, putting aside the exclusive news items in order to bring more impact (Hermida & Young 2019; Sandoval-Martín & La-Rosa 2018). This collaboration might be between individuals from different outlets or between newsrooms. At the global level, Tempo.co, for example, was involved in the Panama Papers project coordinated by the International Consortium of Investigative Journalism. Data journalists also encourage each other to improve their skills and form clubs to meet and share knowledge. Among these is the Indonesian Data Journalism Network (IDJN), a non-profit organisation and community that provides training and facilitates collaborative reporting. IDJN holds regular data journalism workshops for journalists, designers, programmers, and students in Jakarta.

Despite the challenges in adopting data journalism, this research found that the newer online news media outlets Katadata and Lokadata considered data journalism an opportunity to develop new business models. Apart from differentiating their journalistic products from those of the organisationally supported legacy media outlets, using data has created a market for them as consultants to individuals and groups that need advice on processing, presenting, and disseminating data. As a result, these media outlets have expanded their businesses beyond the journalistic field. As mentioned by one of the research participants, media companies can no longer survive with their traditional business – advertising – in the digital era. When technology disrupted the news industry, the arrival of new entrants in the field made the traditional media business less profitable. Meanwhile, in the legacy media outlets, data journalism is still solely dedicated to improving the quality of journalism. For example, in Tempo.co, data journalism is positioned as a teaser for its journalistic products in its e-paper and e-magazine. These findings can explain why data journalism in small online news outlets is more advanced than in the outlets backed by legacy media.

11.3 Changes in the Newsroom and Beyond the Journalistic Field

Data journalism requires forms of expertise that are traditionally beyond the journalistic field. These include data analysis and design. The need for these skills in newsrooms was anticipated with adjustments to organisational structures, especially in the newer online news media. Katadata and Lokadata both established data teams consisting of staff with data skills. In Tempo Group, the company created Media Lab for designers and data analysts to assist Tempo.co in adopting data journalism. These structural changes indicate how these roles are transforming newsrooms to become digitally savvy (Engebretsen, Kennedy & Weber 2018). In Tempo, a person with design skills was appointed to head the Media Lab. Their essential roles were reflected in their involvement in all stages of news preparation. As for Tempo's journalists, they had to let go of some of their authority, although they still make the final decisions on whether stories will be published. However, one of my participants viewed the arrival of new entrants as an expansion of the journalistic profession. He said that journalistic skills are no longer limited to editorial work, they also extend to design, data analysis, and SEO.

Changes have also happened in the way newsrooms perceive and produce news. While preserving journalistic values and applying technology as a supporting tool, newsrooms must align with technological rules. For example, the need to be simple and straightforward made Tempo.co abandon its literary writing style. Visualisation produced by numbers has also led to data journalists becoming more dependent on numerical data. Visualisation is important because it entertains and is easy to understand. Therefore, the likelihood of an event being visualised can be a news value (Harcup & O'Neill 2017). One participant emphasised that visualisation is crucial because the audience does not pay attention to how much data is processed and analysed. Some revealed that they had abandoned stories they were working on because numerical data were not available. As I explained in the previous section, the use of data has shifted the traditional role of journalism from watchdog to explainer, despite the fact data could also be used for investigative stories. In other words, journalistic doxa is not unchangeable (Tandoc Jr (2013).

A field close to journalism is public relations. As changes in one field may impact other fields (Benson 1999), I conclude that changes in the journalistic field due to the

adoption of technology and data journalism have encouraged changes in public relations. Public relations is heavily shaped by journalism because it monitors journalistic products and responds to them (White & Hobsbawm 2007). Both professions require similar skills, including writing and presenting information that engages audiences. Public relation practitioners, including government agencies, expect their communication content to be perceived as impartial and objective in a similar way to how people perceive journalistic products. Using data is therefore a way for the government to achieve impartiality and provide clarity in the wake of hoaxes and disinformation attacking it.

My findings show that media organisations have contributed to the adoption of data journalism skills by the Indonesian Ministries of Communication and Information Technology (MoCIT) and Finance (MoF). The research participants from these ministries acknowledged that they had learned from media outlets and invited experienced journalists to teach their public relations teams. Adopting journalism skills has brought significant changes to the working culture in the public relations teams in both ministries. One of them claimed that his team was implementing data journalism. In addition, government directives to use data in communication content have revitalised the role of staff in data management.

These government agencies are accumulating journalistic cultural capital originating from the journalistic field. They are also adopted the journalistic habitus by creating newsrooms and planning their publications as the media do. Having a newsroom is a dramatic change because it means they need to work faster, keep longer (beyond office) hours, and simplify bureaucratic decision making to keep up with the current issues, including addressing the spread of hoaxes.

11.4 Mapping the Adoption of Data Journalism in Indonesia

This study found that digital technology is having significant impacts on journalism throughout the world. Technology now allows anyone to produce and disseminate their own content, leaving the role of journalism in flux. The traditional business model for journalism has been disrupted because brand owners prefer to create their own websites or engage social media influencers (including celebrities) to advertise their products. In

Indonesia, the increases in internet penetration and affordability of smartphones have allowed content creators motivated by economics and politics to circulate their content. As a result, digital platforms are loaded with hoaxes and disinformation. Meanwhile, the urgency to reach a wider audience has forced journalism to present its content on social media or websites, often alongside unverified information. This makes the audience fail to distinguish journalistic products from hoaxes and disinformation (Lima-Quintanilha, Torres-da-Silva & Lapa 2019), which my research participants expressed the same concern.

Some news outlets have adopted data journalism and promoted the use of numerical data to distance themselves from unverified information and to show they were providing high-quality journalism. Data journalism also protects against hoaxes and disinformation, especially during political contestation or crisis.

In addition to highlighting some of the changes and challenges resulting from the adoption of data journalism by Indonesian news outlets this thesis has also identified how, as the target of hoaxes, the Indonesian government has improved public relations function across its institutions and agencies by deploying data journalism skills. One of my research participants, a government official, acknowledged that his public relations teams had adopted data journalism and learned from news media outlets. His ministry had prioritised the use of data to counter hoaxes and produce reliable and impartial public relations communication content.

Figure 11.1 is the map of the adoption of data journalism in Indonesia, derived from my conceptual framework in Chapter 3 (Figure 3.3). Here, I added some details I generated from my finding chapters. For example, I found that in addition to improving the quality of journalism, some news outlets applied data journalism to expand their scope of business. Also, universities in Indonesia were involved in boosting data journalists' skills. I also found that news outlets deploying data journalism had to fight for talent because technology companies and start-ups needed journalists with data skills.

Figure 11.1

Map of the Adoption of Data Journalism in Indonesia
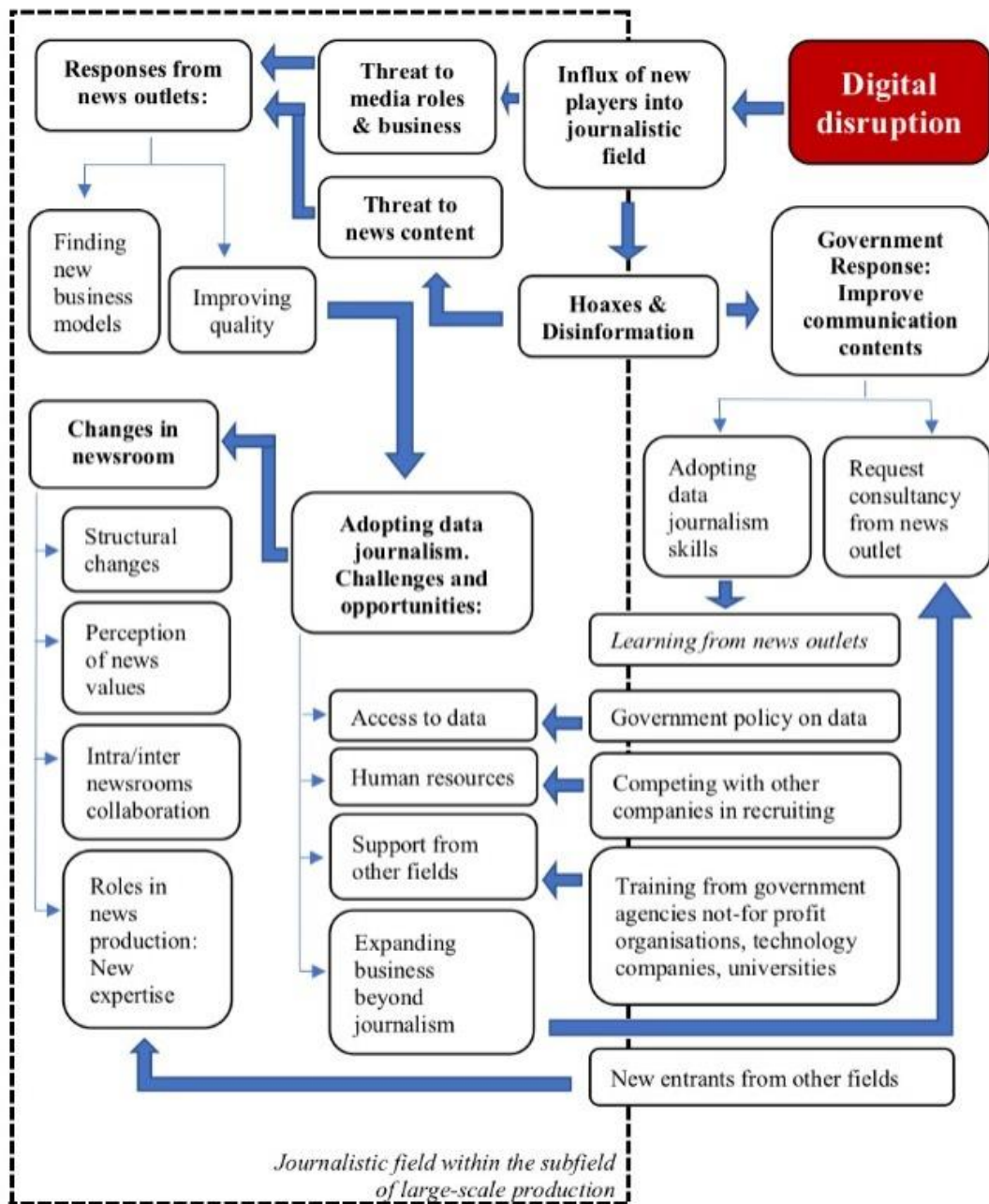
11.5 Recommendations

Future Research

Despite data journalism being a maturing field of research (Appelgren, Lindén & van

Dalen 2019), the distribution of such studies is still concentrated in a limited range of

mostly Western countries. I only found one journal article discussing this topic published in Indonesia. This lack of research motivated me to embark on this PhD project. However, I have limited my case studies to five national online news media outlets headquartered in Jakarta, even though legacy media, especially newspapers and magazines, have also adopted data journalism. Therefore, investigating data journalism in such publications, including their electronic versions (e-paper and e-magazine) should provide further insight into this research area.

