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The process of frame-building regarding climate change in Indonesia

Der Prozess des Frame-Building in Bezug auf den Klimawandel in Indonesien

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Abstract: This study examines the frame-building process regarding climate change in Indonesia, an emerging country in the Global South that produces significant carbon emissions and is one of the nations most affected by the climate crisis. Through a quantitative content analysis of press releases from the Indonesian government and environmental non-governmental organizations (NGOs) and media coverage of climate change, this study identifies three frames promoted by policy actors and five frames used by in-house journalists from print and online media organizations in Indonesia. A comparison of these frame sets shows that journalists often use frames on climate change that are not promoted by either political actors or NGOs. Nevertheless, the government is the most important source for journalists on climate change reporting. Next, a second step investigates how different contextual conditions influence the collaboration between journalists and their sources in the frame-creation process to examine it in more detail. Hence, this study relies on the hierarchy of influence (HI) and intereffication (IE) models. To this end, journalists, academics, and PR officers from Indonesia's government organizations, environmental NGOs, and palm oil lobby organizations are interviewed. The results show that organizational structure, financial resources, and personal networks influence how successfully PR officers disseminate their frames, while journalists' frame selection is influenced by their media affiliations, routines, professional experience, and interests. This study also discusses how macro conditions in Indonesia influence these micro- and meso-level processes, such as the social system and distinct cultural and historical contexts.

Keywords: Climate change, frame-building, cluster analysis, hierarchy of influence model (HI), intereffication model (IE).

Zusammenfassung: Diese Studie untersucht den Prozess des Frame-Building in Bezug auf den Klimawandel in Indonesien, einem Schwellenland im Globalen Süden, das erhebliche Kohlenstoffemissionen produziert aber gleichzeitig auch zu den am stärksten von den Folgen der Klimakrise betroffenen Ländern gehört. Anhand einer quantitativen Inhaltsanalyse von Pressemitteilungen der indonesischen Regierung und von Umwelt-NGOs sowie der Medienberichterstattung über den Klimawandel identifiziert diese Studie drei Frames, die von politischen Akteuren gefördert werden, und fünf Frames, die von Journalisten verwendet werden, die bei Print- und Online-Medienorganisationen in Indonesien beschäftigt sind. Der Vergleich dieser Frame-Sets zeigt, dass die Journalisten sehr häufig Frames zu Problemen des Klimawandels verwenden, die weder von politischen Akteuren noch von

NGOs verwendet werden. Dennoch ist die Regierung die wichtigste Quelle der Journalisten für die Klimaberichterstattung. Um den Entstehungsprozess von Frames genauer zu untersuchen, wurde in einem zweiten Schritt untersucht, wie verschiedene Rahmenbedingungen die Zusammenarbeit zwischen Journalisten und ihren Quellen beim Entstehungsprozess von Frames beeinflussen. Dafür stützt sich die Studie auf das HIM- und das IE-Modell. Zu diesem Zweck wurden Journalisten, Wissenschaftler und PR-Beauftragte von Regierungsorganisationen, Umwelt-NGOs und Palmöl-Lobbyorganisationen in Indonesien befragt. Die Ergebnisse zeigen, dass die Organisationsstruktur, die finanziellen Ressourcen und die persönlichen Netzwerke die Art und Weise beeinflussen, wie erfolgreich PR-Verantwortliche ihre Frames verbreiten, während die Auswahl der Frames durch die Journalisten von deren Medienzugehörigkeit, Routine, Berufserfahrung und Interesse beeinflusst wird. In dieser Studie wird auch erörtert, wie diese Prozesse auf der Mikro- und Mesoebene von den Makrobedingungen in Indonesien beeinflusst werden, wie z. B. dem gesellschaftlichen Regelsystem, aber auch dem kulturellen Kontext und den besonderen historischen Erfahrungen.

Schlagwörter: Klimawandel, Frame-building, Inhaltsanalyse, Hierarchy of Influence Model (HI), Intereffication Model (IE).

1. Introduction

A 2021 Intergovernmental Panel on Climate Change (IPCC) report stated that specific severe impacts of climate change (CC) have become irreversible, with CC-related risks becoming widespread and intensifying worldwide. The change in the world's temperature is destroying the natural environment and threatening human life. Accordingly, CC and its consequences are both environmental and social problems. The global social crisis created by CC is one of the most severe challenges facing current and future generations. When these crises emerge, they become the subject of media coverage. In a liberal democratic system, the media provide a space for communicators, such as politicians, interest groups, and scientists, to "meet" and "discuss" with the public about these challenges and possible solutions. However, the media are not neutral platforms; they also frame the debates in certain ways by selecting and highlighting specific aspects of the issues.

How an issue is framed in the media is critical because it influences how societies react and how successfully they can handle problems. "When journalists select and produce news, how they frame it is consequential for citizens' understanding of important issues" (Lecheler & de Vreese, 2019, p. 1). Communication scholars have widely researched the effects of news frames on CC (e.g., Detenber et al., 2018; Jin & Atkinson, 2021; Nisbet et al., 2013).

Science communications scholars have widely acknowledged news framing as a continuous process (Lecheler & de Vreese, 2019; Scheufele, 1999), where "outcomes of certain processes serve as inputs for subsequent processes" (Scheufele, 1999, p. 114). Within this process, various actors attempt to push their frames to the media, whereas journalists "somehow" select the most appropriate frames for their audience. Scholars have called this process frame-building (Hängli, 2011; Lecheler & Vreese, 2019; Scheufele, 1999). However, despite its high relevance, research on frame-building investigating the production process of news frames is

rare. A systematic literature analysis of 93 peer-reviewed journals on conceptual issues in framing theory has shown that only 2.3 percent of framing research addresses the production of news frames (Borah, 2011).

The situation is similar in the field of climate communication. Several systematic literature analyses in the field have shown that few studies have been conducted to explain frame-building processes regarding CC (Agin & Karlsson, 2021; Schäfer & O'Neill, 2017). Climate communication scholars acknowledge that it is virtually impossible to understand mediated climate communication without analyzing frame-building (Schäfer & O'Neill, 2017) and news-production processes (Hansen, 2011; Olausson & Berglez, 2014).

The situation is even more dire concerning research on CC communication in many parts of the Global South. Systematic literature reviews (Agin & Karlsson, 2021; Schäfer & Schlichting, 2014) have shown that research on climate communication in developing nations remains rare. This deficit is a serious issue because most of these nations are highly affected by CC. In 2019, nine of the ten countries most affected by extreme weather events were Global South nations with low scores on the Human Development Index (Eckstein et al., 2021). Regarding CC, these countries struggle far more than developed nations from the Global North because they must juggle between CC mitigation and adaptation efforts while possessing limited resources for both. Therefore, investigating how the media (as the space of public discourse) covers the topic is highly relevant to understanding how these balancing processes operate. Accordingly, the present paper analyzes how the media covers CC in a country in the Global South and scrutinizes why they do so. Indonesia is a relevant example as the largest country in Southeast Asia in terms of gross domestic product (GDP), territory, and the number of inhabitants. It is also the only G20 member in the region. As the largest archipelago in the world, with more than 17,000 islands, Indonesia faces severe CC impacts because millions of its inhabitants live in coastal areas constantly threatened by flooding. However, Indonesia is also among Asia's most significant carbon emitters due to its extensive use of coal for energy production and export.

Considering the abovementioned deficits, the current study aims to address two gaps in the research on framing and climate communication. It examines *which* frames exist in print and online news outlets and *how* this coverage is influenced by political actors, nongovernmental organizations (NGOs), and scientists who promote their frames to gain media attention. As such, the present study contributes to the field of framing research, which is dominated by studies of media frames and framing effects. Studies from the Global North currently dominate scientific research on climate communication. Hence, this present study provides valuable insight into the framing of CC in a developing nation in the Global South.

The present study conducts a content analysis of news media articles and press releases from actors serving as important sources for the media to achieve these aims. Additionally, interviews are conducted with journalists, PR officers, scientists, and campaigners of environmental organizations in Indonesia.

To set the research context, Section 2 describes Indonesia's media system and position in global CC politics while outlining the state of research on CC communication in Indonesia. In light of this contextual description, the subsequent

section poses research questions. Section 3 discusses the theoretical concepts of frame-building and relevant theoretical models to explain the relationships between journalists and PR personnel. These models serve as the theoretical foundation of empirical research. Section 4 presents the analysis and findings related to the content analysis, while Section 5 does the same for the qualitative interviews. Section 6 discusses the findings, and Section 7 provides the conclusions.

2. Indonesian context for climate change, media systems, and climate communication

Because the present study focuses on frame-building processes that investigate the relationship between two subsystems – journalism and PR (further discussed in Section 3) – this section describes the larger system within which these two subsystems lie: the media system of Indonesia. To understand the Indonesian media system, the country's political situation and economic development are first presented. In this context, the role of CC in Indonesia and Indonesian politics toward CC are also considered.

2.1 Economic development and climate change

Indonesia is an archipelago comprising more than 17,000 islands; with more than 280 million people, it is the world's fourth-most populous nation. Indonesia was conquered by the Europeans in the 16th century and gained its independence in 1945. In the late 1960s, the country entered a period of continuous economic growth that lasted for over three decades, averaging 6.7 percent annual growth until the 1997–1998 Asian economic crisis (Thee, 2012). Rapid economic development has positively impacted poverty reduction in Indonesia. Between 1999 and 2019, the poverty rate halved to under 10 percent (The World Bank, 2020). Fossil fuels have driven this economic and social development as Indonesia's largest energy source and are predicted to remain so for the next 25 years (National Energy Council, 2019).

Indonesia's oil exports have significantly enabled this fantastic economic growth. Although Indonesia was previously a member of the Organization of Petroleum Exporting Countries (OPEC), due to increasing domestic demand, it became a net importer of oil in 2004 and accordingly suspended its OPEC membership in 2009 (U.S. Energy Information Administration, 2015). Having overcome the 1998 Asian financial crisis, Indonesia today is the strongest economic power in Southeast Asia and the only member of the G20 in the region, with GDP growth predicted to surpass 5 percent in 2022 (The World Bank, 2020).

Indonesia is the fifth-largest producer and second-largest exporter of coal in the world (Smith, 2018). In addition to coal mining, palm oil is one of the country's major economic sectors. Indeed, palm oil exports are among Indonesia's biggest sources of income and directly and indirectly employ over 20 million people (Fernandez, 2021). The export value produced by the palm oil industry is even higher than coal or liquid gas (Badan Pusat Statistik, 2022a, 2022b; Sawe, 2018). However, the intensive reliance on fossil fuels and extensive land use required for palm

oil production are among the main factors driving Indonesia's high CO_2 emissions. Indonesia's third biennial update report for the United Nations Framework Convention on Climate Change (UNFCC; Boer et al., 2021) specifically mentions that the agricultural, forestry, and land use sectors contribute to more than 50 percent of Indonesia's CO_2 emissions. Indonesia currently ranks as the tenth largest emitter of CO_2 worldwide. However, the nation's per capita emissions are significantly lower (ranked 121st; Global Carbon Atlas, 2020).

Indonesia ratified the Kyoto Protocol and Paris Agreement, so it has regularly reported its CC commitments and strategies to the UNFCC (Boer et al., 2021). Based on the Nationally Determined Contribution (NDC) submitted in 2017, Indonesia aimed to reduce its greenhouse gas emissions by 29 percent by 2030 (Masripatin, 2017), which remained the same in the updated NDC 2021 (Dhewanthi, 2021). Among the most significant changes in the updated NDC was adding a climate adaptation strategy and information to facilitate clarity, transparency, and understanding of the NDC.

2.2 Indonesia's media system and journalism

According to Freedom House (2021), Indonesia has a partly free democracy and press. The country's media system is highly centralized regarding ownership and location. Despite being the world's largest archipelago, inhabited by thousands of native ethnicities that speak hundreds of languages, most of Indonesia's media companies are located on and operate from Java. The centralization of the media landscape in Indonesia is rooted in the country's history.

Indonesia's public radio broadcast (RRI) was established by the country's first president, Sukarno, to diffuse his political rhetoric to the entire nation (Priyadharma, 2022). Meanwhile, during the New Order regime under Suharto, the second president, who ruled the country from 1966 to 1998, the primary function of media and communication in Indonesia was to propagate national economic development and ensure its implementation in all provinces. Indonesian public television (TVRI) was established during this period to spread the government's economic development mission widely. In other words, development communication in this era was understood as "linear-instructional and top-down; from the government, which was centered on Suharto, to all levels of society . . . Suharto maximized the use of media, whose operations were tightly controlled by the government, to spread and instill the modernism values" (Priyadharma, 2022, p. 15). Despite the reformation of the media landscape and the institution of freedom of speech after the fall of the Suharto regime in 1998, TVRI remains trapped in its role as a propaganda tool to serve the government's interests (Masduki, 2020).

TVRI was the only television broadcaster in Indonesia until the government allowed the private sector to open the privately owned channel Rajawali Citra Televisi Indonesia in 1988 since the president's son owned it. Several additional private TV stations, established in the 1990s, were also owned by family members or close friends of Suharto and had close ties with elite politicians in Indonesia (Armando, 2014). This type of ownership has remained. Most national and regional media companies in Indonesia belong to a handful of conglomerates and

media moguls who are also active politicians or owners of coal mines, palm oil companies, or both (Armando, 2014, 2019; Lim, 2012; Tapsell, 2017). Empirical research has shown that media owners' interests significantly influence media content in the country (Heychael, 2014). Meanwhile, the percentage of Indonesians using digital and social media is among the highest in the world, which has contributed to the rapid decline of print media readership in the country (Rochyadi-Reetz & Löffelholz, 2019)

A long tradition of development communication in Indonesia seems to be ingrained among the most important roles that Indonesian journalists have adopted. A Worlds of Journalism Study survey of Indonesian journalists showed that more than 75 percent of journalists agreed that supporting national development is a very important task for journalists (Muchtar & Masduki, 2016). In comparison, only 26.5 percent of journalists in Australia considered this role highly important (Hanusch, 2016), while in Germany, the figure was only 14 percent (Hanitzsch et al., 2016). This strong agreement over supporting national development is not surprising. Media regulation and media ownership structure are important macro conditions that significantly influence journalists' work in Indonesia (Muchtar & Masduki, 2016). Per this logic, any report on the urgency of the climate crisis or other environmental issues may be perceived as hindering the country's economic development because Indonesia's goal to constantly maintain or increase its economic development is achieved primarily by the extensive use of fossil fuels and land use transformation. Hanitzsch (2005, 2006) even labeled Indonesian journalists "timid watchdogs" who disapprove of previous reporting practices and are strongly influenced by macro-level factors, particularly political and economic conditions, as well as public opinion.