Although I interviewed several data journalists, there were many I did not include because they did not work for the newsrooms I had selected. Hence, future research to explore how data journalists perceived themselves, their roles, and their work would contribute to new knowledge in this field. Moreover, Indonesia is a country with a 270 million population in 34 provinces and more than 500 cities and districts, where each province, city, and district is home to local news outlets. With new challenges faced yet to be faced due to political, economic, public health, and social circumstances, these local media organisations, and the profession as whole, would benefit from having access to research tools. Further research might focus on how new entrants or people who were traditionally in supporting roles in journalism perceive data journalism and the significance of their roles in the newsroom. Furthermore, with some universities in Indonesia starting to teach data journalism, research into the topic should enhance its academic credibility.

Expanding Business Scope

Digital technology has disrupted the media industry. The decline in newspaper advertising and the closures of some news outlets are leading some in the industry to find new business models. A research participant from an online legacy media outlet revealed that his outlet was still trying any model that might work. This research found that small outlets not belonging to legacy media organisations were exploiting data journalism to expand their business beyond traditional journalism.

In contrast to online outlets belonging to large media groups, the small news outlets seem to have no options other than to utilise technology to survive. This makes them gained reputation as digital savvy and being advanced in working with data. For

example, Katadata and Lokadata have been approached by government agencies, private institutions, and not-for-profit organisations for help with data processing and visualisation. In response, these companies have appointed dedicated staff to produce data journalism. With income from advertising no longer sufficient to support and sustain traditional journalism, other news outlets, including the resource-rich legacy media organisations, might also consider replicating this new business model.

Government To Improve Access to Data

Access to data is instrumental for journalism, especially data journalism. Amid hoaxes and disinformation, data can be used to clarify confusing information. If the Indonesian government were to improve public access to data, it would enrich public debate, strengthen democracy, and help the government counter hoaxes. Since 2008, Indonesia has had the Freedom of Information Act, which is essential for data journalists. Yet, the participating journalists said the law did not help them obtain data. Therefore, a strong recommendation arising from this study is that the government enhance access to data by revising the law, including the streamlining of procedures for requesting data to cater to the journalistic work pace. The Satu Data Indonesia (One Data Indonesia) portal initiated in 2019 should be re-empowered, and the government should instruct all agencies and institutions to upload their data to the portal so the media and the public can access it. Sharing data between government agencies should also be encouraged so they can resolve contradictory data and improve their public relations. All in all, data accessibility is a sign of transparency that would politically benefit the government.

Donor Agencies To Provide Business Development Training

Data journalists in Indonesia have benefited from training courses organised not only by government institutions, technology companies, and universities, but also by foreign donor agencies. While training journalists to build data journalism skills is essential, donor agencies should consider training regional media outlets to use data journalism as a source of income that will sustain them during times of digital disruption. These outlets are vital for maintaining the richness of reporting, observing local governments, and highlighting local issues that do not fit the routines of the national news outlets. Donor agencies could also encourage Jakarta-based news outlets that have successfully

developed their data journalism business models to share their knowledge with their regional counterparts.

This chapter has extracted the key discoveries from the finding chapters of this thesis. With the help of my key participants, who generously spared their time and shared their knowledge and experience, and the scholarship funding I received, I have tried to contribute to the journalistic practices of Indonesia, as well as pave the way for future studies in journalism my country. This chapter is the end of my thesis, it marks the end of my PhD journey. However, I look forward to conducting more research at the post-doctoral level.

Appendix 1

Ethical Clearance to Conduct Research

Human Research Ethics Committee
Ethics Secretariat
C/O Research and Innovation Office
15 Broadway, Ultimo NSW 2007

T: +61 2 9514 9681
Research.Ethics@uts.edu.au

PO Box 123
Broadway
NSW 2007 Australia
www.uts.edu.au

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UTS
UNIVERSITY
OF TECHNOLOGY
SYDNEY

3rd December 2018

Dr Catriona Bonfiglioli
Cosmopolitan Civil Societies Research Centre
CB03.05.34
UNIVERSITY OF TECHNOLOGY SYDNEY

Dear Catriona,

UTS HREC ETH18-2993 – Dr Catriona Bonfiglioli, A/Prof Tom James Morton (for Mr Adek Media Roza, PhD student) – "The emergence of data journalism in Indonesia in the midst of hoax and disinformation"

Thank you for your response to the Committee's comments for your project titled, "The emergence of data journalism in Indonesia in the midst of hoax and disinformation". The Committee agreed that this application now meets the requirements of the National Statement on Ethical Conduct in Human Research (2007) and has been approved on that basis. You are therefore authorised to commence activities as outlined in your application.

Your approval number is <u>UTS HREC REF NO. ETH18-2993</u>
Approval will be for a period of five (5) years from the date of this correspondence subject to the provision of annual reports.

Please note that the ethical conduct of research is an on-going process. The *National Statement on Ethical Conduct in Research Involving Humans* requires us to obtain a report about the progress of the research, and in particular about any changes to the research which may have ethical implications. This report form must be completed at least annually, and at the end of the project (if it takes more than a year). The Ethics Secretariat will contact you when it is time to complete your first report.

I also refer you to the AVCC guidelines relating to the storage of data, which require that data be kept for a minimum of 5 years after publication of research. However, in NSW, longer retention requirements are required for research on human subjects with potential long-term effects, research with long-term environmental effects, or research considered of national or international significance, importance, or controversy. If the data from this research project falls into one of these categories, contact University Records for advice on long-term retention.

If you have any queries about your ethics clearance, or require any amendments to your research in the future, please do not hesitate to contact the Ethics Secretariat at the Research and Innovation Office, on 02 9514 9772.

Yours sincerely,

Production Note:
Signature removed
prior to publication.

Associate Professor Beata Bajorek
Chairperson
UTS Human Research Ethics Committee

Appendix 2

Participants Information Sheet and Consent Form

PARTICIPANT INFORMATION SHEET FOR MEDIA PROFESSIONAL
The emergence of data journalism in Indonesia in the midst of hoax and disinformation

WHO IS DOING THE RESEARCH?
My name is Adek Media Roza and I am a student at UTS. My supervisor is Dr Catriona Bonfiglioli (Catriona.Bonfiglioli@uts.edu.au)

WHAT IS THIS RESEARCH ABOUT?
This research is to find out about the implementation of data journalism in Indonesia by media organization and government agencies, and how data journalism is used to fight hoaxes, fake news, and disinformation.

FUNDING
Funding for this project has been received from Australia Awards Indonesia

WHY HAVE I BEEN ASKED?
You have been invited to participate in this study because you are able to give the information needed to find out the implementation of data journalism in your news media organisation.

IF I SAY YES, WHAT WILL IT INVOLVE?
If you decide to participate, I will invite you to participate in a 1-hour semi-structured interview that will be audio recorded and transcribed

ARE THERE ANY RISKS/INCONVENIENCE?
There are very few if any risks because the research has been carefully designed. However, it is possible that you may feel uncomfortable answering some questions.

DO I HAVE TO SAY YES?
Participation in this study is voluntary. It is completely up to you whether or not you decide to take part.

WHAT WILL HAPPEN IF I SAY NO?
If you decide not to participate, it will not affect your relationship with the researchers or the University of Technology Sydney. If you wish to withdraw from the study once it has started, you can do so at any time without having to give a reason, by contacting Adek Media Roza on adek.m.roza@student.uts.edu.au

However, it may not be possible to withdraw your data from the study results if these have already had your identifying details removed.

CONFIDENTIALITY
By signing the consent form you consent to the research team collecting and using personal information about you for the research project. All this information will be treated confidentially. Only the researcher who have access on the data, as it will be stored in digitally with protected password. Your information will only be used for the purpose of this research project and it will only be disclosed with your permission, except as required by law.

Also, we would like to store your information for future use in research projects that are an extension of this research project. In all instances your information will be treated confidentially.

TOKEN/SOUVENIR
Researchers will give a token or souvenir (worth not more than $20) as a symbol of appreciation for the time and information that you provide. You may freely refuse the gift.

WHAT IF I HAVE CONCERNS OR A COMPLAINT?

If you have concerns about the research that you think I can help you with, please feel free to contact me on +62 ▮▮▮▮▮▮▮ in Indonesia or +61 ▮▮▮▮▮▮▮ in Australia (e-mail: adek.m.roza@student.uts.edu.au).

You will be given a copy of this form to keep.

NOTE:
This study has been approved by the University of Technology Sydney Human Research Ethics Committee [UTS HREC]. If you have any concerns or complaints about any aspect of the conduct of this research, please contact the Ethics Secretariat on ph.: +61 2 9514 2478 or email: Research.Ethics@uts.edu.au], and quote the UTS HREC reference number. Any matter raised will be treated confidentially, investigated and you will be informed of the outcome.

CONSENT FORM
The emergence of data journalism in Indonesia in the midst of hoax and disinformation

I _____ agree to participate in the research project "The emergence of data journalism in Indonesia in the midst of hoax and disinformation" [ETH18-2993] being conducted by Adek Roza, 15 Broadway, Ultimo NSW 2007, +61295142000. I understand that funding for this research has been provided by Australia Awards Indonesia.

I have read the Participant Information Sheet or someone has read it to me in a language that I understand.

I understand the purposes, procedures and risks of the research as described in the Participant Information Sheet.

I have had an opportunity to ask questions and I am satisfied with the answers I have received.

I freely agree to participate in this research project as described and understand that I am free to withdraw at any time without affecting my relationship with the researchers or the University of Technology Sydney.

I understand that I will be given a signed copy of this document to keep.

I agree to be:
☐ Audio recorded

I agree that the research data gathered from this project may be published in a form that:
☐ Identifies me
☐ May be used for future research purposes

I am aware that I can contact Adek Roza if I have any concerns about the research.

_____   ____/____/____
Name and Signature [participant]   Date

_____   ____/____/____
Adek Roza   Date

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Appendix 3

Selected Interview Data

This appendix contains five selected interview excerpts with this research participants I conducted during my fieldwork in Indonesia between March and April 2019. The five interviews were selected for practical reasons because each transcript has five pages or more. The five interviewees represented news media outlets, government institutions, and media and journalist associations. The interviews were conducted in Indonesian. I only translated the coded sentences into English.

Mr Metta Dharmasaputra

Position   : CEO
Organisation   : Katadata.co.id
Interview date : 22 March 2019

Apa tantangan yang dihadapi media di tengah perkembangan teknologi informasi?
Kalau melihat fenomena sekarang, yang menjadi pertanyaan apakah perusahaan media yang berhasil itu ditentukan oleh orang-orang yang punya background media atau orang-orang yang justru punya background di luar media, misalnya teknologi. Kita lihat orang-orang yang punya background media membuat media online. Dia mengusai jurnalistik, tapi itu tidak menjadi kunci medianya berhasil. Di sisi lain ada orang-orang yang tidak mengerti jurnalistik tapi dia menguasai teknologi.

Tantangan terberat industri media adalah bersaing dengan industri teknologi. Jadi news media company itu kunci suksesnya justru tidak berada di kompetensi jurnalistik, tapi ada di ranah yang lain, yaitu teknologi. Kalau kita lihat, yang diuntungkan atau memakan kue dari industri media adalah perusahaan-perusahaan teknologi yang kemudian mengubah bentuknya menjadi perusahaan media bukan news media. Kue kita katanya diambil 80% oleh google dan facebook, Jadi ada pertanyaan apakah ada masa depan industri media untuk kalangan jurnalistik?

Banyak yang menilai otoritas jurnalis semakin tereduksi karena adanya pemain dari sektor lain yang masuk ke jurnalisme seperti teknologi informasi, SEO, data analyst dan sebagainya. Apakah benar demikian?
Iya. Kalau melihat fenomena ini ketika jurnalis membuat berita. Di Indonesia, usulan dalam rapat redaksi salah satunya berawal dari media sosial. Jadi jurnalis di-drive oleh

teknologi dan publik yang kebetulan lebih dekat dengan teknologi. Jadi kalau dari sisi itu memang tereduksi peran jurnalis.

Ada juga agregator yang mereduksi betul para jurnalis. Orang yang berada di belakang agregator kebanyakan tidak mengerti standar jurnalistik dan tidak memiliki kompetensi jurnalis. Tetapi banyak agregator penyedia konten sukses. Penyedia konten adalah orang yang mengerti teknologi tapi kontennya tinggal diagregasi dari media lain. Bahkan ada mesin pembuat berita otomatis. Dari sisi itu, saya setuju terjadi reduksi peran jurnalistik dalam banyak hal.

Katadata mengklaim sebagai media yang mempraktikkan data journalism pertama di Indonesia. Mengapa memilih data journalism?
Di Indonesia boleh dibilang berita hampir relatif sama dan kecenderungannya hanya mengutip pernyataan. Beda dengan di luar negeri. Negara kita memiliki kemewahan *freedom of the press,* tetapi kualitas konten tidak berkembang. Kualitas kalah cepat dibandingkan dengan kuantitas. Itulah mengapa akhirnya kami memilih data. Waktu itu kita berpikir seharusnya wartawan tidak membuat berita hanya *base on statement* tapi *base on* fakta dan data. Kita melihat ada kekuatan data untuk meningkatkan quality konten di ranah jurnalistik.

Selain itu, kami melihat kompetitif advantage. Persaingan di media sudah sedemikian ketat. Kami memilih tidak berada di *red ocean.* Kami memilih *blue ocean.* Jadi, kami harus mencari *uniqueness.* Data menjadi faktor keunikan itu dan kami pun merasa cukup kuat memahami data. Katadata memang mengkhususkan diri di ekonomi dan bisnis. Jadi data pasti sangat *related* ke situ.

Menurut Anda, apa definisi data journalism dan jurnalis data?
Ya, mungkin 288elati saja. Karya jurnalistik yang berbasiskan data dan tidak hanya berbasiskan statement. Artikel pun bisa diperkuat oleh data, misalnya data historical, sehingga artikel itu bisa menjadi lebih luas konteksnya. Biasanya artikel hanya memotret satu kejadian. Begitu diperkuat dengan data historical, konteks dari artikel itu bisa menjadi lebih luas. Bisa bercerita lebih banyak.

Katadata memiliki banyak tim data seperti data analyst, data scientist, dan lain-lain. Sebenarnya produk seperti apa yang ingin dihasilkan dengan tim data itu? Apakah ada gambaran ke depannya seperti apa?
Iya. Katadata memang mengarah ke sebuah visi yang kita sebut dengan *integrated news data and research portal.* Jadi tidak hanya news, tetapi juga ada elemen data dan elemen research. Nah, produknya memang tidak hanya untuk media dalam hal ini sebagai news, tetapi juga ada produk sendiri dari data and research. Kalau ditanya ke depannya seperti apa, Katadata tidak hanya bergerak di lingkup media tapi juga beyond media itu data dan research. Produk dari data ada yang mensupport news seperti data driven artikel. Ada juga produk data yang khusus dibuat sebagai produk data dan research.

Kita inginnya untuk data driven journalism yang menghasilkan artikel-artikel berbasis data. Mungkin ke depannya kalau bisa juga kita akan menghasilkan semacam automated konten gitu, dari data-data yang ada menjadi artikel. Kita juga mengharapkan

artikel-artikelnya tidak hanya dari hasil liputan, tetapi juga ada artikel-artikel yang dihasilkan justru dari produk kita yang lain.

Dengan mengaplikasikan data journalism akan sulit untuk compete dengan media yang mengutamakan clickbait. Apakah bisa disimpulkan bahwa Katadata tidak fokus mengejar klik?
Ya. Katadata memang didesain tidak untuk menghasilkan traffic yang sangat besar. Model bisnis dan model medianya tidak didesain menjadi sebuah media umum. Apakah traffic penting? Tetap penting. Tetap kita kejar. Cuma kita nggak compare dengan media lain dengan traffic yang sangat besar. Jadi, kita tidak akan melakukan clickbait.

Sebetulnya traffic juga tidak hanya dari news, tetapi dari divisi data juga diharapkan menyumbang traffic. Itu yang kita sebut dengan *integrated news data*. Kita sadar bahwa news di Katadata secara kuantitas masih sedikit. Beritanya juga pasti nggak "seksi" secara ekonomi dan tidak mencari sensasi. Trafficnya pasti terbatas. Tapi diharapkan memang 289elative sumbangan traffic dari divisi data, dalam hal ini kita punya portal Databoks.

Begitu juga revenue. Sulit mengandalkan dari news sehingga dari divisi data ini kita arahkan bisa menambah revenue buat Katadata.

Bagaimana tren pertumbuhan revenue dari Divisi Data di Katadata?
Kalau data memang sejauh ini belum sangat signifikan. Tetapi, kita banyak sekali mendapat klien yang melihat kita punya kompetensi data dan pengolahan data. Misalnya dari institusi pemerintah yang meminta kita mengolah data ketenagakerjaan dibandingkan dengan job opportunity. Data baru mulai menghasilkan sejak 2018.

Artinya produk data ini tidak secara langsung menghasilkan tapi membuat reputasi Katadata dikenal lebih luas sehingga klien mendatangi Katadata?
Iya. Yang jelas kita polanya integrated news data. Kita upayakan news yang dihasilkan itu di dalamnya ada kombinasi data, misalnya dengan menampilkan Databoks. Sehingga orang mempersepsikan bahwa Katadata punya tensi tidak hanya menulis, tetapi juga mengolah data dan jadi sumber data. Nah, kompetensi itu yang kemudian dilihat orang. Dari situlah data bisa menghasilkan.

Apakah tantangan utama dalam membangun tim data? Apakah manusia, teknologi atau sistemnya?
Ya, kalau dilihat itu semuanya sebenarnya. Katadata memang nggak punya dana cukup besar di awal. Kita nggak bisa membangun sistem data sejak awal. Jadi boleh dibilang sistem data baru kita bangun mungkin dalam 1,5 tahun terakhir. Itu pun membangunnya cukup lama. Sebuah sistem harus dibangun dengan *effort* cukup besar dan memakan *resources* cukup besar. Dalam hal ini dana dan *skill*.

Problem yang lain adalah SDM-nya. Karena di situ ada kompetensi-kompetensi yang tidak ada di dunia industri media yang konvensional. Misalkan kita harus punya data engineer, data analyst, data scientist, statistician, dan harus punya orang yang mengerti modelling. Itu orang-orang yang tidak ada di dunia media kovensional. Nah, tiba-tiba kita harus punya. Tantangannya adalah orang-orang ini berada di luar ekosistem media selama ini. Ketika kita mencari orang-orang itu, kita harus *compete* dengan industri lain

di luar media. Jadi tiba-tiba di industri media harus *compete* dengan industri nonmedia dalam berebut *talent*. Padahal talent-talent itu dibutuhkan untuk membangun kompetensi data. Tidak hanya ketersediaan orang, dari sisi kompensasi pun tinggi. Kemudian perputaran orang juga cepat karena di-hijack perusahaan lain.