2.3 Climate communication in Indonesia

Unlike developed Western nations, where the media and public began focusing on CC in the 1970s and 1980s, this issue first appeared on the front pages of Indonesian newspapers when the Conference of the Parties (COP) 13 was held in Bali in 2007 (Cronin & Santoso, 2010). This high attention rate was stimulated by this high-ranked international meeting, which had a sense of being a home-based event, while the media coverage of COP 14 in Copenhagen a year later was low (Eide & Kunelius, 2010). Even in 2016, CC still received limited attention in the Indonesian media. For instance, Wahyuni (2017) investigated the number of articles about "climate change," "terrorism," and "corruption" published in *Kompas*, the most prestigious newspaper in Indonesia, from January to July 2016 and found only 196 articles with the term "climate change," while 611 articles reported on terrorism, and 1,173 mentioned corruption.

A systematic literature review of top communication journals in Indonesia revealed that, in 480 peer-reviewed articles published from 2010–2020, only one article contained a study of the media coverage of CC in the Philippines, with no mention of Indonesia (Rochyadi-Reetz & Wolling, 2023). However, book chapters and international publications on media content research related to CC in Indonesia exist, such as those by Irwansyah (2016), Sarwono (2010), and Wiratmojo

and Samorir (2012). These studies investigated which CC-related frames appeared in the media. For example, Irwansyah (2016) found that Indonesian journalists applied the "environmental problem" frame and frames related to "scientific facts and research" in their climate reporting. Meanwhile, during COP meetings, Indonesian journalists deployed the "international blame game" frame, accusing developed Western nations of being selfish and irresponsible, and the "domestic conflict" frame, highlighting the tension among national actors during conferences (Sarwono et al., 2012; Wiratmojo & Samorir, 2012).

Although these findings are highly valuable, they are over a decade old. In the meantime, key political events concerning the fight against CC have occurred, such as the Paris Agreement in 2015, and new scientific facts have emerged, such as the impacts of 1.5 degrees Celsius global warming reported in 2018 by the IPCC. These critical landmarks may have influenced the public discourse on CC in Indonesia. For instance, Indonesia ratified the Paris Agreement at the national level and published its first NDC in 2017. However, no studies have investigated the process of frame-building in the media.

3. Models to explain the frame-building process

3.1 Frame, framing, and frame-building

Sociologists, political scientists, and media and communication scholars have proposed many definitions of frames and framing. Framing is "a continuous process where outcomes of certain processes serve as inputs for subsequent processes" (Scheufele, 1999, p. 114). A systematic literature analysis by Matthes (2009) revealed several definitions of a frame in communication science. In his review, Matthes identified two types of definitions. First were definitions offering a basic understanding of the idea of frames while leaving the concrete understanding of the concept open. Examples included definitions of media frames from Gamson and Modigliani (1989, p. 3) as a core of media discourse "making sense of relevant events, suggesting what is at issue," and Scheufele (1999) as devices "to turn meaningless and nonrecognizable happenings into a discernible event" (p. 106).

According to Matthes (2009), the second definition type offers clear guidelines for operationalization in empirical research. An example is the definition proposed by Robert Entman (1993):

> Framing essentially involves selection and salience. To frame is to select some aspect of a perceived reality and make it more salient in a communicating text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation. (p. 52)

This definition "provides precise operational guidelines" (Matthes, 2009, p. 350), distinguishing frames from other communication concepts, such as themes and arguments. A clear definition of a frame is fundamental in empirical research, particularly concerning validity and reliability (Matthes & Kohring, 2008). Based on this argument, the present study employs Entman's (1993) frame definition in the empirical analysis (see Section 4). Elements such as problem definition, causal

relations, moral evaluation, and solutions are operationalized in the analysis to identify frames on CC in the media and press releases.

In terms of framing research, Matthes (2010) distinguished between four fields: (a) strategic framing by communicators, (b) journalist framing, (c) frames in media content, and (d) audience framing. Strategic frames are used by communicators, such as political elites, lobbyists, and activists, to promote their perspectives on issues to the media and the public.

Concerning strategic framing in climate communication, a systematic literature review from Schlichting (2013) showed that the strategic frame of scientific uncertainty was promoted by the U.S. fossil fuel and coal industry in the early and mid-1990s. Over time, the frame shifted to respond to international climate politics. Hence, strategic frames from political actors have adjusted to more predominant trends or demands for global climate policy if they have seemed advantageous. Meanwhile, recent research on the strategic frames of environmental NGOs regarding CC has shown the increasing promotion of a social justice frame to expand their mobilization capacity and influence (Allan & Hadden, 2017).

In contrast, less research has been conducted on journalistic framing: "professional frames that guide informational processing, text production, and news selection by journalists" (Matthes, 2010, p. 127). An example of one of the few studies on journalistic framing is from Engesser and Brüggemann (2016) who investigated the cognitive frames of climate journalists in five countries. They showed that factors such as political alignment, professional aims, and specialization correlated with journalists' frames.

The third and most frequently researched framing is the analysis of frames in media content. However, this mass of research has led to "a proliferation of empirical findings and heterogeneity of conflicting conceptual and methodological ideas" (Matthes, 2010, p. 129). A similar situation was also identified in research on the media frames of CC (Schäfer & O'Neill, 2017).

The final field of framing research is the investigation of framing effects, which examines "the effect of frames on issue interpretations, cognitive complexity, public opinion and issue support and voter mobilization" (Lecheler & de Vreese, 2019, p. 33). An example of research on the framing effects of CC was a study by Schuldt and Roh (2014), showing that media frames on CC evoked different cognitive understandings between partisans of the Republican and Democratic Parties in the US.

Frame-building addresses the first three fields of the aforementioned systematization by investigating the continuous interaction process between journalists and nonmedia actors (Lecheler & de Vreese, 2019). Thus, the frame-building process is "the antecedents of news frames in the media to later delve into their effects" (Lecheler & de Vreese, 2019, p. 18). In other words, frame-building research attempts to explain the factors influencing media frames as dependent variables (Scheufele, 1999). Several systematic literature reviews have indicated scant research on frame-building (Borah, 2011) and environmental communication (Agin & Karlsson, 2021; Comfort & Park, 2018).

This paucity of research is not due to its low relevance but the high methodological effort required to investigate the complex frame-creation process. For example, interviews with journalists and observations in editorial offices must be

conducted. However, access to actors who produce strategic frames is often challenging (Lecheler & de Vreese, 2019; Schäfer & O'Neill, 2017).

Because frame-building deals with the relations and interactions between journalists and stakeholders, the present study investigates two different but interconnected subsystems: PR and journalism. The first deals with strategic frames created and promoted by stakeholders such as NGOs, political elites, and lobby groups. The latter concerns the journalistic frames journalists create, which may be influenced by the individual, organizational, and social factors surrounding them (Lecheler & de Vreese, 2019; Matthes, 2010). Scholars of journalism and PR research have widely agreed that both fields are parts or subsystems of larger social systems that guide how individuals (i.e., PR practitioners and journalists) act according to each role and function in modern society (see Blöbaum, 2016; Bucher, 2016; Dernbach, 2015; Jarren & Röttger, 2015; Kohring, 2016).

3.2 Models of the frame-building process

The two models serving as the framework for conducting empirical research in the present study are the hierarchy of influences (HI) model (Shoemaker & Reese, 1991, 2014) and the intereffication (IE) model (Bentele et al., 1998). The former, developed by Shoemaker and Reese (1991, 2014), has been widely used to explain the factors influencing journalists' news production at the micro, meso, and macro levels. The core of micro-level influence is journalists' characteristics, including demographic features, personal roles, and the perceived roles they adopt (Reese & Shoemaker, 2016). Meanwhile, the meso level includes newsroom routines, media organizations, and social institutions, "everything outside of" the media's organizational boundary, such as audiences, powerful sources, public relations, and technological forces (Reese & Shoemaker, 2016, p. 402).

The outermost part of the HI model is the social system: How society, power, ideology, and power relate to media, including political, economic, and cultural systems, as well as historical background within a national system. This factor considers media organizations and journalists as belonging to a larger social system. From this perspective, journalists struggle to resist the interests of media owners, elites, advertisers, or governments. Furthermore, these factors do not work in isolation but are interconnected and "constrained and enabled by the structures surrounding them" (Reese & Shoemaker, 2016, p. 397). Thus, Reese and Shoemaker (2016) argued that "evaluating the contribution of multiple levels simultaneously helps yield greater explanatory power" (p. 397).

Since its origin in the 1990s, the HI model has been tested in studies tracing the influences on journalists' work in news production. Several studies on CC communication have used this model to explain the influence of different levels in the news-production process related to CC. Research from Ejaz et al. (2021) and Figueroa (2020) concentrated on micro-level influence, while Takahashi et al. (2015) investigated macro-level influence. Meanwhile, Comfort (2019) showed that interactions between influence levels in CC could change via disruptive events. For example, Typhoon Haiyan in 2013, an extreme weather event, influenced how CC was treated in newsrooms in the Philippines. These studies focused on investigating

certain influences on journalists' work based on their opinions using interviews (Comfort, 2019; Ejaz et al., 2021; Figueroa, 2020) and media coverage as an output of climate reporting (Takahashi et al., 2015) without closely examining the sources of the information and news frames. Thus, the authors focused more or less on journalism without discussing other systems outside journalists' media organizations.

The present study contrasts these previous works by focusing on the sources of the frames. Despite a detailed explanation of each factor influencing journalists' work (Shoemaker & Reese, 1991, 2014), the model has limitations concerning the relationship structure between PR and journalists. Therefore, the current study includes the IE model – first proposed by Bentele et al. (1998) – because it describes the possible relationships between PR and journalism (Bentele & Nothhaft, 2008).

The term "intereffication" derives from the Latin words for "to mutually enable" (Bentele & Nothhaft, 2008). This model rejects the notion that PR power determines media content, as Baerns' (1979) determination model postulated. The core mechanism of the IE model is the dual system of PR and journalism, in which both engage in a process of communicative *induction* and *adaptation*. Induction refers to the "intended and directed communicative offers or stimuli, which result in resonances in the respective other system" (Bentele & Nothhaft, 2008, p. 36), while adaptations are the "communicative and organizational processes of adjustment" (Bentele & Nothhaft, 2008, p. 36). Nevertheless, the strengths of induction and adaptation are not balanced across the two poles of the PR and journalism subsystems.

The variations in power between PR organizations and media organizations for which journalists work highly influence the induction and adaptation processes. Several empirical studies based on the IE model have demonstrated this phenomenon. For example, under certain conditions, some PR officers with key institutions in Germany have significant power to induce their stories to journalists, just as certain conditions exist under which journalists from important media companies in Germany can determine when and where the interviews with their sources should occur and what is covered by the companies (Bentele & Nothhaft, 2008).

Similar to HI, which explains several levels of influence on journalists' work, Bentele (2008) argued that IE contains three levels of analysis embedded in PR theory: microanalysis, organizational analysis, and macroanalysis. The first level focuses on "the action taken by individual actors, their motives, objectives, and the rules that they use and create the effects of their action" (Bentele, 2008, p. 20), while the second involves the "communication process within the organization and between organizations and their social environments" (Bentele, 2008, p. 20). In an organizational context, individuals face certain expectations attributed to their organizational roles and positions. For example, a media relations manager is expected to perform a different role than a government relations manager. Moreover, the organizational level mediates the PR actions between the micro and macro levels in the system. Finally, the macroanalysis level approaches PR as a subsystem of a larger social functional system.

Among the critics of the IE model, some have argued that it tends to soften the dangerous power of influence practiced by PR toward journalism and that the idea

of PR and journalists "enabling each other" is misleading (Ruß-Mohl, 1999). In his critique, Ruß-Mohl (1999) suggested using the term "parasite" to describe this relationship because PR can only work when journalism exists, not vice versa. This critique may have originated in the PR research tradition that often focuses on applied research with a "how-to-do-it" formula directly applied to a real-world setting. Furthermore, the role and function of PR in society have often been less discussed and contextualized in the field of PR research (Dernbach, 1998; Nothhaft & Wehmeier, 2013).

Despite criticisms of IE by several communication scholars, the present study argues that the model is fit to be applied based on two arguments. First, in the context of Indonesia, the ideology or approach of development communication, which uses the media to propagate and support government programs (see Section 2), is widely accepted in the country and is part of its journalism culture (Hanitzsch, 2005, 2006). Thus, the normative expectation that journalists should produce news for the sake of the public (Ruß-Mohl, 1991, 1999), as expected or applied in Western developed societies, is mostly inapplicable in Indonesia due to its cultural and historical background. Thus, the IE model, which describes the direct influence of the PR subsystem on journalism, fits well in the Indonesian context.

The second argument for using the IE model in the present study is that it offers assumptions on how relations and influence between PR practitioners and journalists can occur in the frame-building process: PR practitioners try to induce their frames into journalists' systems, and journalists decide whether to adapt the frames promoted by stakeholders. Indeed, the same form of influence may also come from journalists toward PR. This assumption aligns with Entman's (2004) "cascading activation model," which describes how different actors, such as political elites, media organizations, and the public, can contribute to the flow of ideas or issues. Beyond these two arguments for using the IE model, the present study also explores how well the IE model, developed in industrialized Western societies, can explain the dynamic relationship between PR and journalism in a developing nation in the Global South.

The central function of the HI and IE models is to describe multiple forces influencing how PR officers and journalists work. The HI model calls such forces "factors," whereas the IE model uses the term "conditions." The present study uses both terms interchangeably to explain how individual actions – can, should, and will – interact with and be influenced by macro, meso, and macro (societal) systems (see Schimank, 1996). Both models, HI and EI, are points of departure for the research model (Figure 1). The model was created to delineate the possible interactions between journalists and communication practitioners of different groups and to understand how such interactions influence the construction of media frames on CC.

As Bentele and Nothhaft (2008) proposed, actors and journalists can induce and adapt their frames to each other. However, the induction and adaptation processes may not be balanced or neutral. The power of journalists and communication practitioners determines the kind of induction and adaptation between the poles of these two groups (Bentele & Nothhaft, 2008; Wozniak et al., 2016). Powerful communication practitioners are likelier to introduce their frames to the media than less powerful practitioners (Entman, 2004), which also applies to

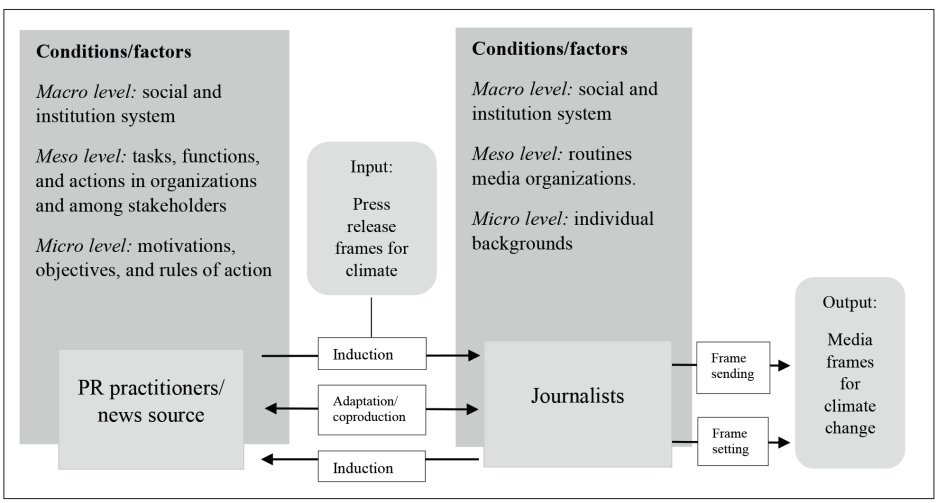
journalists. Indeed, those working for powerful or popular media companies are more likely to satisfy their informational needs than those working in small or less powerful media organizations (Bentele & Nothhaft, 2008; Hänggli, 2012; Reese & Shoemaker, 2016).

These conditions also apply to the political arena (Davis, 2009) and businesses (Lindén, 2013). In the field of climate communication, research from Lück et al. (2015), Wozniak et al. (2016), and Lück et al. (2018) employed the IE model as an underlying concept to investigate and explain the possible relations and actions between NGOs and journalists during international climate conferences.

The present study also considers the role of journalists' cognitive patterns at the micro level in framing CC (Brüggemann, 2014). Brüggemann (2014) argued that journalists' framing processes move along a continuum between frame-sending and frame-setting. Some journalists make their personal frames more dominant than those of actors (frame-setting), others blend personal and actors' frames in their articles, while still others prefer – or are obliged – to pass along actors' frames in their reporting without making any changes (frame-sending). As such, the question arises regarding the conditions under which journalists engage in frame-setting, frame-sending, or something in between.

A study by Engesser and Brüggemann (2016) of climate journalists in five countries confirmed that micro-level conditions (e.g., specialization, professional aims, and political alignment) correlated with journalists' cognitive CC frames. The journalists' expertise and attitudes toward scientific consent on CC also affected the interpretative frameworks they used in climate reporting (Brüggemann & Engesser, 2014). The present study builds on these findings and distinguishes between frame-sending and frame-setting in the research model (Figure 1).

Figure 1. Research model



3.3 State of research regarding frame-building related to climate change

Despite the increasing prevalence of climate communication research in the past decade, few studies have investigated how the frame-building process is handled by political actors (Agin & Karlsson, 2021; Schäfer & O'Neill, 2017). Most studies have used content analysis and investigated the actors most often cited by the media in the CC context (Comfort et al., 2020; Freeman, 2017; Takahashi, 2011; Takahashi et al., 2015; Takahashi & Meisner, 2013). In contrast, the process of how news sources attempt to pass their frames to the journalists who adapt them has been far less frequently studied. However, two studies of the three COP meetings in Cancun, Doha, and Warsaw between 2010 and 2012 (see Lück et al., 2015; Wozniak & Wessler, 2016) are notable exceptions.

The first study (Lück et al., 2015) investigated the network of coproduction processes between the communication practitioners of environmental NGOs and journalists covering the three COPs. The authors' understanding of coproduction between environmental NGOs and journalists during the COP meeting was based on the IE model, which postulates reciprocal actions between PR practitioners and journalists (induction and adaptation). By conducting multiple interviews with journalists and NGO communication practitioners, the study identified the circumstances in which the different networks of coproduction were likely to appear in the context of climate reporting. The results showed that the specific conditions of both poles influenced coproduction between NGOs and journalists. While journalists' conditions were shaped by the type of media outlet and beat, NGOs' conditions were shaped by the NGOs' preferences for either pursuing a lobbying strategy or mobilizing support.

To investigate the frame-building process during the COP in Doha in 2012 and Warsaw in 2013, Wozniak et al. (2016) conducted a multi-process framing study of climate communication. They used visual content analysis and interviews with journalists, government spokespersons, and NGO representatives to discover which actors could place their preferred visual frames in the media. Using content analysis data from news coverage of the events from five democratic countries and 44 on-site interviews with actors from different groups, they found that journalists favored NGOs' visual frames because the latter offered powerful pictures of symbolic actions. Based on the interviews, the authors could explain how the induction process involving the visual frames of PR practitioners worked, thereby clarifying the adaptation process employed by journalists.

Beyond these two exceptional studies, a study by Lück et al. (2018) examined the possible networks of climate journalists during COPs. Based on observations, interviews, and surveys with government delegations, NGOs, and journalists during the COPs, the study found journalists' working experiences and the focus of coverage to be the two most important factors for determining their relations with different actors in the deliberative system. Notably, despite the global setting of the COPs, journalists tended to maintain relationships with only delegations from their home countries (Lück et al., 2018). The study also concluded that, during the COPs, sense-making efforts regarding the CC issue were undertaken by journalists and politicians, experts, and pressure groups, a likely explanation because single actors

could not develop a full understanding of climate issues, so the production of appropriate knowledge of CC had to occur in a system.

The extensive longitudinal data collected by Lück et al. (2015), Wozniak et al. (2016), and Lück et al. (2018) went a long way toward explaining the relationship between news sources and climate journalists during international climate conferences. Nonetheless, further research should be conducted to understand whether this coproduction and deliberative process also occurs in non-COP settings' daily news-production process since the relationship between news sources and journalists can become blurred. For example, many NGOs prefer to hire experienced journalists for their communication teams to better disseminate their messages and frames to wider audiences (Wright, 2019). Because news organizations must optimize labor and financial resources in the news-production process, the information and frames provided by NGOs or government actors can be perceived as threatening to journalists' independence. This threat is particularly true for climate journalists, who must deal with scientific information on CC that is frequently quite complicated. Empirical research has shown that interpersonal relationships between climate journalists and their sources highly influence journalists' preferences in selecting sources for climate reporting, for example, in China (Pan et al., 2020), Japan (Konishi, 2017), and Ireland (Robbins, 2020).

Besides the dominant roles of government and NGOs, studies have shown that Western news agencies play a significant role in news production related to CC (Antilla, 2005; Nossek & Kunelius, 2012). This finding is particularly true in countries of the Global South, where many media organizations and editors consider CC an international news story rather than a local issue, as is the case in India (Mittal, 2012), Argentina (Mercado-Sáez & Koop, 2018), Mexico (Chavez et al., 2018), and Peru (Takahashi & Meisner, 2013). A content analysis of Peruvian media coverage of CC indicated that articles by international news agencies included fewer adaptation subframes than those written by in-house journalists (Takahashi & Meisner, 2013). In Indonesia, a study by Painter (2016) of the publication of the Fifth IPCC Assessment Report (AR5) in 2014 showed that articles from the international newswire dominated Indonesia's news coverage of CC. A recent study of the media coverage of CC in Indonesia also found significant differences between the CC frames presented in articles by international news sources and those written by in-house journalists (Rochyadi-Reetz & Wolling, 2022).

Based on the above rationale, the current study focuses on the media coverage of CC by in-house journalists by examining the influence of national actors or stakeholders in Indonesia. Thus, the following research questions are posed:

(RQ1) What CC-related frames are used by in-house journalists in the Indonesian media?

(RQ2) What CC-related frames are used by political actors in Indonesia?

The first research question is answered using a quantitative content analysis of CC media coverage by eight print and online media outlets in Indonesia. A similar approach is employed to analyze the press releases of political actors in Indonesia to answer the second research question.

The present study also considers the following questions to explain the process of frame-building related to CC:

(RQ3) What are the similarities and differences between the frames produced by in-house journalists and political actors?
(RQ4) How can the similarities and differences between the media frames and frames from political actors be explained?

The third question is answered by comparing the frame analysis from media coverage with that from the press releases of political actors. In addition, interviews with journalists and political actors, such as government PR officers, government experts, and environmental NGO campaigners, are conducted to better understand the frame-building process addressed in RQ4. In addition to political actors, Indonesian climate scientists are also interviewed because previous research on climate communication in Indonesia has shown that scientists are among the most cited actors in the media (Rochyadi-Reetz & Wolling, 2022).

4. Journalists' and political actors' climate change frames

The present study conducted a quantitative content analysis to answer RQ1 and RQ2. The inductive manual reductionist approach developed by Matthes and Kohring (2008) was employed to structure the complexity of CC. Moreover, cluster analysis was used to identify complex frames involving multiple elements. Entman et al. (2009) considered this research approach appropriate for obtaining reliable and valid results and suitable for medium- and large-scale studies.

4.1 Variables, codebook development, and intercoder reliability test

This study's frame element operationalization followed Entman's (1993) definition and measured four frame elements: the problem definition, causal interpretation, moral evaluation, and treatment recommendation. The first step in developing the codebook was to create a list of media frames on CC identified in previous studies and classify the frames into elements and dimensions. For example, research from Takahashi and Meisner (2013) on media frames on CC in Peru found that the media strongly presented a frame on the negative effects of CC structured into several subframes, including ecological, human, and economic effects. The list of studies used to develop the codebook appears in the footnote to Table 1. These findings were used to operationalize the various problem frame elements referring to the economic, ecological, and social dimensions. This step also discovered that CC could be framed as a problem or as creating benefits and providing opportunities (Yun et al., 2014). Thus, these benefits and opportunities were included as the fifth frame element in the operationalization of variables in the codebook. Moreover, content dimensions must be defined in addition to the frame elements when measuring frames. Hence, based on media frame research by Painter (2016), Wiratmojo and Samorir (2012), and O'Neill et al. (2015), the present study employed five content dimensions: economic, political, technological, ecological, and social. Table 1 details the frame operationalization used in the codebook. The

codebook (see Rochyadi-Reetz, 2024) was used to analyze media articles and press releases from political actors.

The author and an Indonesian media and communication science graduate student developed the codebook and coded the articles. To gain insights into the development of the codebook, each coder carefully read 15 articles on CC and included examples of phrases from them. The coders participated in intensive coder training before coding the articles and performing a reliability test. During the training, the coders coded 20 articles, discussed every disagreement, and adjusted the codebook whenever necessary by expanding the descriptions and adding examples to the categories. A reliability test with 60 articles was conducted using the percentage of agreement and Gwet's AC index, which was applied because it best fit the binary scale used in content analysis (see Feinstein & Cicchetti, 1990; Gwet, 2008). Intercoder reliability for the percentage of agreement for all frame elements was between 93.3%–100%, while Gwet's AC index score ranged from 0.78–1.

Table 1. Codebook structure and operationalization of Frame elements

Coding categories			**Gwet's AC**
Media	Print, online		1
Authorship	In-house, international		0.89
Source cited	National	Government, NGOs, scientists, other	0.92–1
	International	Government, NGOs, scientists, other	0.96–1
Operationalization of frame elements[b]			
Problem	Economy	Uncertainty and risk caused by CC related to the production, distribution, and consumption of products and services	1
	Politics	Conflicts and controversial processes of decision-making related to the creation of regulations, laws, and agreements in the context of CC	1
	Ecology	Negative impact of the world's changing temperature on living organisms and abiotic components (glaciers, sea, water, etc.)	0.87
	Social	Negative impact of CC on humans' quality of life	0.96
	Science	Scientific controversies that deny the existence of anthropogenic CC	0.98
Economic benefits of climate change		Positive effects caused by CC related to economic processes, such as drilling for oil or gas in the Arctic being facilitated by CC	0.99

Benefits of climate action		Economy	Positive effects caused by climate action, such as green jobs	0.95
		Science	Increasing knowledge and boosting innovation by conducting research	_a
		Social	Positive effects of climate action on humans	_a
Causes of climate change	Economy	Industry	Greenhouse gases from factories or manufacturing activities and product transportation	0.91
		Deforestation	Greenhouse gases from human-caused deforestation for plantations, farming, and resettlement	0.97
		Agriculture	Greenhouse gases from agricultural activities to produce food	0.98
	Politics		Regulations that cause existing or increased greenhouse gas levels	0.98
	Social		Individual activities and lifestyles that cause increased greenhouse gas levels	0.95
Treatment or solution	Mitigation economy	Financial	Efforts or claims to accelerate or initiate green programs and agreements through the transfer of financial resources	0.88
		Energy efficiency	Reducing emissions and increasing energy efficiency in the production process	0.96
		Renew. energy	Reducing the use of fossil energy and increasing the use of renewable energy	0.88
		Nuclear energy	Building or prolonging the use of nuclear power plants because nuclear energy is "cleaner" and cheaper than fossil energy	_a
	Mitigation politics	International treaty	Climate treaties/agreements in the context of developing and developed nations to mitigate CC	0.90
		Forestry	Regulations to reduce deforestation	0.89
		Policy	Climate policy at the local, regional, and national levels	0.87
	Mitigation science		Technical innovation and technology transfer to reduce CO_2 emissions	0.98
	Mitigation social		Green campaigning and celebrity activities to increase CC awareness	0.78
	Adaptation	Economy	Financial aid to support adaptation strategies, insurance, and management related to CC	0.98
		Politics	Regulations, plans, and strategies to, for example, replan cities and build dams	0.93
		Science	Examples: new planting systems for farmers to adapt to extreme weather, geoengineering	0.96
		Social	Examples: migration, changing patterns of food consumption	0.96

Moral evaluation	Blamed	Actors blamed for causing CC: government, industry, NGOs, society, developed countries, developing countries, and scientists	0.98
	Praised	Actors praised for acting against CC: government, industry, NGOs, society, developed countries, developing countries, and scientists	0.94

Notes. a. The coefficient could not be calculated since neither coder used the category "1." b. Operationalization of frame elements and dimensions was based on research from Agwu and Amu (2013), Arlt and Wolling (2012), Billett (2010), Han et al. (2017), Lück et al. (2016), Nwabueze and Egbra (2016), O'Neill et al. (2015), Pan et al. (2019), Shehata and Hopmann (2012), Takahashi and Meisner (2013), Trumbo and Craig (1996), Tynkkynen (2010), and Wiratmojo and Samorir (2012).