Tantangan lainnya adalah ketersediaan data itu sendiri. Kita susah sekali mendapat data di Indonesia.

Apakah datanya ada tapi tak bisa diakses atau memang data itu tidak ada?
Ya semuanya bisa terpenuhi. Ada yang datanya ada tapi kita ngga tahu data yang reliable yang mana. Misalnya data yang berbeda-beda antar kementerian. Itu jadi problem. Kita sering dilema bahkan kemudian dimarahi dua kementerian karena data yang berbeda dan saling berbenturan. Ada juga data yang belum tersedia. Selain ketersediaan data, di Indonesia ini data journalist sangat minim. Jurnalis yang bisa mengolah data sangat langka.

Beralih ke hoaks, bagaimana Anda melihat hoaks dalam beberapa tahun terakhir. Apa peran penting media di tengah maraknya hoaks ini?
Sebenarnya hoaks bukan barang baru, tetapi makin masif setelah perkembangan teknologi dan generasinya makin gadget minded. Menariknya, hoaks justru seperti a blessing in disguise di industri media. Orang mulai berpikir bahwa mereka membutuhkan media yang kredibel. Nah, buat Katadata, hoaks justru mendatangkan opportunity. Peluang kembalinya quality content. Jadi, nantinya media yang bisa bertahan adalah media yang menyuplai quality content. Media yang tidak bergerak ke sana kayaknya akan tertelan di tengah gemuruh media sosial dan hoaks. Bagaimana peran media untuk mengatasi hoaks, menurut saya, sudah menjadi kesadaran bersama di asosiasi media siber Indonesia. Satu-satunya jalan adalah menghasilkan quality content sehingga orang akan tahu informasi dan news yang reliable.

Abdul Manan
Position   : Chairman
Organisation   : Alliance of Independent Journalists (AJI)
Interview date : 27 March 2019

Apa tantangan jurnalis di era teknologi informasi dan sosial media saat ini?
Menurut saya tantangan terbesarnya adalah dari sisi jurnalisnya. Tantangan untuk mengadopsi situasi baru karena media sosial turut menjalankan salah satu fungsi dasar media, yaitu menyediakan informasi. Sebelumnya, fungsi penyedia informasi itu hanya monopoli wartawan dan media. Menurut Saya, media sosial menyebabkan media mainstream jadi berkurang perannya. Mungkin salah satunya ditandai dengan berkurannya jumlah pembaca, berkurangnya oplah, serta tutupnya sejumlah perusahaan media.

Media sosial memberikan informasi yang lebih cepat. Media konvensional tentu saja tidak bisa bersaing dengan kecepatan, tetapi bisa bersaing dalam menyajikan informasi. Kalau tidak bisa lebih cepat, ya lebih akurat. Membuat informasi yang lebih bermakna bagi publik. Menyajikan informasi yang lebih atraktif dan lebih mudah dimengerti.

Menurut saya, tiga hal itu yang kurang dimiliki oleh media sosial. Dengan tantangan dari digitalisasi itu, wartawan dituntut memiliki keahlian baru supaya bisa memberi pembeda dengan media sosial. Salah satunya adalah misalnya mengembangkan jurnalisme data. Ini adalah salah satu inovasi yang bisa dilakukan untuk menghadapi media sosial.

Ada masalah dari media sosial yang bisa menjadi titik kelebihan dari media konvensional. Media sosial dia tidak punya norma-norma yang harus dipatuhi. Orang boleh menulis berita bohong dan tidak ada kode etik yang dijalankan. Terus tidak ada regulasi yang khusus misalnya UU Pers. Orang tidak berkewajiban memasang foto benar. Dia bisa memasang foto palsu, membuat identitas palsu. Karena itu media sosial jadi digunakan untuk penyebaran berita-berita *fake,* berita hoaks. Ini berdampak pada kepercayaan terhadap media sosial. Dan pada saat yang sama, entah itu karena hubungan sebab akibat langsung, itu membuat orang mulai melirik pada jurnalisme. Jurnalisme artinya media konvensional. Jurnalisme menyediakan antidote dari masalah yang diakibatkan oleh media sosial seperti berita *fake,* akun palsu, disinformasi dan macam-macam.

Media konvensional dalam menjalankan fungsi jurnalistiknya terikat oleh sejumlah norma. Misalnya tidak boleh memposting informasi yang tidak jelas sumbernya, tidak jelas kebenarannya dan juga punya kewajiban untuk mematuhi kode etik. Jadi beberapa tantangan akibat digitalisasi itu bisa jadi peluang bagi media konvensional. Wartawan pun dituntut memiliki skill jurnalisme tambahan yang mungkin tidak terlalu dituntut di masa 10 atau 20 tahun yang lalu.

Ada jurnalis yang seolah-olah terbawa media sosial seperti mengutip suatu akun untuk menulis berita. Apakah fenomena ini terjadi karena berlomba-lomba untuk cepat dan mendapat klik?
Saya kira mungkin karena media belum terlalu *confident* dengan jurnalisme atau model bisnis yang dikembangkan sehingga meng-copy saja apa yang menjadi tren dan itu dianggap menyelamatkan model bisnisnya. Media sosial lebih atraktif karena kecepatan dan atraktifnya. Atraktif ini maksudnya berita bohong ini kan sangat atraktif. Media konvensional mungkin juga media online pada umumnya berusaha untuk mengikuti jejak logika popularisme di media sosial. Kalau kita ingin cukup atraktif di media sosial ya harus mengikut bagian dari megikuti tren. Isu apa yang diangkat di media sosial itulah yang diangkat. Sebagian ada faktor misalnya karena meniru keinginan meniru dengan mengharapkan akan mendapatkan benefit.

Dalam kasus pemberitaan Ratna Sarumpaet, sebenarnya jurnalis sudah melakukannya. Jurnalis mewawancarai Fadli Zon dan wawancara tokoh yang mempunyai ototritas. Tapi kemudian ada kritik bahwa jurnalis dan media turut menyebarkan hoaks. Bagaimana Anda melihat contoh kasus seperti itu?
Dalam kasus Ratna, Saya kira salah satu kesalahan media adalah tidak teguh dalam disiplin verifikasi. Apakah misalnya kalo Fadli Zon mengatakan bahwa Ratna Sarumpaet dipukuli itu lantas kebenaran. Menurut Saya, itu sangat jauh. Kalau kita cukup disiplin dalam verifikasi mestinya kan kita memastikan benar nggak Ratna itu dipukuli? Bagaimana caranya? Harus menemui dia. Kalau dia tidak bisa, siapa orang terdekat yang bisa memastikan kondisi dia. Jadi, bukan hanya mendasarkan pada apa yang dikatakan orang tentang Ratna. Media pun tidak berusaha mengelaborasi lebih

jauh. Misalnya dia dipukuli siapa, kapan, dan di mana. Sebagian besar media tidak berusaha mengejar verifikasi dengan serius.

Hanya karena Fadli Zon dan kawan-kawannya mengatakan bahwa dia dipukuli. Menurut saya sangat jauh dari standar verifikasi. Itulah risikonya begitu media tidak disiplin dalam verifikasi. Dia sangat mudah menjadi alat propaganda atau penyebaran disinformasi. Walau pun dalam kasus itu misalnya Fadli Zon merasa dikibuli Ratna. Jadi, ada dosa Ratna, Fadli Zon dan kawan-kawan. Tetapi ada juga dosa wartawan karena tidak disiplin verifikasi.

Kembali tentang hoaks dan disinformasi. Apakah menjadi salah satu alasan AJI kemudian rajin menggelar pelatihan data journalism atau pelatihan-pelatihan lainnya begitu?
Ya. Kita tahu bahwa tantangan di depan mata sekarang ini hoaks. Itu kan problem yang sangat besar karena melibatkan aktor yang dan instrumen yang jauh lebih besar. Bahkan lebih besar dari negara. Untuk menyelesaikannya juga membutuhkan kerja sama berbagai pihak. Pengguna internet dan telepon selular saat ini sangat besar, sehingga hoaks bisa melibatkan orang yang sangat banyak.

Sejak 2018, kita melatih sekitar 1000-an wartawan melalui kerja sama dengan Facebook dan Google. Memang tidak semuanya karena wartawan di Indonesia sangat banyak, mungkin sekitar 80.000-an. Tapi prinsip kita, lebih baik menyalakan lilin, tidak hanya mengeluh. Lakukan saja apa yang bisa kita lakukan. Saya kira melatih wartawan dengan keterampilan aplikasi-aplikasi untuk mengidentifikasi foto hoax, informasi-informasi hoax dan video fake, itu salah satu cara yang penting. Kita mungkin tidak bisa mencegah orang menyebarkan berita hoaks. Tapi kita berusaha mencegah wartawan melakukannya. Dengan begitu menyumbat salah satu penyebar hoaks. Kalau wartawan ikut menyebarkan hoaks, bukannya ikut memerangi akan menambah besar masalah.

Mengenai data journalism di Indonesia, kesulitan jurnalis adalah memperoleh data. Apakah media dapat memanfaatkan Undang-Undang Kebebasan Informasi Publik?
Setahuku hampir tidak ada wartawan dan media yang memakai mekanisme itu karena mekanismenya kurang bersahabat. Media meminta data ke sebuah lembaga dan tidak mendapat respons. Kemudian mempertanyakannya lagi sampai 30 hari. Kalau masih tidak ada jawaban, baru disengketakan dengan menggunakan UU KIP. Sengketa juga lama berbulan-bulan. Jadi waktunya kurang bersahabat. Kalo kita menggunakan mekanisme itu, mibimal 3 bulan baru dapat beritanya. Tiga bulan itu kan lama jadi dari segi waktu memang agak kurang bersahabat dengan media.