4.2 Sample selection

The studies on CC in Indonesia mentioned in Section 2 analyzed only printed legacy newspapers (Cronin & Santoso, 2010; Irwansyah, 2016; Nassanga et al., 2016; Painter, 2016; Sarwono, 2010; Sarwono et al., 2012; Wahyuni, 2017; Wiratmojo & Samorir, 2012). However, digital media consumption in Indonesia is rapidly increasing, and the readership of new digital-born news media has surpassed that of print media (Eriyanto & Mutmainnah, 2020). Therefore, the present study included print and online versions of legacy media and popular digital-born news portals. Unlike media outlets in Western developed nations, which often have a political inclination (left or right), Indonesian media have no clear political affiliation (Rochyadi-Reetz & Löffelholz, 2019). Three print newspapers included in the current study, Kompas, Republika, and Koran Tempo, were legacy newspapers well known for their high-quality content. The present study also included the online versions of the three print newspapers (i.e., Kompas.com, Republika.co.id, and Tempo.co), which were as popular as the print versions. For digital-born media, the current study included detik.com and cnnIndonesia.com, which were affiliated with CNN, an influential international cable news network. Both websites are among the most popular online news media in Indonesia.

The analyzed articles were collected from the *Binokular* archive, which contains data on newspaper articles from hundreds of Indonesian media outlets. The keywords *perubahan iklim* (CC) and *pemanasan global* (global warming) were used to identify the relevant items. The studied period began on November 1, 2017, 1 month before COP 23 in Bonn, Germany, and ended on December 31, 2018, 2 weeks after the completion of COP 24 in Katowice, Poland. Only two duplicate articles from *Koran Tempo* were found on *Tempo.co* and subsequently excluded from the sample. However, no duplicates were found for the other online editions.

The selection of media articles was conducted as follows. Initially, 100 articles from each media outlet that published more than 100 on the topic in the specified period were randomly selected using a random number generator. The reason for selecting 100 articles from each media sample was based on time and economic constraints in conducting the study. However, at the end of the procedure, a full survey was realized for 50 percent of the media outlets, and for the remaining

outlets, approximately 50 percent of the available articles were analyzed. The articles were then carefully read to identify whether they contained *at least one frame element*. Articles without elements were excluded from the analysis and replaced with other randomly selected articles. This procedure was repeated until a sample of 100 articles was obtained. In the case of media outlets that had published fewer than 100 articles during this period, all existing articles were checked.

As shown in Table 2, 1,016 articles were manually coded in this process, and almost 40 percent mentioned only one aspect (frame element) of CC without any further contextualization concerning problem, benefit, cause, solution, or moral evaluation. Based on this result, the present study included all articles mentioning at least one frame element in the analysis, assuming that, even if journalists only mentioned one frame element on CC, it should be considered a most important perspective on how to think about the issue.

Because the present study was geared to explain the frame-building process related to CC by national actors, all articles from international news wires and organizations were excluded. Of the 629 coded articles, 61 percent (383) were classified as written by in-house journalists and used for further analysis (see Table 2). Of these 383 articles, 30 percent mentioned only one frame element, while the rest mentioned two or more.

Table 2. Newspapers included in the sample

Newspapers	Total no. of articles	Articles checked	Articles coded	Authored by in-house journalists (% of coded articles)
Kompas	461	152	100	92 (92%)
Kompas.com	331	158	100	34 (34%)
Koran Tempo	69	69	37	25 (68%)
Tempo.co	115	115	79	42 (53%)
Republika	146	146	68	49 (72%)
Republika.co.id	232	129	100	53 (53%)
Detik.com	233	176	100	63 (63%)
CNNIndonesia.com	71	71	45	25 (56%)
Total	1,658	1,016	629	383 (61%)

During the coding process, the present study found that the government (28.2%), scientists (12.0%), and NGOs (7.8%) were the three most cited actors in climate reporting. Both coders identified the actors' names and institutions cited in the articles to trace the relevant actors for further analysis. In this step, the most cited actors from the government and NGOs were identified: the Ministry of Environment and Forestry (MEF) and the Ministry of Energy and Natural Resources (MENR), as well as Greenpeace Indonesia and Walhi (Friends of the Earth Indonesia). The press releases of these four agents were collected from their websites for the same period as the climate reporting. The author read all press releases from

each political actor and included those mentioning at least one CC-related frame element. The two coders then coded the sample using a codebook nearly identical to that applied to the news articles. Table 3 presents the total number of press releases coded for each institution.

Table 3. Political actors and the number of associated press releases

Political actor	Press releases coded
Ministry of Environment and Forestry	93
Ministry of Energy and Natural Resources	17
Greenpeace Indonesia	17
Walhi (Friends of the Earth Indonesia)	5
Total	132

4.3 Journalist, government, and nongovernmental institution frames related to climate change

Descriptive results for the frequency of frame elements were compiled before identifying the frames related to CC employed by journalists and political actors (see Table 4). The analysis of frame elements demonstrated that press releases from the government frequently mentioned the frame elements of "mitigation solution" and "praising the government." Meanwhile, NGOs frequently mentioned the frame elements of "causal," "solution," and "blaming actors" regarding the causes and failures of CC mitigation. Unlike both political actors, Indonesian journalists frequently mentioned the frame elements of "problem," "mitigation solution," and "adaptation solution." Finally, only a few articles mentioned the frame elements of "praising" or "blaming" related to certain actors causing CC or not doing enough to mitigate it.

Table 4. Frame elements related to climate change in government/nongovernmental institution press releases and newspaper articles

Frame element (variable)	Press releases by government Percentage (*n*), *N* = 110	Press releases by NGOs Percentage (*n*), *N* = 22	Media articles Percentage (*n*), *N* = 383
A. Problem			
1. Ecological	7.3 (8)	4.5 (1)	32.1 (123)
2. Social	3.6 (4)	-	13.1 (50)
3. Economic	0.9 (1)	4.5 (1)	14.6 (56)
4. Political	-	-	4.2 (16)
5. Scientific	-	-	3.1 (12)

B. Benefit of climate action			
Economic	-	9.1 (2)	2.1 (8)
C. Causal explanation			
1. Manufacturing and industry	2.7 (3)	72.7 (16)	9.1 (35)
2. Social	3.6 (4)	4.5 (1)	9.7 (37)
3. Deforestation	3.6 (4)	45.5 (10)	7.0 (27)
4. Agriculture	-	40.9 (9)	3.1 (12)
D. Solution by mitigation			
1. Climate policy	40.9 (45)	31.8 (7)	19.3 (74)
2. Social change	42.7 (47)	4.5 (1)	10.4 (40)
3. Forestry and replanting	38.9 (42)	18.2 (4)	12.8 (49)
4. Renewable energy	22.7 (25)	50 (11)	14.6 (56)
5. Treaties and cooperation	29.1 (32)	-	7.8 (30)
6. Financial support for mitigation	21.8 (24)	9.1 (2)	13.3 (51)
7. Energy efficiency	21.8 (24)	9.1 (2)	13.3 (51)
8. Scientific solution	12.7 (14)		6.3 (23)
E. Solution by adaptation			
1. Scientific solution	2.7 (3)	-	8.6 (33)
2. Financial support to adapt to CC	2.7 (3)	-	1.3 (5)
3. Social solution	1.8 (2)	-	1.6 (5)
4. Policy to adapt to CC	0.9 (1)	-	6.5 (25)
F. Actors blamed (moral evaluation)			
1. Government	-	36.4 (1)	1.8 (7)
2. Industry	-	59.1 (13)	0.8 (3)
3. Developed countries	-	9.1 (2)	0.8 (1)
4. Developing countries	-	4.5 (1)	0.3 (1)
5. Society	-	-	1.6 (6)
6. Individuals	-	-	0.3 (1)
7. NGOs	-	-	0.3 (1)
8. Politicians/political parties	-	-	0.3 (1)
G. Actors praised (moral evaluation)			
1. Government	25.5 (28)		2.1 (8)
2. Industry	1.8 (2)	4.5 (1)	0.3 (1)
3. Developed countries	0.8 (1)	-	0.3 (1)
4. Society	-	-	1.6 (2)
5. NGOs	-	-	0.3 (1)

Note. Scale for all frame elements: 0 = not mentioned, 1 = mentioned.

After identifying the frame elements, cluster analysis was conducted to detect the patterns of frame elements that could be interpreted as frames. The data were prepared for the analysis as follows. First, frame elements with low appearance frequency (< 5%) in press releases and media articles were excluded from the analysis because they would not have notably contributed to cluster formation (Matthes & Kohring, 2008). This elimination was done for all frame elements except "moral evaluation." In this case, all elements were merged into a new index. Second, four indices were built by combining frame elements referring to similar aspects: "forest transformation and industry as causes" (Causes 1, 2, and 3 in Table 4), "mitigation by regulation and treaty" (Solutions by Mitigation 1 and 5 in Table 4), "mitigation by the energy sector and science" (Solutions by Mitigation 4, 7, and 8 in Table 4), and "adaptation by policies and scientific solution" (Solution by Adaptation 1 and 4 in Table 4). The fifth and sixth indices, "praised" and "blamed," summarize all actors who were praised or blamed. Third, all indices and frame elements were examined in R software (Version 4.0.2) using cluster analysis with a hierarchical approach based on Ward's method and Euclidean distance. Articles in the dataset were sorted based on publication date.

By applying the elbow criterion, five clusters (frames) were identified in the journalists' articles related to CC (Table 5). The first frame, "ecological problems," was by far used the most often by in-house journalists in Indonesia, with 48 percent of articles employing this frame. Articles in this cluster feature elements related to ecological problems, reporting a negative impact of CC on the natural environment and animals while rarely mentioning the causes of CC or mitigation solutions. For example, an article published by Kompas.com on December 16, 2017, entitled "Survival Story of Sumatera's Rhino in the Last 10,000 Years" reported on scientific research regarding the impact of CC on Sumatera's rhino but did not explain the reasons behind CC or provide possible solutions.

The second frame, "mitigation by policy and forestry," focused on mitigation by regulation, international treaty, or forestry project/reforestation. For example, a Detik.com article from April 4, 2018, entitled "Mangrove Planting in the Bay of Jakarta," described a mangrove planting action in the bay of Jakarta conducted by the local community and sponsored by a state-owned coal energy company as part of its social responsibility program. It quoted a government statement that mangrove planting aimed to mitigate CC and protect the area from rising sea levels and floods. However, it did not explain the causes of CC.

The third frame was named "mitigation by technique and finance" because the elements highlighted in the associated articles addressed mitigation solutions by the energy sector, scientific innovations, and financial aid to support climate mitigation programs. For example, a Republica.co article entitled "Indonesia Attending One Planet Summit," published on December 4, 2017, described Indonesia's government agenda during the One Planet Summit in Paris in discussing financial packages from donor countries to boost the low-carbon economy and technology in Indonesia to mitigate CC. This article provided no background information on the causes or problems related to CC.

Table 5. Media frames related to climate change

Frame element	Mean value					F-score	*p*
	Frame 1: Ecological problems	Frame 2: Mitigation by policy and forestry	Frame 3: Mitigation by technique and finance	Frame 4: Adaptation through science	Frame 5: Causes of CC		
n (% of sample)	183 (48%)	57 (15%)	56 (15%)	44 (11%)	43 (11%)		
Problem: Ecology (0–1)	**0.49**	0.00	0.20	**0.34**	0.16	17.32	***
Problem: Social (0–1)	0.19	0.00	0.12	0.09	0.07	4.47	**
Problem: Economy (0–1)	0.16	0.00	0.11	**0.43**	0.00	12.47	***
Economic benefits of climate action (0–1)	0.04	0.02	0.00	0.00	0.00	1.4	n.s.
Industry and forest transformation as cause (scale 0–3)	0.03	0.09	0.17	0.05	**1.18**	83.7	***
Social causes (0–1)	0.03	0.02	0.07	0.04	**0.55**	42.75	***
Mitigation by regulation and treaty (scale 0–2)	0.1	**1.14**	0.17	0.13	0.11	116.4	***
Mitigation by energy sector and science (scale 0–2)	0.09	0.3	**1.36**	0.15	0.3	114	***
Mitigation: Financial (0–1)	0.02	0.14	**0.69**	0.02	0.00	90.15	***
Mitigation: Social (0–1)	**0.17**	0.05	0.03	0.02	0.07	3.88	**
Mitigation: Forestry (0–1)	0.10	**0.27**	0.05	0.04	0.21	4.78	***
Policies and scientific solutions to adapt to CC (scale 0–2)	0.02	0.00	0.02	**1.18**	0.05	403.1	***
Blaming government, industry, and developed countries (scale 0–3)	0.02	0.07	0.03	0.02	0.05	0.9	n.s.
Praising government (0–1)	0.03	0.00	0.09	0.00	0.00	0.9	n.s.

Unlike the other frames identified, the fourth, "adaptation through science," focused on adaptation solutions for addressing CC in Indonesia. For example, a *Kompas* newspaper article from December 23, 2017, entitled "Developing Nutmeg Cluster in Maluku," reported on the declining nutmeg production in Maluku Island due to CC and other factors threatening the livelihoods of local farmers. An agriculture scientist cited in the article advocates for adapting farmers' planting methods to maintain levels of nutmeg harvest in the future.

Table 6. Cross-tabulation of frames and cited sources

	Frames				
	Frame 1: Ecological problems (%)	Frame 2: Mitigation by policy and forestry (%)	Frame 3: Mitigation by technique and finance (%)	Frame 4: Adaptation through science (%)	Frame 5: Causes of CC (%)
Source					
Government (n = 109)	43.5	25	15	10	6.5
Scientists (n = 46)	50	4	7	26	13
NGOs (n = 30)	50	17	10	7	13
Mixed (n = 38)	29	18	24	16	13
Others (n = 589)	59	12.5	14	4	12.5
None (n = 102)	52	8	16	11	13
	(χ^2 = 42,699, df = 20, p = .002)				
Media type					
Online (n = 216)	57	15	14	6	8
Print (n = 167)	36	14	16	19	15
	(χ^2 = 27,812, df = 4, p = .000)				

The final frame emerging from the empirical data, "causes of climate change," emphasized daily lifestyle and land use transformation activities as the causes of CC. For example, a *Kompas* newspaper article from June 27, 2018, entitled "Challenge in a Blue Sky," reported on a climate festival event in Jakarta organized by the MEF. The article briefly described the event and cited statements by the MEF on the ecological impact of CC and the government's mitigation program. In addition, the article cited a Greenpeace Indonesia statement explaining that Indonesia's use of forest land and fossil energy were among the most significant factors contributing to the high emission levels and urging the government to engage in serious regulation and shift away from the use of fossil fuels and toward renewable energy.