Jurnalisme data itu memerlukan skill lain di luar jurnalistik yang konvensional. Media yang ingin mengaplikasikan data journalism memperkerjakan data scientist, data analyst, data gathering dan lain-lain. Dalam proses produksinya juga bagian desain suaranya wajib didengar karena bisa memotong judul begitu. Lalu ada tim SEO. Dengan kondisi itu, banyak orang berpendapat bahwa otoritas jurnalis terkikis. Bagaimana Anda menanggapi hal itu?
Ya, itu memang perkembangan yang tidak terelakkan karena skill baru yang dibutuhkan itu tidak pernah didapatkan jurnalis sebelumnya. Makanya memang harus menerima kenyataan bahwa harus berbagi otoritas berbagi kekuasaan dengan yang non jurnalis. Sangat sedikit jurnalis yang menguasai skill yang dibutuhkan untuk data journalism.

Jangankan dalam skill yang canggih untuk visualisasi, skill dasar seperti Excel saja sebagian besar wartawannya nggak familiar. Jadi ini memang resiko yang harus diterima. Walaupun tentu saja idealnya wartawan, terutama wartawan muda, harus belajar skill baru itu supaya dia bisa cukup adaptif.

Mr Wenseslaus Manggut
Position   : Chairman
Organisation   : The Indonesian Cyber Media Association (AMSI)
Interview date : 27 March 2019

Bagaimana Anda melihat perkembangan media terutama media online di tengah teknologi informasi saat ini dari sisi bisnis maupun dari sisi editorial?
Kalau kita mau melihat bedanya, dulu orang sering sebut media konvensional, informasi itu hanya kami yang produksi, monopolinya media. Kami yang menyampaikan informasi kepada publik. Sekarang hulu dan pembawa informasi itu bukan hanya kita. Di luar sana jumlahnya lebih banyak. Ribuan akun di Facebook. Orang bikin Youtube bisa untuk sarana penyampai informasi. Akun-akun media sosial sudah jadi penyampai informasi.

Penyampai informasi dan pesan brand bukan monopoli media lagi. Kalau dulu hanya media yang menyampaikan pesan brand dan informasi kepada publik. Sekarang banyak tools dan orang di luar sana yang bisa menyampaikan pesan informasi dan pesan brand.

Kami membangun *startup* di tengah suasana yang seperti itu. Jadi lebih sulit daripada ketika media-media konvensional itu tumbuh. Sekarang kalau mau dielaborasi lebih dalam sebetulnya ada dua yang terkait dengan konten. Pertama, teman-teman di technology company. Kedua, kami di media company. Teman-teman yang di technology company seperti mesin pencari Google, jejaring perkawanan Facebook, situs berbagi musik, atau aggregator seperti Line dan Babe, banyak sekali tumbuh di Indonesia.

Apakah mereka media? Bukan, mereka adalah perusahaan teknologi yang menyampaikan konten. Kalau tadinya Google based on search saja, sekarang sudah punya Google News. Facebook punya Instant Article. Aggregator yang punya bisnis teknologi awalnya hanya mencari subscriber sekarang jualan konten. Jadi teman-teman di teknologi company sejak 2-3 tahun yang lalu sudah masuk ke bisnis media company.

Media company seperti kami ini pekerjaannya memproduksi konten dan teknologi hanya platformnya saja. Sementara mereka sebaliknya core-nya teknologi. Kedua kelompok itu pola bisnisnya hampir sama. Teman-teman yang di aggregator atau tech company itu menjual crowd. Teman-teman yang di media company sejauh ini pengiklan itu masih di angka 70-75 jualan crowd juga.

Technology company yang masuk ke bisnis media konten dia basisnya jualan crowd dan data. Di sini sejauh ini yang kuat masih jualan crowdnya, belum pakai data seperti teman-teman di media sosial di Facebook yang sangat presisi. Waktu kita mengisi profil sendiri di Facebook kan paling jujur sekali. Profiling kita sangat jujur. Semua hal

tentang kita ada di situ. Profiling tentang user itu jauh lebih presisif dan lebih lengkap ketimbang di media company.

Jadi kalo media company hanya jualan konten teman-teman teknology sudah jualan sampai jeroannya. Cuma karena model bisnisnya hampir sama, lama-lama cara kerjanya sama-sama mencari crowd. Itu mempengaruhi newsroom. Media dituntut membuat berita cepat. Secara DNA udah hampir sama model bisnisnya. Yang membedakannya adalah media ada regulasi ketat seperti Undang-Undang Pers, kode etik jurnalistik, pedoman media cyber dan sejumlah ketentuan yang ada di situ. Kalo perusahaan teknologi masih pemain bebas. Teman-teman teknologi ini masih main bebas di arena kontennya.

Kita selalu bilang kalau mau merapikan kerja teman-teman di media sebetulnya kita harus bicara juga di sisi teknologi karena model bisnisnya sama. Kita jualan traffic, dia juga jualan traffic. Kita jualan konten, kita juga jualan konten. Nah, sejumlah regulasi itu hanya mengatur media company. Selama ini kalau pun ada yang mengatur technology company yang diatur adalah user-nya, bukan medianya. Kalau orang buat hoaks atau hatespeech di Twitter kan yang dijerat orang yang posting. Seperti menjerat penumpang, bukan perusahaan transportasinya.

Situasi media kita ada di situ. Saya kira itu yang menyebabkan pola kerja media sering dikritik karena pada level tertentu hampir sama dengan pola kerja teman-teman yang ada di teknologi. Nah yang kita harapkan dari pemerintah sebetulnya adalah memetakan ini secara benar lalu menyusun regulasinya secara benar. Begitu kira-kira gambaran umumnya.

Media online dianggap sebagai penyebar hoaks, contohnya dalam kasus Ratna Sarumpaet. Media online dikritik meskipun media itu mendapat dari sumber yang jelas seperti Fahri Hamzah dari Fadli Zon. Sebenarnya bagaimana media online menyiasati model-model pemberitaan seperti ini?

Sebenarnya hoaks itu bukan monopoli kita. Di negara lain juga banyak. Cuma di kita ini sebetulnya pertanyaan besarnya begini: ada UU pers, ada kode etik jurnalistik, yang mana itu sama semua untuk platform. Juga satu lagi yang sifatnya pedoman, yaitu pedoman media cyber. Pertanyaannya, bagaimana media formal seperti kita memperlakukan konten yang bertaburan di media sosial. Kita langsung telan atau kita perlu verifikasi atau apa lah?

Di pedoman media cyber itu sebenarnya clear bahwa konten itu hanya sumber informasi untuk kita telusuri, verfikasi, baru kita tulis. Cuma memang kadang-kadang media sosial itu sudah jadi sumber informasi resmi buat sebagian kalangan. Misalnya teman-teman di lapangan juga sering protes karena dimarahin oleh yang punya akun dalam konteks yang sebaliknya. Bukan karena dia diambil kontennya, tetapi karena wartawan menanyakan keabsahan twit kepada yang punya akun.

Informasi di media sosial itu memungkinkan menjadi sah. Misalnya Presiden update statusnya. Di situ mungkin kita gak perlu nanya lagi benar enggak akunnya dia, karena sudah jadi rujukan resmi. Kalau akunnya resmi dan sering dipakai, mungkin gak masalah. Tetapi, begitu posting sesuatu yang sensitif kita perlu verifikasi. Benar enggak. Jangan-jangan akunnya dibajak. Sebenarnya itu poin untuk menjawab sikap media bagaimana memperlakukan konten-konten di media social.

Dalam kasus Ratna Sarumpaet, sebetulnya media sumbernya bukan lagi dari medsos. Mungkin saat mereka dari medsos masih agak ragu-ragu karena agak sensitive isunya begitu ya paling beredar saja. Paling mereka mensiasatinya dengan kata "dikabarkan" dengan keterangan bahwa masih perlu diklarifikasi. Jadi kalo di media sosial udah ramai, media digital menulis informasi tapi harus selalu disertai keterangan bahwa informasi ini masih harus diverifikasi kebenarannya. Cuma dalam konteks ini diperkuat oleh statement *offline*, bukan lagi dari media sosial, tetapi beberapa tokoh konferensi pers. Jadi yang bicara itu otoritatif sebagai sumber informasi meski sebetulnya memang perlu lebih *digging* untuk mencari.

Bagaimana peran perushaan teknologi?
Kita harus kerja sama dengan teman-teman Google dan Facebook dalam cek fakta. Harus diakui kalau kita mendapatkan sesuatu yang mengerikan atau heboh, andrenalin kita untuk share itu lebih terpacu ketimbang dapat sesuatu yang sifatnya klarifikatif. Karena itu, klarifikasi engagement-nya kecil ketimbang yang versi pertamanya.

Lalu, apakah publik sendiri peduli dengan cek fakta? Apa mereka punya akses informasi yang sama soal itu? Apa mereka peduli juga kalau tahu. Karena itu mestinya teman-teman di technology company harus dilibatkan karena platformnya mereka. Konten itu lewat alat transportasi mereka. Mereka harus diajak bagaimana mencegahnya. Media sendiri sifatnya klarifikasi. Kalau ada hoaks diklarifikasi. Media tak bisa cegah peredarannya.

Model bisnis apa kira-kira yang bisa sustain? Ada model bisnis atau contoh media luar yang menjadi model bisnis yang cocok bagi Indonesia ini seperti apa?
Model bisnis bukan hanya problem media saja atau tidak hanya diselesaikan oleh media, tetapi harus melibatkan 295elative. Mereka diajak mencari model bisnis digital yang kira-kira pas buat brand mereka. Sementara model bisnis yang ada sekarang itu kan masih dari banner. Banner itu hanya menghitung view mengisi traffic. Jika jumlah pengakses semakin banyak hitnya setidak-tidaknya dia mendapat revenue yang bagus dari sisi banner. Banner juga dari sisi bisnis paling kecil cost-nya karena tinggal tempel aja.