A crosstab analysis of the frames and actors cited in the articles in Table 6 showed that in the articles with the ecological problems frame, NGOs, scientists, and "other actors" were cited more often than average. Meanwhile, the government and NGOs used the frame on mitigation policy and forestry second most often, while scientists used the frame on adaptation through science second most often. The analysis also showed that the government was rarely cited in articles highlighting or explaining the causes of CC, further revealing a significant difference in the frames appearing in print and online media. While over half of the articles from online media employed the ecological problem frame, print media employed more diverse frames when covering CC. Although the ecological problem frame was most predominant, the other four frames appeared in more than 10 percent of articles, and the adaptation through science frame appeared in nearly 20 percent.

A similar approach to identifying frames was applied when analyzing the dataset of press releases by the government and NGOs. By applying the elbow criterion, three clusters (frames) were identified in the press release dataset. The mean values of all included variables and indices were calculated, as shown in Table 7.

The following three frames were identified in the press releases of the government and NGOs: (1) "mitigation by social change and forestry," (2) "mitigation by policy, energy, and financial sectors," and (3) "behind the climate crisis." Press releases with the first frame emphasized CC mitigation efforts via regulation through forestry programs and social and community initiatives to reduce carbon emissions. The second frame identified in the press releases highlighted the importance of governmental policy, international treaties, and the energy sector in mitigating CC. Government efforts to mitigate CC were praised relatively often in the articles with this frame. The third frame underscored the industry and agriculture sectors as the major drivers of CC.

Table 7 provides the mean values of the variables used in the cluster analysis, while Table 8 contains a crosstab analysis of the sources and frames. The results showed that the government strongly promoted mitigation by social change and forestry, which seldom appeared in NGO press releases. The mitigation by policy, energy, and financial sectors frame was used similarly by the government and NGOs, while the opposite held for the climate crisis frame, which was strongly promoted by NGOs but rarely by the government.

Table 7. Political actors' frames related to climate change

Frame element	Mean value			F-score	*P*
	Frame 1: Mitigation by social change and forestry	Frame 2: Mitigation by policy, energy, and financial sectors	Frame 3: Behind the climate crisis		
n (% of sample)	86 (65%)	28 (21%)	18 (14%)		
Problem: Ecology (0–1)	0.05	0.11	0.05	0.41	n.s
Problem: Social (0–1)	0.02	0.07	0.00	1.15	n.s.
Problem: Economy (0–1)	0.01	0.00	0.05	1.23	n.s.
Economic benefits of climate action (0–1)	0.10	0.11	0.05	0.21	n.s.
Industry and forest transformation as causes (scale 0–3)	0.03	0.03	**2.11**	245	***
Social causes (0–1)	0.03	0.00	0.11	1.90	n.s.
Mitigation by regulation and treaties (scale 0–2)	0.32	**1.46**	0.39	11.49	***
Mitigation by energy sector and science (scale 0–2)	0.32	**1.46**	0.39	53.14	***
Mitigation financial (0–1)	0.00	0.9	0.00	660.6	***
Mitigation social (0–1)	**0.48**	0.28	0.00	8.17	***
Mitigation forestry (0–1)	**0.37**	0.36	0.22	0.73	n.s.
Adaptation by policies and scientific solutions (scale 0–2)	0.02	0.07	0.00	1.15	n.s.
Blaming government, industry, and developed countries (scale 0–3)	0.02	0.03	**0.78**	93.95	***
Praising government (0–1)	**0.26**	**0.28**	0.05	93.95	***

Table 8. Cross-tabulation of sources and frames

Sources	Frames		
	Frame 1: Mitigation by social change and forestry (%)	Frame 2: Mitigation by policy, energy, and financial sectors (%)	Frame 3: Behind the climate crisis (%)
Government (n = 110)	75	23	2
NGOs (n = 22)	9	18	73
	(χ^2 = 78,368, df = 2, p = .000)		

4.4 Frame similarities and differences

Comparing the CC-related frames used by the media (Table 5) with those employed by the government and NGOs (Table 7), journalists rarely used the frames promoted by either the government or NGOs, although some were similar. Frames 2 and 3, which mainly presented solutions for mitigating CC, were similar to Frames 1 and 2, which were promoted by the government. Frame 5 of the media, explaining the causes of CC, was quite similar to the climate crisis frame deployed by NGOs. Nevertheless, in their reporting, the journalists did not praise the government for its mitigation policy because it did so in its press releases. In addition, similarities existed between the causes of the CC frame presented by journalists and the reasons behind the climate crisis frame promoted by NGOs. However, unlike the frame employed by NGOs, journalists rarely blamed the government for not doing enough to mitigate CC. This result confirmed Hanitzsch's (2005) description of Indonesian journalists as "timid watchdogs." Nevertheless, journalists did not praise the government's efforts to combat CC, indicating that Indonesian journalists could have preferred to adopt a neutral position by rarely blaming or praising political actors for CC.

Despite the similarities between journalists' frames and those promoted by political actors, most media articles employed frames that differed from those promoted by the government and NGOs: the adaptation through science and the ecological problem frames, which, in total, appeared in 59 percent of articles. Table 6 shows that the government, scientists, and NGOs were mostly featured in articles based on the ecological problem frame. Although this frame did not appear in the press releases, it could be attributed to and connected with political actors by the media. Meanwhile, the adaptation through science frame was promoted primarily by scientists, with the most often cited actors in articles describing or suggesting actions for adapting to CC based on scientific solutions.

In addition to the similarities and differences in sources and frames, Table 6 reveals the frame-related differences and similarities between online and print

media. In both types of media, the ecological problem frame was predominant. However, online media (57%) used it far more often than print media (36%). Frames 2 and 3 were employed similarly by both media types. However, the print media used the frames of adaptation through science and the causes of CC more than twice as often as the online media.

4.5 Discussion

Unsurprisingly, the content analysis of CC from eight Indonesian media outlets showed that ecological problems caused by CC dominated its coverage. Indeed, similar frames have appeared in – or even have dominated – media coverage in many countries, regardless of development status, including the US and UK (O'Neill et al., 2015), Germany (Schäfer, 2016), Nigeria (Nwabueze & Egbra, 2016), and Peru (Takahashi & Meisner, 2013). Therefore, the negative impact of CC, which appears persistently across time and cultural contexts (Lecheler & de Vreese, 2019, p. 4), may be a generic worldwide frame for CC. The dramatic ecological impacts of CC described in scientific reports have often been employed by the media to generate public and political attention to the topic (Ladle et al., 2013), even if it may not be the best way to stimulate public engagement and climate action (O'Neill & Nicholson-Cole, 2009).

The solution for the problem of CC most often mentioned in Indonesia was to mitigate CC by focusing on the government's strategy to reduce CO_2 emissions. Meanwhile, the solution of adapting to CC locally was rarely presented despite the urgent need for Indonesians to do so. Indonesians emit less CO_2 per capita than developed Western societies but are among the most affected by extreme weather events (Eckstein et al., 2021; Global Carbon Atlas, 2020). Because frames provide the central organizing ideas for making sense of specific issues (Gamson & Modigliani, 1989), media frames on CC in Indonesia have almost completely failed to offer frames providing local solutions for adapting to CC.

Despite the high appearance of the ecological problem frame, the content analysis of press releases from political actors showed that this frame was promoted by neither the government nor environmental NGOs in Indonesia. The Indonesian government promoted frames on how to mitigate CC through several governmental policies regarding energy transition, financial sectors, and forestry, as well as by promoting social transformation. Meanwhile, environmental NGOs promoted a frame on what was causing CC, who was responsible for it, and who was in charge of creating solutions. Hence, Indonesian journalists seemed to have a distinct pattern of framing CC as an ecological problem that was not from the government or environmental NGOs. Instead, this frame could plausibly come from a journalist's personal or daily experience. Because all the interviewed journalists lived in Jakarta, a coastal area with millions of inhabitants, issues of the rising sea level and floods caused by heavy rainfall were often discussed related to CC.

Based on a comparison between media and governmental frames on CC, the present study showed that Indonesian media adapted CC frames promoted by the government to some degree. Another indicator of frame adaptation by journalists was the dominance of governmental officials as sources of information cited in the

media. Interestingly, as the second most cited actors in the analyzed articles, scientists were also an important source for journalists who reported on climate events. This pattern confirmed international findings on trends in climate reporting, demonstrating that governments and scientists were the two most important sources for journalists (Comfort et al., 2020; Takahashi & Tandoc, 2013).

Meanwhile, a comparison between frames promoted by NGOs and those used by the media shows that NGOs were less successful than the government or scientists in promoting their agendas in the media. Accordingly, a need arising from the content analysis was to explain how and why some frames promoted by the actors were received and selected by journalists to create their articles on CC while others were not. Therefore, the present study specified RQ4 and addressed the following questions:

> *(RQ4.1) What strategies are used by government and NGO PR practitioners and scientists to promote CC frames to the media?*
> *(RQ4.2) What are the most important factors influencing journalists in writing articles on CC and selecting and applying specific frames?*

The following section elucidates this process by considering the material gathered from interviews with PR and campaign managers of the Indonesian government, NGOs, palm oil lobby organizations, and scientists, as well as with the journalists who wrote the articles analyzed in the content analysis.

5. Explaining the process of frame-building related to climate change

The content analysis in the previous section shows the similarities and differences between the CC-related frames used by journalists and those promoted by the government and NGOs. This section analyzes interviews with journalists, government PR officers, campaigners from environmental NGOs, and scientists in Indonesia to explain the frame-building process. This qualitative approach was based on the process-tracing approach of George and Bennett (2005), who stated that "the process-tracing method attempts to identify the intervening causal process – the causal chain or causal mechanism – between the independent variable (or variables) and the outcome of the dependent variable" (p. 206). Other researchers have used this approach to describe the relationship between journalists and their sources in news production related to CC (Lück et al., 2015, 2018).

5.1 Selection of the interviewees

Semistructured interviews were conducted with journalists, PR managers, government experts, and scientists to examine the interactions and relations between journalists, scientists, and stakeholders in constructing CC-related frames. Interviewee selection for journalists was implemented in two waves. In the first wave, the interviewees were identified based on the content analysis results. The author created a list of the journalists mentioned in the bylines of the coded articles and contacted them, asking for an interview. Thirteen journalists agreed to participate.

Table 9. Interviewee list

Journalists							
Code	**Gender**	**Edu.**	**Status and platform**	**Desk**	**Working experience***	**Recommend by**	**Writing/ knowledge of CC**
J1	Female	MA	Full-time, print	Env.	High	NGO	Often/ high
J2	Male	BA	Full-time, print	Env.	High	NGO	Often/ high
J3	Male	BA	Full-time, print	Env. and disaster	High	-	Often/ high
J4	Male	MA	Full-time, online	Science	Medium	-	Often/ high
J5	Female	BA	Freelance, online	Science	Low	-	Often/ medium
J6	Male	BA	Full-time, print and online	Env.	High	-	Often/ high
J7	Male	BA	Full-time, print and online	Science	Medium	-	Medium/ high
J8	Male	BA	Full-time, print and online	Science	Medium	-	Rare/ medium
J9	Female	BA	Full-time, print and online	Economy	High	-	Rare/high
J10	Male	BA	Full-time, print and online	Domestic affairs and politics	Medium	-	Rare/low
J11	Female	BA	Full-time, online	Intl. affairs and politics	Medium	-	Rare/medium
J12	Male	BA	Full-time, online	Regional affairs	Medium	-	Rare/low
J13	Female	BA	Full-time, online	Economy	Medium	-	Rare/high
J14	Female	BA	Full-time, online	Intl. affairs	Medium	-	Rare/ medium
J15	Male	BA	Full-time, print	Energy	High	MENR	Never/ low
J16	Female	BA	Full-time, print	Economy	High	MEF	Often/ high
J17	Male	BA	Freelance, online	General	Medium	MEF	Often/ high
J18	Male	BA	Freelance, online	Energy	Medium	MENR	Never/ low

J19	Female	BA	Full-time, news agency	Economy and energy	Low	MENR	Rare/medium
J20	Male	BA	Full-time, online	General	Low	MEF	Often/high
J21	Male	BA	Full-time, print and online	Forestry and agriculture	High	MEF	Often/high
J22	Male	BA	Full-time, print	Palm oil	Medium	Palm oil lobby	Never/low
PR officers and campaign managers							
Code	**Gender**	**Edu.**	**Professional background**				
PR1	Male	MA	Public servant/official, no experience as a journalist				
PR2	Male	BA	Public servant/official, freelance journalist, and chair of online journalist association				
PR3	Male	BA	Public servant/official, no experience as a journalist				
PR4	Female	MA	Public servant/official, former journalist				
PR5	Male	MA	Former journalist and member of the public broadcaster's supervisory board				
PR6	Male	MA	Former manager of a national private TV and board member of a corporation that owns online and broadcast media				
PR7	Male	BA	No experience as a journalist				
PR8	Male	BA	Former journalist				
PR9	Male	BA	Former journalist				
Scientists							
Code	**Gender**	**Discipline**					
SC1	Female	Anthropology					
SC2	Male	Forestry					
SC3	Male	Environmental study					
SC4	Male	Meteorology and climatology					
Government experts							
Code	**Gender**	**Position**					
Ex1	Male	Chair of Indonesia's climate advisory board, former minister of environment					
Ex2	Male	Member of Indonesia's climate advisory board and connected to an international conservation NGO					
Ex3	Female	Former head of an expert team at the president's special envoy for CC and managing director of an international climate NGO in Indonesia					

Note. * Working experience as journalist: low = less than 5 years, medium = between 5–10 years, high = over 10 years

The PR managers of the institutions listed in Table 3 were simultaneously asked to participate. Four PR managers, two from MEF and two from MENR, agreed. In addition, two campaign managers from Greenpeace Indonesia and one from Walhi accepted the invitation. A list of the PR officers interviewed appears in Table 9. Most of the PR officers and campaign managers in the interviews were male and had experience working in the media as journalists, managers, or members of the supervisory boards of public broadcasters.

Considering the important role of the palm oil industry in Indonesia's economy and the amount of greenhouse gases emitted by this sector, the author also contacted PR managers from two palm oil lobby organizations in Indonesia: Aprobi and GAPKI. Both agreed to be interviewed. In the first wave, several scientists mentioned as sources in some articles on CC were contacted, and four scientists agreed to be interviewed.

In the second wave, journalist interviewees were selected based on interviews conducted with PR practitioners from governmental institutions, NGOs, and palm oil lobby organizations. During the interview, the participants recommended contacting other journalists with whom they had good relations or networks. This step resulted in the inclusion of ten journalists, as recommended by the PR practitioners. However, two journalists recommended by environmental NGOs were interviewed during the first wave (J1 and J2). Thus, eight additional journalists were interviewed in the second wave. Three additional governmental experts on CC were interviewed because the MEF recommended them as essential actors in the government's communication strategy regarding CC. The total number of interviewees and their profiles in each wave appear in Table 9.

5.2 Interview guidelines and procedures

The interview guidelines for journalists, PR practitioners, and scientists, developed based on the literature on journalism and PR and adapted to the Indonesian context, appear in Tables 10 and 11. The questions asked in the interviews with the journalists were developed based on factors influencing journalists' work in general (Shoemaker & Reese, 2014) and then specified for journalists writing on CC (Engesser, 2017). Engesser (2017) identified three key factors influencing journalists' CC-related news decisions: (1) journalistic background, (2) professional norms, and (3) culture. In a narrower sense, journalistic background refers to journalists' biographic, demographic, and residential factors. The present study included journalists' opinions on CC because it was plausible to assume that journalists' attitudes toward CC influenced how they framed this topic.

Questions regarding CC were designed to follow the operationalization of the frame elements from the content analysis, such as the problematic impact of CC, the causes of and solutions for CC, the benefits of climate action, and the moral evaluation of different actors in Indonesia. Questions regarding the second factor – journalists' professional norms – addressed the "ideals of how journalism should be exercised" (Engesser, 2017, p. 3). The most complex factor to identify was culture – a set of ideas, artifacts, and practices embedded in journalism in newsrooms, political inclinations, and journalistic styles (Engesser, 2017; Hanitzsch, 2007). Thus,

specific questions were not included in the interview guidelines for measuring culture because they were embedded in the questions regarding the first and second factors.

Table 10. Interview guidelines for journalists

Dimension	Questions
Personal background, perceived role of journalists, and opinions on climate change	• Please describe your educational background and working experience as a journalist. • How often have you written articles on CC? Have you ever been sent to cover the COP? • Please give your opinion about the function of journalists (in society). • How important is the issue of CC for you, and why? • Please give your opinion about the problems and causes of CC. • Please give your opinion about who is/are the most responsible (actors) for causing CC. • Please give your opinion about the most suitable solution for CC in Indonesia. • Please give your opinion about any benefits of CC or climate action for Indonesia.
Routines	• Please describe the process of writing articles on CC. • Where do the ideas for the articles come from? • What do you do if you receive press releases from the government or NGOs? • Have you attended a press relations event organized by the government or NGOs? If so, how often? • Do you trust the information provided by the government and NGOs in their press releases? • How important is a good relationship with government or NGO PR managers for you as a journalist? • Do you have personal contacts or relationships with PR professionals, the government, or NGOs related to the topic of CC? • What channels do you use to communicate with your sources?

The interview guidelines developed for PR officers and campaign managers were also based on the literature on media relations strategies, such as their motivations for interacting with the mass media (Macnamara, 2014; McPherson, 2016; Zerfass et al., 2016) and their strategies for building long-term relationships with the press (Bland et al., 2000; Conrad, 2013; Coward, 2010; Fenton, 2009; Taylor, 2014). The dimensions of motivation and organizational structure were included to obtain insights into the micro and meso levels of influence for PR practitioners (see Figure 1). The guidelines began with questions about PR practitioners' professional backgrounds and continued with their motivations and media relations strategies. For climate scientists and experts, the questions related to their opinions of the problem, the causes and solutions, the moral evaluations of actors in terms of climate action, and the benefits of climate action. Furthermore, they were asked about their science communication activities with the public, including whether they actively organize or attend press conferences with journalists.

Table 11. Interview guidelines for PR officers, campaign managers, scientists, and experts

Interviewees	Dimension	Questions
PR officers or campaign managers	Demographic and professional background	• Please describe your educational and professional background. • Have you ever worked as a journalist?
	Motivation and organizational structure (see Macnamara, 2014; McPherson, 2016; Zerfass et al., 2016)	• What is your organization's main objective in interacting with the press? • How many people work with PR activities in your institution/organization? • What equipment is available to support your media relations/PR activities? • What are the backgrounds of the PR practitioners working in your organization?
	Media relations strategy (see Bland et al., 2000; Conrad, 2013; Coward, 2010; Fenton, 2009; Taylor, 2014)	• Please describe your strategy for building long-term relationships with the press (media/journalists). • In your experience, what kinds of events or issues do journalists favor when writing on CC? • What is your strategy for creating/writing press releases? • How do you distribute press releases to journalists? • What communication channels do you use to communicate with journalists? • Is there any journalist you consider "close" to your organization?
Climate scientists and experts	Opinions on climate change	• Please give your opinion about the problems and causes of CC. • Who is/are the most responsible (actors) for causing CC? • What are the most suitable solutions for CC in Indonesia? • Are there any benefits of CC or climate action for Indonesia?
	Communicating science	• How do you communicate your scientific research on CC to the public? • Have you published your research projects and findings in the media through press releases or conferences? • Have you established close relationships with media/journalists in communicating your expertise on CC?

Most interviews were conducted on-site in Jakarta, Indonesia, and Katowice, Poland, between 2018 and 2019; the rest were conducted online in 2020. The interviews, which ranged from 30 minutes to over 3 hours, were recorded. Several interviewees requested to receive the list of questions from the interview guidelines in advance, but most preferred to respond without seeing them beforehand. All interviews were conducted anonymously to obtain candid answers, so the quotations presented in the following sections could not be traced to individual interviewees.

In the present study, the approach used for analyzing the interview data resembled Timmermans and Tavory's (2012) abductive analysis approach. Revers (2014) employed this approach to facilitate a creative inferential process based on surprising research evidence. MAXQDA software was used to transcribe and code the interviews. The analysis followed inductive principles. The items listed in the interview guidelines were used as a starting point by the author, who read all statements expressed by the interviewees, referring to these items and grouping the answers according to the corresponding categories to identify patterns. The same approach was used for the interviews with journalists, PR officers, experts, and scientists. The following subsections present the results according to the research model (see Figure 1). Specifically, the subsections describe political actors' conditions to explain their media strategies for creating and maintaining relationships with journalists and influencing their frames. Then, the journalists' conditions and how they perceived their relationships with sources are explained. Finally, the network of frame-building related to CC in Indonesia is visualized.

5.3 Findings on political actors' conditions and media relations strategies

At the macro level, PR officers from the government and environmental NGOs acknowledged existing media trends beyond their institutional systems, such as the declining popularity of print media and the rise of digital and social media. Almost all PR officers stated that they adapted their communication strategies by paying more attention to online and social media. However, they acknowledged that legacy media, such as print and TV, remained crucial in their communication strategies for reaching the public (PR1, PR2, PR3, PR7, PR8, and PR9). The PR officers from Greenpeace Indonesia even acknowledged that changing media use had strengthened their communication strategy, allowing them to directly communicate with the public and build closer relationships with journalists. Thus, they tried providing journalists with news materials, online traffic, and clicks:

> *We have been very attached to traditional media since the very beginning. We create press releases, videos, and photos that we send to the press and wires. It has turned out that this huge change in the media landscape is a benefit to us because it's strengthening our media campaigns . . . Nowadays, we often use social media to communicate with journalists . . . They really appreciate it when we repost or retweet their articles on our social media because we have almost a million followers. It will increase their online media traffic.* (PR8)

The media shift toward online and social media had a lower impact on the communication strategies of palm oil lobby organizations. A PR officer from a biofuel lobby organization mentioned that it concentrated more on supporting government campaigns abroad to respond to the environmental problem charges leveled against the Indonesian palm oil industry (PR5). This response showed that the environmental degradation caused by the palm oil industry in Indonesia is a macro-level factor influencing lobby organizations' communication strategies abroad. The national strategy focused more on a traditional media relationship approach, such

as press and editors' gatherings and journalists' visits to palm oil plantations, than using social media (PR5 and PR6). Meanwhile, none of the scientists used social media to communicate their research to the public, and only one government expert actively used social media to communicate CC-related activities (Ex3).

At the meso level, the greatest organizational differences between government institutions, palm oil lobby organizations, and environmental NGOs in their media relations strategies involved their organizational structures and budgets for interacting with journalists. Compared with environmental NGOs and lobby organizations, governmental institutions had the highest financial budgets for PR strategies. Therefore, they could hire many staff members and offer journalists a wide range of facilities to promote their agendas and frames. Both the MEF and MENR provided journalists with coworking spaces with computers and an internet connection to facilitate their work. These spaces also served as a hub where journalists could meet and gather, even when no press conference occurred. The journalists who often met in this hub had organized themselves into an informal group to exchange information about press releases, conferences, and social networking events, such as sporting events and religious holiday parties. Although the group was considered informal because no laws or official rules regulated its organization, a coordinator was typically informally elected within the group (PR1 and PR2).

These informal groups existed in each ministry, which was highly beneficial to the government's PR officers because it was easier for them to distribute information to journalists. PR officers joined WhatsApp groups created and administered by journalists, and they used this platform to distribute press releases and invitations to press conferences and gatherings (PR1, PR2, PR3, and PR4). PR managers from the palm oil organizations stated that they maintained good relations with the journalists' groups located at the offices of the Ministry of Agriculture and the Ministry of Trade because these ministries (unlike the MEF and MENR) were directly in charge of the palm oil industry (PR5 and PR6). When asked to name the journalists considered close to their organizations, they provided the contact information of a journalist who coordinated the journalists' group at the office of the Ministry of Agriculture, and one lobbyist PR officer said, "We often sponsor social events organized by journalists' groups, such as futsal competitions, workshops, or some parties they organized among them" (PR5).

The considerable financial power of governmental institutions and lobby organizations was relevant in another aspect. They reported providing monetary incentives known as "transportation money" to journalists attending press conferences to cover transportation costs. PR representatives from government institutions and palm lobby organizations considered it a legal and normal practice to appreciate the work of journalists by giving them transportation money because journalists usually earn small salaries (PR1, PR2, PR4, PR5, and PR6). Interestingly, they all said that the practice of "envelope culture," a practice of giving bribes to journalists in Indonesia (Hanitzsch, 2005), rarely occurred anymore. They did not consider the "transportation money" practice bribery because it was legal, and the amount of money was standardized in the government's annual budgeting plan (PR2 and PR4). When asked whether she often encountered journalists practicing the "envelope culture," a PR representative from one ministry said,

> *Definitely not. It's been a while since I met such journalists. After all, we are not allowed to give [bribe money] to journalists because we have no budget for that. It might be happening in private companies because they have a corporate social responsibility (CSR) budget for that, but it is not happening in our ministry. What exists is transportation money for journalists when they come and cover our events. Such rewards are already included in our official budget, so we are not breaking any regulations.* (PR4)

Nevertheless, not all journalists were willing to accept "transportation money." More specifically, those working for large media companies with a strong reputation for journalism ethics were usually unwilling to accept such financial incentives (PR1, PR2, PR4, and PR5).

Unlike the PR representatives from governmental institutions and palm oil lobby organizations, those from environmental NGOs said they avoid giving journalists financial incentives because it was against their ethical compliance codes (PR7, PR8, and PR9). Answering the question about strategies for engaging journalists, a PR officer from Greenpeace Indonesia clearly stated,

> *We have three principles for media engagement. Most important are trust and respect. We respect the integrity of each institution and always honor journalistic ethical standards. We will never give them envelope [money] or interfere in newsroom affairs . . . What we do is provide the best materials for journalists in the form of text, photo, video, or issues. If they need deeper information, we will happily provide it to them.* (PR7)

The questions about media engagement strategies for influencing journalists' work revealed blurred lines between political actors and journalists, a phenomenon conditioned by journalism culture (Hanitzsch, 2005) and other macro-level factors, such as media ownership. Both of the PR officers from lobby organizations held key positions in Indonesia's media landscape. The first was a member of the supervisory board of Indonesia's public broadcaster (i.e., TVRI), while the second was a high-ranking communications manager of a large corporation that owned companies in many business sectors, including several national private television and online news media. Both PR officers had the means to influence decision-making on media content via high-level management positions in the media organizations where journalists work. Scholars have criticized these penetrations of interest from politicians, corporations, and media owners because such constellations jeopardize press and media freedom in Indonesia (Armando, 2014, 2019; Tapsell, 2018).

The present study also encountered blurred professional ethics lines between PR representatives and journalists. One interviewed PR officer from the government also worked as chair of an online media journalists' association in Indonesia. In his opinion, his double role benefited his fellow journalists and members of his association:

> *I told my fellow journalists that, because I am working here now [as a government PR officer], I would give them the correct information. They often confirm with me what they have heard from other sources about some issue. Many of them cannot go directly to the field to cover a story, and I have*

> *so many sources now because the ministry has offices in almost each province. It is better for them to write a story based on press releases and direct sources in the field. Thus, if there is an event or issue worth covering in another province, I will inform my fellow journalists directly.* (PR2)

Having a personal network with journalists was considered the most important factor in dealing with journalists because it made PR officers understand the journalists' needs and rules of action (PR2, PR4, PR5, and PR8). Many of the interviewed PR officers were former or even active journalists who had gained huge advantages from their journalistic skills and networks. An MENR PR officer who previously worked as a journalist for a national news agency described how she used her skills as a former journalist to create more effective press releases:

> *To make sure that journalists use the frame that we want, we replaced the old style of government press releases that used to be stiff with a style that is often used by journalists, for example, by putting a direct quote from a source in the second paragraph, adding quotes from several [government] sources, and putting complimentary information at the end of the text. Journalists like such releases.* (PR4)

The interviews with PR managers at Greenpeace Indonesia showed that this organization also took advantage of the personal connections of their communication staff with journalists because all the staff members had previously worked as journalists. One of the managers explained that this situation occurred unintentionally because the organization never mentioned that it was looking for people who had worked as journalists when recruiting new staff or campaigners. However, those who had worked as journalists scored highest in the selection process (PR8). The strong journalist networks maintained by their staff members could be a significant reason for the strong ties between Greenpeace Indonesia and many journalist associations. Greenpeace Indonesia was even invited to become an honorary member of the Jakarta Foreign Correspondence Club, a journalism organization working for an international news agency in Indonesia (PR8).