Model lainnya seperti content marketing, tetapi udah mulai ada cost produksinya karena kita harus menyediakan orang untuk menulis artikel konten marketing. Kita harus menggaji 4-5 orang untuk membuat konten marketing. Jadi ada budget yang keluar dari uang yang masuk.

Model yang lain misalnya semi konsultan, mengelola website tapi cost produksinya juga besar. Banyak model bisnis di digitial yang kalo didefinisikan secara harafiah bukan bisnis pers. Itu sebenarnya poin-poin kita ke teman-teman Dewan Pers. Kalau kita membuat media print, itu jelas sekali split antara media dengan percetakannya. Tetapi di digital tidak bisa. Di digital Anda harus membangun perusahaan teknologi untuk CMS-nya, baru buat kontennya. Waktu membuat perusahaan teknologi untuk membangun CMS nya izinnya pasti teknologi bukan media. Ketika medianya sudah jadi perlu kah bikini izin media? Nah, kata Dewan Pers cukup tambah itemnya saja, asal teknologi ini tidak berkaitan dengan yang sifatnya proyek ya selama masih di ranah media harusnya tidak menjadi masalah.

Media digital juga item bisnisnya banyak. Contohnya, data di media cetak itu tidak bisa dijual, data di televisi mungkin tidak bisa dijual, tetapi data di digital itu bisa dijual. Ketika kita menjual data ini, apakah masih disebut perusahaan pers tidak? Hal itu yang harus disesuaikan.

Dari semua model bisnis itu, banner bases ini sudah mulai turun. Teman-teman brand itu bilang begini, "Kalo banner basis ini saya bayar medianya karena orang melihat banner saya kenapa gak saya letakkan di sebelah. Kalau di media jumlah orangnya 2 juta, punya dia 150 juta. Pasti lebih murah per orang lihat. Kenapa saya tidak taruh di situ kenapa harus taruh di sini karena sama-sama orang lihat".

Faktanya sekarang setahun terakhir ini dari seluruh brand itu turun untuk banner. Ada brand-brand yang hilang dari media, karena mereka sudah ada di technology. Jika brand sudah buat fanpage bisa 50 juta dan semua perempuan ada di situ kenapa harus pasang iklan di sini? Dia tinggal update fanpage nya, buat acara untuk meningkatkan engagement karena interaktif.

Nah, bisnis offline dan lain-lain seperti big data yang menyangkut orang bisa jauh lebih kuat. Lalu pola berbayar sangat memungkinkan untuk teman-teman yang belum terlalu tenggelam di model bisnis banner basis dan konten marketing. Harus lebih berani masuk ke konten yang berbayar.

Dulu kita berharap dari teman-teman yang dari korporasi besar karena punya penopang di belakangnya seperti Tempo dan Kompas. Mereka punya backbone bisnis yang di belakangnya menopang ini. Mereka seharusnya bisa memelopori konten berbayar itu. Kalau startup yang main langsung di situ akan kesulitan karena tidak punya backup. Kalau mau pakai konten berbayar sangat mungkin, tapi ini tidak hanya menyangkut jurnalistik saja tapi juga menyangkut industri dan audiencenya. Mereka bisa buat itu karena mereka punya barisan jurnalis yang banyak yang punya tradisi print masuk ke digital tetap dengan cara menulis tradisi print sehingga layak orang beli konten-konten itu.

Di kita, bagian terbesar dari massa jurnalistik mungkin paling banyak sekarang jurnalis media online dan sudah terbiasa di dalam model bisnis yang banner atau konten marketing. Apakah bisa? Bisa, hanya mungkin jika dimulai oleh teman-teman media startup akan butuh nafas mengumpulkan pelanggan. Sementara dana invetasi, misalnya, sudah habis dalam 3 tahun. Itu terlalu berisiko untuk teman-teman yang baru membangun bisnis media. Tapi untuk teman-teman yang sudah punya jam terbang yang panjang dalam bisnis media mereka lebih mungkin. Mereka punya tenaga ahli yang bisa menulis panjang dan tidak perlu dikursuskan lagi seperti di startup. Mereka juga pebisnis media yang nafasnya agak panjang karena ada dukungan bisnis.

Bagaimana dari sisi audience?
Audience kita itu sekarang menerima barang gratis secara masif di mana-mana. Sebetulnya ini berkah terselubung buat media online bahwa orang tidak selalu percaya 100%, ada ruang untuk ragu, ada tempat untuk mengklarifikasi benar tidaknya. User atau pembaca kita terlalu banyak diberikan produk gratis dari sisi konten, tapi ekosistem yang ada itu pada akhirnya mereka akan mencari sesuatu yang lebih pruden dari sisi

konten. Dengan mengeluarkan uang tingkat kepercayaan audience terhadap konten yang harus dia bayar itu lebih tinggi daripada yang gratis.

Audience harus dididik. Maksudnya begini, penulis kita yang keren dan mahal itu harus menulis di digital. Jangan juga merasa bahwa gengsi menulis di media online itu kecil, mending menulis di media yang di print. Jadi, kapan pembaca digital membaca konten bermutu kalau orang-orang pintar ini menjaga jarak dengan ekosistem ini.

Ms Wan Ulfa Nur Zuhra
Position : Data journalist
Organisation : Tirto.id
Interview date : 13 March 2019

Bisa diceritakan posisi Anda sebagai data journalist?
Secara struktural, tidak ada posisi data jurnalist. Kami punya tim riset. Kami bekerja hibrid. Mereka punya konten dan kanal sendiri, yang periksa data itu. Mereka juga melayani newsroom untuk mencari dan analisis data. Ketika aku kembali setelah sekolah, aku ditunjuk sebagai manajer kolaborasi, untuk menjalin kerjasama dengan organisasi dan media lain. Juga masuk dalam tim indepth. Aku didorong untuk lebih banyak menghasilkan data story atau investigasi yang berbasis data. Dan menjadikan data analisis itu bukan sekadar data jurnalist, tapi sebagai skil yang harus dimiliki teman-teman lainnya.

Ketika tim indepth mengerjakan data sebisa mungkin mengerjakan sendiri tanpa bantuan tim riset. Jadi secara struktural begitu, tapi secara fungsional yang aku kerjakan adalah data journalist.

Menurut Anda, apa definisi data journalist itu?
Kami bisa pakai organisasi opinion. Intinya bagimana kami bisa melaporkan cerita yang menggunakan atau bermula dari data. Atau diceritakan dengan data, dalam berbagai bentuk. Intinya laporan-laporan yang menggunakan data terstruktur.

Apa saja skill data itu?
Menurutku skill data itu adalah kemampuan computational thinking dan paham dengan statistik. Jadi, basisnya itu dulu saja. Mengerti melihat data, tidak kagok dan bingung, tahu bagaimana cara analisisnya. Kalau pun tidak tahu cara analisisnya paling tidak dia tahu bahwa data itu bisa digarap dan dia bisa minta bantuan orang lain untuk mengerjakannya. Atau minimal bisa menggunakan spreadsheet.

Tim data berapa?
Di tim riset ada 5-6 orang, yang tiap hari bekerja dengan data. Selain itu di newsroom ada jurnalist yang sudah bisa menganalisis dan visualisasi data, sekitar 5 orang. Mereka bisa menggunakan spreadsheet.

Siapa yang menentukan sebuah cerita? Riset atau redaksi?
Tirto mendorong semua laporan ada datanya. Jadi, siapa yang bertanggung jawab adalah editor masing-masing kanal: Indepth, mild, dan current issues. Tidak ada editor

khusus yang mengurus data, jadi angle cerita diputuskan oleh para editor. Kita tidak punya data editor seperti di Guardian.

Menurut Anda, mengapa precise journalism/data journalism itu penting?
Data itu membuat cerita menjadi reliable dan lebih dipercaya. Kita mengatakan yang benar dengan data. Walau data juga bisa ohong dan keliru. Setidaknya, jurnalisme yang dipakai itu lebih akurat dibanding kutipan (air ludah).

Menurut Anda, seberapa penting peran jurnalisme data di tengah maraknya hoax?
Ya, jurnalisme data penting untuk melawan hoax. Saya tidak tahu bagaimana penjelasannya. Tapi data itu kan diasosiakan dengan akurasi dan kepercayaan. Walaupun hoax juga bisa pakai data yang juga hoax. Jadi ini akan terjadi pertarungan baru lagi. Sampai mana kita mempertanggungjawabkan akurasi data. Oleh sebab itu dalam proses jurnalisme data, akuntabilitas sangat penting. Oleh sebab itu kita berusaha akuntable dalam artian, misalnya memberi akses data mentah yang kita gunakan ke publik. Dan menjelaskan bagaimana kita menganalisisinya. Jadi publik tidak hanya melihat hasil jadinya. Publik bisa melihat apakah cara kerja kita benar, sehingga kalau salah bisa dikritik.

Selama ini, data yang dipakai diperoleh dari mana saja?
Data yang bisa diakses publik di lembaga pemerintahan, misalnya. Data yang kami *scrapping* sendiri dari media sosial atau website, kadang database yang kami buat sendiri, misalnya ketika liputan media hoax di Papua, padahal tidak ada datanya. Tapi kami membuat data sendiri. Kadang Tirto juga membuat survey dan riset sendiri yang datanya dipakai untuk tulisan.

Bagaimana dengan data pemerintah?
Sulit sekali.