Furthermore, a PR representative from a biodiesel lobby organization mentioned that journalists from the Jakarta Foreign Correspondence Club never attended the organization's invitations to coffee meetings or gatherings because he had no personal connections with these journalists (PR5):

> *When it comes to press conferences, there are two kinds of journalists in Indonesia: first, those who attend because they are interested in the issue, and second, because we are friends. The second one is the most effective. We did everything to build relationships with journalists, such as facilitating workshops on media management for editors and reporters, New Year's and holiday gatherings, and one-to-one communication during breakfast, lunch, or dinner. Except for some journalists who are idealists and brainwashed by international organizations or those international correspondents who are only interested in the issue, the rest never respond to our invitations to gatherings or dinners.* (PR5)

Professional and personal networks were also critical factors in the government's communication strategy regarding CC, as clearly observed in the CC communication hub, *Pojok Iklim* (Climate Corner), which the MEF initiated. It began in March 2016 through weekly discussions between stakeholders as a knowledge pool in which each stakeholder could receive information about CC-related regulations, research, actions, and initiatives in Indonesia (Widyanto et al., 2019). The three government experts interviewed were former high-level government officials with key positions in *Pojok Iklim*, often moderating and providing ideas for subjects for discussion. The first expert mentioned that this discussion forum was an important networking center for government institutions, researchers, NGOs, civil society representatives, and journalists (Ex1). In addition to officially serving as advisors to the MEF, all interviewed experts also served on executive boards of international NGOs operating in Indonesia. Regarding their communication strategies with journalists, only one explicitly mentioned that she actively approached and recruited journalists as members or fellows of her NGOs (Ex3), while the other two experts stated that they did not approach journalists personally and only gave interviews to journalists upon request (Ex1 and Ex2).

Unlike all PR officers, the scientists were the only actors who came into contact with journalists unintentionally or by accident. All admitted to having no strategy for communicating their research to the public. Moreover, they said that they did not plan most of their interviews with journalists, and most reported typically having contact with journalists when conducting research projects with government or donor institutions that often organized press conferences or journalists' visits to cover the projects (SC1, SC2, and SC4). An anthropology professor with over two decades of experience working with traditional rice farmers to measure changes in rain patterns explained,

> *At the beginning, these journalists came because the government and donor institutions invited them to cover my research project on several occasions . . . They become more and more curious when they see that those traditional farmers could conduct research, starting with collecting data and creating graphics on how the weather changed their rice fields. They can even create their own digital graphics now. Many journalists were amazed at that, and I think that is the reason why they write articles [on my research].* (SC1)

5.4 Findings on factors influencing journalists' climate reporting in Indonesia

The interviews revealed that the factors capable of explaining the climate reporting practices of journalists related primarily to (1) meso-level characteristics, such as media organizations, and (2) micro-level characteristics, such as professional experience and personal interest in the topic.

The interviews clarified the different influences of print and online media platforms on how journalists produce and distribute their news to readers. CC reporting is complicated because it deals with complex scientific material on how the world's rising temperatures correlate with global human activities related to producing and consuming goods and services. In addition, CC involves the discussion

of social justice between the developed nations of the Global North and the developing nations of the Global South. To fully understand the issue of CC, journalists need time to read multiple reports, texts, and journals and interview many sources. In short, writing a piece on CC is a laborious task that requires much time. However, time is a precious resource for journalists working in online media. This condition was clearly described by a journalist who works for both the online and print platforms of the same media company:

> *News in online and print media has a different character. Online media concentrates only on publishing information about what happens on a particular day. For example, during COP 2018, we reported what happened at the conference daily on our online platform but did not summarize it… Meanwhile, our print edition analyzed the conference as part of a more comprehensive story. Online media doesn't do that kind of stuff. It is more like a race that happens every second.* (J8)

A journalist working for an online media company mentioned having to write more than five articles daily, leaving no time to confirm the information received from press releases, experts, or other sources (J7). In contrast, a freelance journalist for an online media company stated that she had no minimum target for how many articles she had to write daily. However, her pay depended on the number of articles published. Thus, to use her time effectively, she often translated news materials from the wire (J5). In fact, the impact of the newsroom routines of online media companies surpassed journalists' personal interests in climate reporting. A journalist at the scientific desk of an online media company in Indonesia who was a member of the Society of Indonesian Environmental Journalists stated,

> *To be honest, it is not that I am not interested in covering the impact of climate change on society, but I just do not have the resources to go to places to investigate the impact of climate change on the local people. Honestly, media companies that have enough resources rarely exist. Thus, it is rare for me to go directly to the field [to gather news]. I think many journalists have an interest in climate change. This can be seen in the number of members of the Society of Indonesian Environmental Journalists and the huge response from Indonesian journalists to fellowship programs on climate change organized by the Alliance of Independent Journalists in Indonesia. So, there is a huge interest from journalists, but it is rather a matter of what happens in practice.* (J4)

Audience engagement with trending topics is another factor distinguishing newsroom routines between online and print media; it is also critical in deciding whether a CC issue is "sexy enough" to be covered. Many of the interviewed online journalists mentioned the influence of search engine optimization on their routines in the newsroom (J4, J6, J7, J8, J11, J12, and J14). Unfortunately, environmental issues, such as CC, often do not appear as trending topics, meaning they are considered to have less news value and do not generate enough clicks. Because online media rely on internet traffic, fewer clicks mean less income (J6, J7, J8, J11, and J20). Reader comments are another indicator online media use to measure reader

engagement with their articles. An online journalist whom the MEF facilitated to write climate reporting during COP 24 described her experience:

> *Some people at my office told me that my articles [about COP 24] have only very few comments because our readers don't understand this stuff. When an article receives much traffic and many comments, we will follow up on the issue and continue writing about it. In my experience, there was only limited attention to environmental news; therefore, we did not follow it up. This was also happening with my articles on COP 24.* (J11)

While journalists working on online media platforms must consider the speed and quantity of news production, their colleagues working in print media have more time to collect data, confirm the impacts of the CC in the field, and interview different sources when writing about the CC (J1, J2, J3, and J6). Instead of needing to write many articles, print media journalists must fight to get their articles published (J1, J2, and J3). Journalists in this field admitted to having certain privileges because they had more time to work on their pieces than their fellow journalists working for online media. However, they also acknowledged the decline of print media, which they needed to eventually address. A senior journalist who had worked in print media for over 30 years (J1) said, "Working for online [media] is difficult. I don't think I can change the way I write news." A younger print media journalist even stated that he would rather change his profession if the media company for which he worked transferred him to an online newsroom (J3):

> *The important sources for me when writing articles on climate change are academics, researchers, and scientific journals on the topic. Also important [sources] are the people who are directly affected by climate change . . . I think online media content is becoming more and more superficial. I would work for online media only when they are not prioritizing the speed of, but rather the depth of, news.* (J3)

The results from the content analysis of media frames (Table 5) supported the journalists' statements above. The analysis showed that articles from print media, for which most experienced journalists work, employed the science frame and the causes of CC frames more frequently than online media. Articles with these two frames frequently cited diverse sources, including scientists. Thus, the aforementioned interviews with the journalists explained the reasons for the content analysis results.

In addition to these differences, the focus of media organizations also influences journalists' climate reporting. Three of the ten journalists the PR officers and campaigners recommended worked in the media and focused on specific topics or sectors. The first journalist (J18), recommended by a PR officer from the MENR, worked for an online platform centered on news about the energy sector. The second journalist (J21), recommended by a PR officer from the MEF, worked for print and online media focused on agriculture and forestry. Finally, the third journalist (J22) worked for a magazine dedicated to the palm oil sector. All three journalists confirmed their close ties with the PR officers who recommended their names, stating that they often attended media relations events organized by these institutions.

When asked how often they wrote on CC, including its causes, problems, and solutions, two journalists (J18 and J22) mentioned that, although they believed the issue to be important, they rarely included topics related to CC in their reporting. Both interviewees primarily worked with the economic aspects of the energy, mining, and palm oil sectors, constituting the focus of their media companies. Meanwhile, the journalist who worked for the media covering news about agriculture and forestry (J21) mentioned that he often wrote articles on CC because they related strongly to the topics of forestry and agriculture in Indonesia. As a senior journalist, he had covered several COP meetings and had written many articles on CC and forestry sector regulations in Indonesia.

Conditions at the micro level were also important factors influencing how journalists wrote about CC. Regardless of the desk to which they belonged, journalists with moderate to high working experience could explain the relationships between the various dimensions of CC in the Indonesian context. For example, a journalist at the economic desk with over 13 years of experience in print and online media (J9) noted the importance of considering Indonesia's economic development and how it relates to CC. In contrast, journalists with limited work experience could not make such connections (J13 and J15). Combined with a personal interest in and attention to environmental issues, journalists with high experience perceived themselves as part of a movement aiming to save the environment and giving voice to the most affected communities suffering from CC (J1, J3, and J6).

Senior journalists working for reputable print media had the power to defend their ideologies and roles regarding source influence. Most reported using information from government press releases only as additional information. One even stated that he did not trust government or NGO PR officers because they only wanted to promote their interests (J3). Highly experienced journalists with more training knew how to deal with PR officers' efforts to influence their stories and frames. A senior journalist from *Kompas* stated,

> *Journalists who already have extensive experience covering certain issues usually already know what they would like to write on an issue before attending a press conference. I was trained for one year when I started to work for Kompas so that I could be prepared for the issue that I would like to write about. In Kompas, it is standard practice that we already have our frames when we go [to a press conference], and most of my ideas are not similar to the press releases given by the government or companies. I will need the raw data they provide in the press release, but for my story, I will interview the source directly.* (J15)

The independence of senior journalists also became clear during COP 24 in Katowice; they received different treatment than PR officers. One senior journalist explained that he had the freedom to cover any story at COP 24 and had access to many high-ranking officials because he knew them personally after working for more than 15 years as a journalist (J21). Meanwhile, another journalist with less experience who mainly worked for online media explained that she received a full schedule of the events that she had to cover during the same conference from the PR officer of the MEF (J14). Senior journalists with good reputations and estab-

lished relationships with political actors and their PR officers could even provide direct input or suggestions regarding specific issues (J6, J15, and J21).

A senior journalist working for the energy desk mentioned that he could directly message the ministry without contacting the PR officers: "The Minister of Energy thanked me personally when I criticized his policy in my article because it is an input for him" (J6). The journalist even admitted to sometimes correcting the data published by the MENR in its press releases when he knew them to be incorrect. The MENR PR officer confirmed this notion (PR4), stating that the ministry was happy to receive such input because the journalist had a good reputation and was an energy-issue expert. Thus, these journalists adapted the frame induction from the sources while inducing their opinions and frames onto the source.

5.5 Discussion

The interviews with PR practitioners from government institutions, environmental NGOs, and palm oil lobby organizations demonstrated that each actor applied different strategies to promote their agendas to the media. Scientists were the only stakeholder group that did not strategically communicate about CC to the Indonesian media. Unlike PR practitioners, who work for a specific organization with specific aims, all climate scientists interviewed were either researchers within a research agency or university professors with no institutional agenda to influence media or public opinion on CC. This finding confirmed the initial thesis that organizational roles influence individual actions and their function in achieving organizational objectives (Schimank, 1996). Within this logic, PR practitioners with ministries must create PR strategies that increase public support for government policy on CC. In contrast, campaign managers from environmental NGOs must create strategies to obtain public support for campaigns that push the government and private companies toward creating a CC-friendly policy and business. Meanwhile, climate scientists act according to the expected roles in their respective universities: researching and teaching rather than conducting strategic communication on CC.

The findings showed that in doing their jobs, PR practitioners and journalists were influenced by micro-, meso-, and macro-level factors. The micro level of influence, such as working experience, was crucial. Experienced journalists had more contact with elite politicians and had the status of being in the "exclusive circle" (Lindén, 2013) of policymakers and environmental activists. These journalists enjoyed the possibility of adapting their frames and inducing their opinions or frames on CC to PR practitioners. Microconditions also exerted an important influence on PR practitioners. PR officials and environmental campaigners with long working experience as journalists had more skills to understand which CC-related news values were important for journalists because they once belonged to the journalistic system.

The findings also showed that, in the Indonesian context, the professional line between journalism and PR could become completely blurred: A journalist could hold a dual role as a PR lobbyist and a member of the supervisory board of a prominent national TV program. This result confirmed Ruß-Mohl's (1991) concern

that PR activities could outgrow the existence of independent journalism, which might be the consequence of a long tradition of development communication in Indonesia (see Section 2) defining the support of the government's development agenda as an important function of journalism.

At the meso level, the organizational structure in which PR practitioners and journalists worked also exerted significant influence. For PR practitioners, the financial power of the organization determined how many facilities they provided to journalists to facilitate their work. Such economic power also enabled organizations to recruit and hire more staff to conduct PR activities, such as distributing press releases, gathering press events, and social media campaigns. For journalists, the differences in routine activities between online and print media newsrooms strongly influenced the news-production process. Whereas journalists from print legacy media had the time to collect the necessary data and information to create climate reporting related to the local context, journalists working for online media organizations had less time and fewer resources to produce comprehensive CC articles. This time constraint and obligation to produce many articles forced them to use information or articles from international news agencies or organizations without adapting them to the local context or using the materials or frames promoted by PR practitioners.

These findings revealed that PR professionals and journalists actuated their roles as influenced by micro- and meso-level conditions in each subsystem, factoring at the macro level. The interviews showed that the digital transformation of the entire media landscape and the intensive use of social media were highly relevant macroconditions influencing both subsystems. However, this influence worked in different directions. Whereas the trend gave more freedom to PR practitioners to reach out to the public by optimizing the use of social media, the opposite was true for journalists. The changing conditions made it more difficult for journalists who wanted to write articles on CC. Despite the abundance of material and data on the internet to report on CC, most did not have the time to create meaningful articles that related the global issue to the local context. The emerging media logic of creating articles related to trending topics also made it more difficult to publish articles on CC because journalists had to convince their editors to do so. In addition, these articles have not created many clicks and comments or become trending topics, confirming that the production of appropriate knowledge of CC depends more on the system surrounding journalists and less on individual conditions (Lück et al., 2018). A different effect of macro conditions on PR practitioners and journalists has shown that the influence of macro conditions on subsystems is context-dependent (Dernbach, 1998).