Maksudnya?
Sulit diakses dan diolah. Kita punya BPS. Datanya bisa diakses dan didownload dengan format yang baik. Tapi banyak hal yang tidak bisa dijawab dengan data BPS. Misalnya, satuannya, sangat umum per provinsi. Padahal kami butuh data per kecamatan. Kalau di negara lain seperti Inggris, sangat bisa meminta data per kecamatan atau desa. Walaupun tidak dipublish, kita bisa langsung kirim e-mail. Di Indonesia hal ini susah, dan data itu tidak update, juga tidak jelas metodologinya. Misalnya indeks kebahagiaan, properti, dan lain-lain, tidak ada penjelasan pencacahannya.

Contoh lainnya di kepolisian. Kami ingin melihat tingkat crime di setiap kecamatan di Jakarta, semestinya itu hal mudah. Di Inggris data itu bisa saya peroleh dalam tiga hari, dalam e-mail dan terstruktur sehingga mudah dianalisis. Kalau di sini kami coba ke Polda tapi tidak diberi, dengan alasan yang tidak masuk akal. Akhirnya kami ke Polres, tapi ada yang memberi data ada yang tidak. Tiap Polres pun format dan indikatornya beda. Data kriminal, misalnya, kami mau melihat jumlah laporan dan jumlah yang sudah selesai. Nah ini tidak jelas indikatornya. Dan untuk mendapat data itu kami perlu 2 bulan, bahkan belum selesai. Jadi, sangat melelahkan untuk berurusan data dengan instansi pemerintah.

Apakah pernah mencoba menempuh jalur Freedom of Information (FOI) lewat UU Keterbukaan Informasi Publik?

Aku gak pernah pakai itu, karena harus pakai proses persidangan. Itu sangat lama. Kalau di luar negeri kan cepat, dalam 20 hari data bisa diperoleh, walaupun ada pengecualian. Tapi ada proses yang dijamin dengan cepat. Kalau kita mau protes dengan FOI, gak tahu harus ke mana. Di luar sana kan kita gak perlu ke pengadilan untuk appeal jika ditolak. Jadi, sebenarnya bagaimana implementasinya.

Jadi cerita kriminal tadi sudah dibuat?

Belum. Kemungkinan kita akan cut, tanpa dua Polres itu. Hasilnya akan buruk sih. Analisisnya akan buruk. Tapi kita gak punya waktu untuk sebuah isu dengan berbulan-bulan menunggu data tanpa kepastian. Jadi ya konsekuensinya akan tidak seperti yang kita harapkan. Awalnya kita berharap bisa melihat kinerja kepolisian dalam menangani satu kasus, misalnya. Dari kasus yang masuk, outputnya apa? Apakah tersangka tertangkap, atau ada persidangan? Tapi ternyata gak bisa dikerjakan.

Dalam pekerjaan yang berkaitan dengan data, apa teknology dan software yang dipakai?

Yang beli hanya Tableu. Ada yang publik, tapi terbatas karena semua data yang kita masukkan menjadi milik publik. Sedangkan kalau mau kita simpan, harus bayar. Yang lain sih gratis. Kami sebisa mungkin mencari yang gratis. Kalau analisis selain pakai Google Sheet atau Excel, kami pakai R atau Python. Yang dua terakhir ini gratis.

Bagaimana dengan sumber daya terkait dengan data?

Ya, tools ada, tapi yang bisa pakai itu gak banyak. Di Tirto hanya 2 orang yang bisa pakai R atau Python. Saya sendiri sangat terbatas dalam memakai Python. Terbatas buat scrapping aja. Source tenaga juga belum banyak.

Bisa diceritakan bagaimana proses produksi sebuah artikel berbasis data?

Mungkin bisa dicontohkan pada kasus First Travel. Tantangannya, semua data, tapi data putusan pengadilan. Data yang tidak terstruktur. PR kami adalah bagaimana menstrukturkan data itu. Semua kan disebut di pengadilan, mulai kronologi, aset, dan lainnya. Data itu kami buat dalam spreadsheet yang bisa diakses semua orang dan dianalisis bersama. Butuh tiga bulan untuk menyelesaikan laporan itu dengan 4 orang terlibat.

Kami merapikan data secara kronologis dan aset. Itu sifatnya data investigatif. Dari data itu kami menemukan hal-hal yang mencurigakan. Data itu kami jadikan grafis. Pesan saya, jika dalam proses itu kamu tidak punya sense of data, akan sangat overwhelmed, dan tidak akan menemukan detail-detail yang menjadi penting dalam penulisan. Salah satu temuannya adalah aset yang dimiliki di London (Nusa Dua) ternyata berganti nama berkali-kali. Ternyata proses tanggalnya ada hubungannya dengan proses persidangan di Jakarta. Ini luput dari media lain di Jakarta. Mereka tahu ada aset di London tapi mereka tidak tahu bagaimana kepemilikannya diubah-ubah. Saya cek di Companieshouse, dan saya cari dari alamatnya dan nomor registrasi. Nama PT bisa berubah tapi alamat dan nomor registrasi tidak berubah. Ternyata, setelah kami cek, Nusadua itu terdaftar atas nama orang yang menjadi chef di restoan itu, namanya cuma dipakai saja.

Siapa yang menentukan visualisasi?

Ada tim multimedia. Ada designer dan tim story board. Penulis bikin naskah infografik, walaupun dia bisa membuat visualisasinya. Tim story board akan merancang, data mana

saja yang perlu dan datanya, gambarnya apa? Problemnya, mereka belum melek dengan tools-tools interaktif. Jadi kalau mau buat interaktif, saya harus bikin sendiri.

Apakah ada kompromi antara penulis dan desainer?
Ya, terjadi untuk laporan-laporan besar. Meeting bareng tim IT, multimedia, redaksi, dan para penanggung jawab. Ya, kami berdebat. Tapi untuk proses cepat, tidak terlalu menimbulkan perdebatan karena ditengahi oleh tim storyboard. Memang dulu agak melelahkan karena harus bolak-balik mengarahkan designer, kadang sampai aku gambar. Sekarang problem itu dijawab dengan tim storyboard, yang memiliki latar belakang design. Tapi mereka paham jurnalism dan data. Oia, peran IT untuk tampilan di web.

Dengan keterlibatan banyak pihak dalam memproduksi karya jurnalistik, apakah menurut Anda peran jurnalis tereduksi?
Aku gak melihat itu mereduksi. Malah menjadi lebih optimal. Jurnalis gak paham deseign, jadi perlu orang lain. Itu *fine-fine* saja. Mungkin karena saya jadi jurnalis ketika era kolaborasi dengan IT dan designer terjadi. Itu malah baik, dan kita juga harus menurunkan ego. Dulu kan jurnalis cetak mungkin lebih "egois", pokoknya tulisan paling penting. Sekarang kan zaman berubah, cara menarasikan cerita tidak melulu dengan tulisan, ada gaya narasi lain yang diperlukan, dan jurnalis ga bisa melakukan sendiri, jurnalis perlu berkolaborasi. Bahkan produknya lebih bagus. Untuk hasil produk, kompromi tidak masalah, tapi yang menjadi masalah adalah tuntutan traffic.

Maksudnya?
Menilai bagus atau tidaknya tulisan dari traffic. Ini menjengkelkan. Karena ada beberapa bidang yang secara umum memang tidak menarik di bidang lain. Tulisan ekonomi, misalnya, sulit diukur dengan jumlah view.

Ada berapa orang tim indepth dan menulis berapa laporan?
Tim indepth 8 orang, seminggu 3 laporan. Satu laporan ada 2-4 bahkan 8 tulisan, termasuk grafik. Semua kami pakai grafik, kecuali hard news dari lapangan.

Apakah ada kendala di designer dalam laporan indepth?
Sekarang bisa diatasi karena jumlahnya di tambah. Nama mereka masuk masshead.

Ada tambahan informasi?
Iya, saya terganggung dengan title data jorunalism karena itu membuat gap dengan jurnalis lainnya. Seharusnya itu kan skill yang bisa dimiliki setiap jurnalis. Saya merasa itu gimmick dan dibesar-besarkan. Seharusnya itu kemampuan dasar bagi jurnalis. Memang proses kerja kita kan berbeda. Tapi itu memang beda pendapat. Sama halnya dengan jurnalis investigasi, seolah mereka di kelas yang berbeda dengan jurnalis lainnya, padahal kerjanya sama. Jadi, daripada membuat gap-gap, lebih baik itu menjadi skill tambahan, bukan posisi yang berbeda.

Mr Nufransa Wirasakti
Position   : Head of Communication Bureau
Organisation   : Ministry of Finance
Interview date : 19 March 2019

Bagaimana Kementerian Keuangan merespons hoaks yang selama 2-3 tahun ini sangat masif?

Biasanya kita menjawab dengan menggunakan data dan fakta. Biar data dan fakta yang berbicara. Tidak perlu kita banyak omong tapi data dan fakta ada. Permasalahannya adalah data dan fakta ini ada di tempat-tempat lain. Misalnya data anggaran ada di Ditjen Anggaran, data pajak ada di Ditjen Pajak, jadi menyebar semua. Sementara kan kita di sini bukan pengelola koornya, kita kan supporting tepatnya. Tentu saja kita perlu harus tahu juga, di mana titik-titik yang kira-kira bisa kita kontak dengan cepat sehingga ketika data itu kita butuhkan itu responsnya cepat. Itu juga perlu teknik sendiri karena kalau kita mau pakai cara-cara birokrasi, pakai surat, itu lama banget, dari saya, nanti ke sekjen-sekjennya, belum naiknya lagi ke atas. Jadi kita mapping, kira-kira orang di pajak siapa yang bisa kita contact dan responnya cepat, kita punya semua itu kontak-kontaknya.

Dalam beberapa tahun ini, apa contoh hoaks yang paling menyebalkan atau paling menyerang sekali lah untuk Kemeterian Keuangan?