6. Network of influence in the frame-building process regarding climate change in Indonesia

This section discusses the network of influences involved in the frame-building process of CC coverage in Indonesia. Based on the two interconnected empirical studies conducted (content analysis, Section 4; interviews, Section 5), it elaborates

on the findings and describes the relationship and degrees of induction, adaptation, and coproduction among PR and journalists (see Figure 2).

Figure 2. Network of influence in the frame-building process in climate change reporting in Indonesia

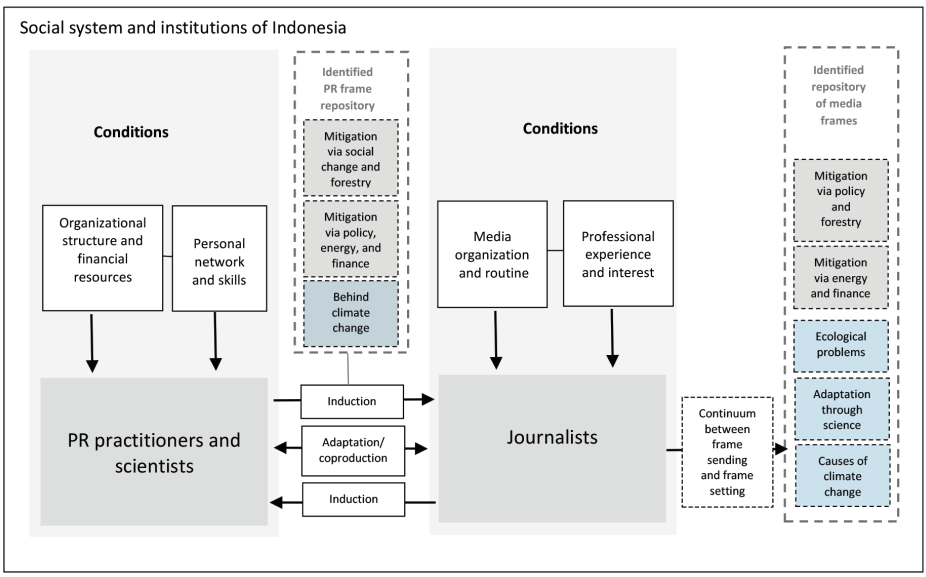


Figure 2 displays the three frame repositories on CC promoted by the government and NGOs in Indonesia. Meanwhile, the media employs five frames on CC. A comparison of these frames reveals that the government is the most successful actor in inducing its frames into the media. The interviews with the actors showed that meso and macro conditions influenced their communication strategy. At the meso level, *organizational structure and financial power* were the strongest influencing factors. Meanwhile, at the micro level, *personal networks and skills* influenced the ability of PR practitioners to introduce their frames to journalists. In other words, PR practitioners working for the government and having strong personal networks *should, can,* and *will* easily influence journalists. This dynamic relation between individual and structural conditions reflects the basic structure of the different actions taken by different individuals according to their specific roles (Schimank, 1996).

In contrast, climate scientists communicate CC to journalists only when they can and do not feel they should strategically frame and promote CC. Unlike other political actors, journalists still adopt their frames in the media despite not actively conducting PR. Considering the country's low-income levels, CO_2 emissions per capita, and geographical location, most interviewed scientists stated that adapting to CC is a priority for Indonesian people. Although the scientists do not tend to actively communicate their research to lay audiences, the present study showed their voices and climate adaptation frames present in the Indonesian media, indi-

cating that potential exists to leverage scientists' voices in public discourse in the future using strategic science communication activities to connect climate scientists and journalists. Indonesian scientists, particularly those working on the topic of CC, should actively establish and maintain networks with journalists or journalist associations to introduce their frames into the media. These relations could be initiated by approaching journalism or communication science students at higher education institutions in Indonesia, where future journalists and media practitioners are trained.

The current study showed that, similar to PR practitioners, journalists' ability to report on CC is influenced by meso conditions, such as *media organizations and routines,* and micro conditions, such as *professional experiences and interest in* CC. In climate reporting, journalists who work in print media and have a long working experience and high interest in environmental issues are typically able to cover CC in a balanced manner that can "recognize and value the need for an authoritative of consensus on the direction policy but retain the necessary ability to politicize partial and local solution and recipes for climate change" (Kunelius, 2019, p. 219). The current study confirmed that the network between journalists and their sources functions during COPs and non-COP situations, as observed by Lück et al. (2018). Journalists with high experience tend to have long-standing established networks, enabling more direct and personal contact with their sources with the government, NGOs, and the scientific community. As shown in Figure 2, these journalists are more likely to conduct active frame-setting when they frame CC based on their interpretation of the issue from both global and local perspectives. Most likely, these journalists do not rely exclusively on the mitigation frame promoted by the government (see the gray boxes in Figure 2) but use the other three frames as well. PR practitioners cannot easily induce their frames in this kind of journalist. Instead, they treat these journalists as experts, which can induce their frames in PR practitioners or facilitate the coproduction of materials on CC.

The findings demonstrated that journalists with less experience and personal interest in CC who work for online media most likely limit their work to frame-sending and "passively pass on interpretations" (Brüggemann, 2014, p. 62), provided by PR practitioners. In other words, PR practitioners can easily introduce their frames to journalists in this category. Therefore, when such journalists receive press releases from government PR containing mitigation frames, they pass them on in their articles because they have less time and competency to create their own frames on CC. Considering the rapid decline of the print media industry in Indonesia and the high public consumption of online media as a source of information, this condition is not ideal. Since millions of Indonesians are already affected by CC, the public needs reliable information to help them act against or adapt to it. Furthermore, high-quality information on CC, as it relates to Indonesian reality, could help citizens decide whether to support or oppose certain political decisions, such as land use regulation, coal mining and export, and the development of renewable energies.

Whereas previous studies have discovered personal interests, networks, and experiences to be the most important factors in influencing news production related to CC (Engesser & Brüggemann, 2016; Lück et al., 2018), the present study

demonstrated that frame selection is also influenced by the routines and characteristics of media organizations in the context of Indonesian journalists, particularly the differences between print and online media. Engesser and Brüggemann (2016) and Lück et al. (2018) did not consider this factor, likely because the samples in these studies were limited to journalists working for leading professional news outlets. Accordingly, these journalists likely belonged to the exclusive circle (Lindén, 2013) of engaged topic-related specialists in their respective countries.

As depicted in Figure 2, both the micro- and meso-level conditions of PR practitioners, scientists, and journalists are constantly influenced by macro-level conditions in Indonesia, including the media system, economic development, and historical context, which have anchored the ideology of development communication in Indonesia (see Section 2). Shoemaker and Reese (2014) noted that the micro, meso, and macro levels are interconnected; they constrain and enable each other. In the Indonesian context, the present study showed that the government and palm oil industry associations have an advantage due to their organizational structures influencing journalists' climate reporting. Both types of institutions have wide organizational networks, which provide the resources to influence media content directly through their relations with journalists and indirectly through connections with the editors or management of media organizations. Indeed, many media companies in Indonesia are owned by businesspeople who are also active politicians (Armando, 2014; Lim, 2012; Tapsell, 2018). This condition blurs the clear separation of roles between PR and journalists, as assumed by the IE model. This phenomenon is not new and can also be found in developed Western nations (Robbins, 2020). However, the present study underpinned that these blurred lines are even worse, particularly in developing countries such as Indonesia that lack a long democratic tradition.

The present study also confirmed that the journalistic culture in Indonesia differs from developed and democratic Western countries. An example is accepting money from PR officers, which is considered normal in Indonesia's journalism culture and is rooted in the country's culture (Hanitzsch, 2005, 2006; Hanitzsch & Hidayat, 2012). In Javanese culture, widespread across the nation, gift-giving is a sign of respect and affection, particularly for family members. Thus, in Indonesia, giving gifts or money to others is often considered not bribery but a sign of respect and affection (Srirejeki, 2020). The present study found that this practice still occurred in Indonesia, albeit under a different name: instead of "envelope money," it was called "transportation money."

Another relevant aspect of the distinct journalism culture in Indonesia is "polite journalism." In Indonesian culture (or precisely, the culture of the two majority tribes, the Javanese and Sundanese), open criticism is perceived as impolite (Hanitzsch, 2006). The culture of being polite and compassionate is an important strategy applied by *Kompas*, the most reputable media outlet in Indonesia (Sularto & Santoso, 2016). As such, journalists avoid open criticism that could hurt the government or other actors and lead to conflict. This approach is considered to have significantly contributed to saving *Kompas* from being banned during the Suharto authoritarian regime, which may be why moral evaluation frame elements have been almost absent in media frames on CC. Although the massive deforesta-

tion caused by the palm oil and mining industries has intensified the consequences of CC in Indonesia, open media criticism of these aspects rarely occurs.

The long tradition of development communication and polite journalism may also be why Western scholars have labeled the journalist's role in Indonesia as a "timid watchdog" (Hanitzsch, 2005). In this specific cultural milieu, the term "watchdog," which holds positive associations for Western journalists and scholars, may not function similarly to describe the professionalism of Indonesian journalists. Indeed, dogs are perceived differently in Indonesia than in Western societies. In Western cultures, dogs are faithful, vigilant, and strong, whereas in most parts of Indonesia, they are perceived as filthy and dangerous animals that cannot be touched. The word "dog" is used to swear or curse at someone in Indonesia. Demanding journalists behave as watchdogs would produce negative reactions in Indonesia. As such, sensitivity to the cultural context is important to avoid forcing Western perspectives on countries with different cultural and historical backgrounds.

Considering its long tradition of development communication ideology, journalism in Indonesia is prepared to launch PR on economic development in the country. For the future of Indonesia, shifting the understanding of development communication beyond promoting economic growth toward focusing on sustainable development is essential, as promoted by the UN and ratified by all member countries in 2015 (Priyadharma, 2022). The UN (2007) stated that sustainable development is "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (p. 1). Within this understanding, journalists should consider the sustainability aspect of their coverage and critically write on the issue from a sustainable development perspective.

7. Conclusion and outlook

The present study outlined the frame-building process related to CC in Indonesia, which is highly affected by CC and contributes significantly to the world's carbon emissions. The study employed the HI (Shoemaker & Reese, 2014) and IE models (Bentele & Nothhaft, 2008) to trace the complex relationship between journalists and their sources in producing news related to CC. These models helped elucidate how different organizational and personal conditions have influenced journalists and their sources in shared societal and institutional systems.

By conducting content analysis on press releases and media articles and interviewing PR practitioners, scientists, and journalists, the present study showed how multiple forces simultaneously influenced journalists since "influence at one level may interact with that at another" (Shoemaker & Reese, 2014, p. 1). The organizational and personal levels of influence have been clearly affected by the characteristics of Indonesia's societal and institutional systems. The study also showed how cultural specifics, historical experiences, and the economic situation of a developing country in the Global South provide a distinct setting for communication processes compared with those typical in countries of the Global North.

On a conceptual level, the current study elaborated on two models to describe the dynamic relationship between the roles of stakeholders and journalists in the frame-building process. While the HI model helped explain possible influences on

journalists from micro, meso, and macro levels, the IE model investigated the influence of PR activities on journalists, which, due to its historical context regarding the development of communication ideology, is crucial in Indonesia. Unlike Ruß-Mohl's critique of IE, the present study showed that the *intereffication* or "mutual enabling" action between PR and journalists in non-Western society is not merely "PR for PR" (Ruß-Mohl, 1999, p. 170) but helps explain the country's reality. Thus, the present study benefited from the IE model for a couple of reasons. First, by directly including the PR system in the model, the current study considered the tremendous power of PR on journalism in Indonesia. Second, this model also facilitated a demonstration that, in reality, journalists working under certain privileged conditions could co-produce (Lück et al., 2015) or even set (Brüggemann, 2014) frames regarding CC in Indonesia.

On a practical level, by combining content analysis and interviews, the present study found that for most journalists in Indonesia, climate reporting is a Herculean task. Indeed, journalists deal with continuous, strong influence from their sources while fulfilling the ambitious task of informing the public about a complicated issue and educating audiences who lack basic and digital media literacy (Purbo, 2017). Therefore, the present study supported Wahyuni's (2017) call to mainstream the CC issue in journalism education in Indonesia. Knowledge of the causes and impacts of CC and the solutions to the problem in global and local contexts should be included in journalism education curricula. Furthermore, because CC is a causal global issue transcending national borders, Indonesian journalists should create or join networks or cooperate with journalists from many countries to create meaningful and impactful climate reporting. An example of such a network is The Global Climate Change Lobby project from the International Consortium of Investigative Journalism (ICIJ, 2012)

Despite attempting to thoroughly explain the frame-building process for climate reporting in Indonesia, the current study had several limitations. First, due to time and economic constraints, only publications from four media outlets were fully coded for the content analysis, while the rest were randomly selected. Considering the sensitivity of cluster analysis in identifying frame packages, different sample selection methods could influence the result of the identified cluster. Thus, the results of the content analysis should be treated with precaution. Meanwhile, the results in the interview section were based on interviews with PR practitioners and journalists in the capital city, Jakarta. Thus, the result might not represent journalists in Indonesia located on other islands such as Sumatera, Borneo, Bali, or Papua, which are far from the political elites' power in Jakarta. Journalists in Borneo, Sumatera, and Papua could have different personal experiences with deforestation, palm oil, and the mining industry than those in Jakarta because this destruction occurs in their backyards. Different personal experiences connected to an issue are also critical factors that could influence media content (Shoemaker & Reese, 2014). Hence, future research on frame-building in Indonesia should include this factor by analyzing regional media content on CC while speaking to journalists in this area.

The second limitation was that the audience's influence on the frame-building process has widely been ignored. The only audience influence discussed was how the audience's clicks, trending topics, and comments on online articles led to the

newsroom's decisions on issue selection. Therefore, considering the high use of social media in Indonesia and the fact that each media platform in the present study owned social media channels with millions of followers in some cases, audience interaction through social media could play a crucial role in news production and frame-building processes. Future research should consider and include this aspect in its framework.

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