Yang paling sering mengenai utang. Isu utang itu biasanya selalu berulang di awal tahun. Ketika kita mengumumkan hasil APBN sebelumnya. Biasanya muncul dari Januari sampai Februari hoaks tentang utang. Kemudian ada juga pernyataan Menteri Keuangan yang mungkin di-quotes sedikit-sedikit, kemudian dipelesetkan, itu juga sering. Menteri Keuangan yang sekarang kan public figure ya, sehingga ketika dia membicarakan sesuatu dipelesetkan. Ketika seseorang ingin terkenal juga tinggal *mention* saja menteri, kemudian dia berharap itu akan menjadi satu yang viral. Contoh, dia punya Bitcoin wallet padahal kita sudah melarang itu dan tidak menganggap itu sebagai sesuatu yang sah atau legal gitu. Ada lagi hoaks katanya waktu ke Gontor diusir karena membawa cek bernilai besar, yang saya kira mengada-ngada. Hanya kalau kita diamkan saja, mungkin bisa jadi ada orang yang percaya gitu dan beberapa hal lainnya.

Kadang hoaks atau disinformasi disebarkan oleh tokoh publik, misalnya Rizal Ramli. Untuk menghadapi posting tokoh-tokoh itu bagaimana? Apakah ada perlakukan khusus atau bagaimana?

Paling sering memang dia. Untuk mengahadapi yang seperti itu ya, karena kita memiliki data yang valid, komplit, lengkap, dan memang kita juga sudah keluarkan resmi, jadi kita berdasarkan fakta dan data aja. Tidak semua yang dia ocehkan atau cuitkan itu kita jawab, kadang-kadang kan hanya dua-tiga baris tapi kalau kita anggap tidak krusial, jadi tidak perlu kita tanggepin. Sebagian besar tidak kita hadapkan langsung dengan Menteri Keuangan, jadi cukup saya. Bahkan Bu Menteri pun pernah bilang, "Sudah waktunya ini di bawah kamu, tidak perlu saya lagi gitu, ngapain ocehan gitu diladenin".

Bagaimana ide awal pembentukan kreativitas di tim publikasi ini? apakah memang awalnya karena kebetulan banyak data jadi kita bikin gambar atau memang sudah direncanakan ini akan jadi semacam jurnalisme data pemerintahan untuk melawan hoaks?

Yang pasti kan APBN itu banyak angka ya. Banyak angka kalau dalam satu rim tebal banget gitu. Bagaimana kita mensosialisasikan suatu angka tanpa ada satu keterangan yang menarik, yang sifatnya bisa divisualisasikan, itu juga tantangan tersendiri. Jadi Kementerian Keuangan berusaha semaksimal mungkin untuk menerjemahkan data-data

itu supaya bisa dikunyah oleh masyarakat dengan gampang. Contoh misalnya kita bikin semacam aplikasi "Andai saya menjadi Menteri Keuangan". Di situ kita bisa pilih, misalnya anggaran untuk pendidikan berapa, untuk kesehatan berapa. Mereka bisa merasakan sendiri bagaimana susahnya mengalokasikan anggaran.

Kita juga menggunakan infografis dan berbagai macam cara termasuk pembuatan vlog yang mensosialisasikan APBN. Tapi itu semua tidak terlepas dari perencanaan kita dalam satu tahun. Kita punya perencanaan grand design, komunikasi publik itu selama dua tahun, 2016 dan 2018. Sekarang kita perbarui dari 2018 sampai 2020, setiap dua tahun. Setiap tahun kita sudah punya jadwalnya. Ini sifatnya rutin dan untuk mengedukasi publik supaya mereka bisa memahami APBN, di luar yang sifatnya serangan-serangan hoaks. Di situ kita rencanakan, bulan ini topiknya apa. Kemudian dari tempatnya pak Wit juga mengikuti mungkin pemberitaan, kita punya In House Magazine yang nanti topiknya juga senada dengan ini.

Menurut Anda, apakah menjadi viral itu penting?
Dari sisi kami kalau filosofis kita bikin konten kan untuk mengedukasi terkait dengan pengelolaan kebijakan keuangan dan kekayaan negara. Ketika itu jadi viral sebenarnya itu jadi bonus dan bukan jadi semacam target, karena konten-konten tentang APBN itu sangat segmented banget. Kecuali kalau konteksnya terkait dengan hoaks, memang jadi tujuan untuk viral. Sehingga ketika viral tentu akan lebih bagus, tapi kalau yang rutinnya lebih ke "bagaimana konten kita bisa diterima". Jika pada akhirnya viral itu jadi bonus untuk kita sebenarnya.

Bisa diceritakan latar belakang tim produksi di biro komunikasi Kementerian Keuangan?
Kalau SDM di kami itu banyak orang yang dipaksa untuk di situ karena penugasan. Tapi sudah 2-3 tahun belakangan ini kita sudah dapat desain komunikasi visual juga anak komunikasinya. Sisanya itu teman-teman dari prodip STAN, yang tidak ada sangkut pautnya dengan komunikasi, tapi ketika dapat penugasan di tempat kami, mereka dibekali kemampuan dasar-dasar jurnalistik, teknik wawancara, teknik pembuatan infografis. Jadi basicnya kita lengkapi, kecuali teman-teman yang backgroundnya dari DKV sama komunikasi. Jadi kalau dibilang komposisinya lebih banyak yang produk STAN lama, tapi karena penugasan juga sudah lama di tempat kami, jadi mereka sudah terbiasa, justru lebih fasih menulis berita daripada dia harus mengkalkulasi angka-angka. Sekarang sudah terbalik, karena mungkin pekerjaan dia itu mengharuskan untuk menulis. Sebagian memang punya passion di situ, yang suka menggambar, desain grafis, suka bikin video.

Tadi kan ada diberi bekal-bekal jurnalistik. Apakah itu dikirim ke media atau mendatangkan ahli ke sini untuk memberikan bekal-bekal?
Dua-duanya. Jadi kalau ada kesempatan untuk workshop, seminar atau pelatihan di luar kita ikutkan. Tapi ketika flow kerjanya sedang banyak, kita mendatangkan narasumber-narasumber ke kantor. Jadi kalau kita mendatangkan itu sebenarnya lebih untung, karena yang akan disharenya kan lebih banyak. Mungkin tidak hanya teman-teman di tempat kami yang hariannya menulis dan membikin infografis, tapi semua teman-teman di biro komunikasi juga yang punya passion atau berkeinginan tau. Tapi kalau misalnya ke luar, kita kasih penugasan atau terkadang mereka menawarkan, selama itu ada

relevansi dengan pekerjaan kita tidak pernah membatasi kalau soal upgrade wawasan itu.

Persepsi umum menyebutkan bahwa di instansi pemerintahan itu diisi orang tua dan kreativitas, apalagi infografis, itu masih tertinggal. Bagaimana peta usia di biro komunikasi Kementerian Keuangan?

Kalau di tempat saya itu rata-rata usianya 27-28, yang paling senior itu ada 45 tahun, yang paling muda itu 19 tahun kalau tidak salah. Jadi rangenya memang di usia-usia yang milenial semua, jadi itu mungkin salah satu keuntungan kami. Ketika kita bikin konsep yang kontennya ditujukan ke banyak milenials yang mengerjakan juga milenial. Jadi mereka bikin konten itu sudah persepsi atau paradigma mereka sebagai milenial. Kalau kita kan berbeda, kontennya masih agak konvensional, tapi ketika mereka yang bikin terkadang come up dengan ide-ide yang kita tidak terpikirkan seperti itu, kita sangat menikmati. Artinya tidak ada pakem dan konten website kami sudah jauh dari konteks birokrat sebenarnya.

Berapa jumlah orang orang yang terlibat dalam produksi di biro komunikasi Kementerian Keuangan?

Produksi kita ada dua output yaitu digital dan cetak. Kurang lebih jumlah totalnya ada sekitar 20 orang, yang digitaln 10 dan cetaknya 10. Sebenarnya kita masih belum ideal juga dengan tuntutan dan channeling yang dikelola banyak. Dengan konten kita yang sangat dalam sebenarnya mungkin boleh dibilang belum ideal, tetapi kita berusaha mengoptimalkan apa yang sudah ada.

Apakah semua ASN, tidak ada honorer?

Iya, semua ASN. Kita itu berkepentingan dengan pihak ke tiga, kalau dicetak karena kita tidak punya mesin percetakan sama sirkulasi. Tapi semua desain, konten, proses wawancara, layouting, itu kita semua. Nanti mungkin kita kasih contoh campaign media keuangannya itu sudah ada di versi webnya dan juga ada di appsnya. Kalau yang digital, kita ingin per channel itu ada satu dedikasi PIC untuk videografer kita punya, fotografer kita ada satu sub yang memang fokus untuk itu. Jadi semua konten-konten yang ada di tempat kita itu tidak ada yang outsource dan beli, semuanya inhouse.

Kalau untuk prosedur pembuatan infografis yang bukan terencana, misalnya dadakan. Bagaimana supaya bisa cepat?

Sebenarnya kalau bicara data, kalau datanya sudah kita kuasai atau data-data statis itu bisa cepat karena kita ada beberapa teman yang punya kompetensi untuk itu. Jadi kendala itu jika isunya sangat sensitif terus datanya itu perlu kita compile dulu, dan yang memutuskan juga tidak hanya dari unit teknisnya.

Jadi kalau dibilang cepat merespons atau dibikin infografis itu relatif di validaasi data sebenarnya. Terkadang di tempat kami ketika ada deadline atau project, harus mengatakan pada designernya dulu. Kadang kan tidak bisa kontennya itu dikerjakan oleh orang-orang yang tidak punya kompetensi, karena kita punya standar juga. Bagaimana pun caranya konten agar yang kita publish itu sudah sesuai standar. Yang jelas validasi data, kita tidak mau data yang kita posting itu salah, karena impactnya itu sangat luar biasa ya. Apa lagi kalau bicara mengenai keuangan negara, itu situs resmi tapi data yang dipostingnya salah. Kalau dari sisi kami lebih ke mekanisme validasi data, kalau untuk internalnya sejauh ini belum ada kendala.

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