Cogent Social Sciences

ISSN: 2331-1886 (Online) Journal homepage: www.tandfonline.com/journals/oass20

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To cite this article: Nina Karlina, Ahmad Zaini Miftah, Ida Widianingsih & Sarjit Singh Gill (2025) Organizational capacity and policy integration: government communications strategy in managing COVID-19 in Indonesia, Cogent Social Sciences, 11:1, 2563038, DOI: 10.1080/23311886.2025.2563038

To link to this article: https://doi.org/10.1080/23311886.2025.2563038

COGENT SOCIAL SCIENCES
2025, VOL. 11, NO. 1, 2563038
https://doi.org/10.1080/23311886.2025.2563038

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Organizational capacity and policy integration: government communications strategy in managing COVID-19 in Indonesia

Nina Karlina[a], Ahmad Zaini Miftah[a,b,c], Ida Widianingsih[a,c] and Sarjit Singh Gill[d]

[a]Public Administration Department, Faculty of Social and Political Sciences, Universitas Padjadjaran, Bandung, Indonesia; [b]Applied Science Department, School of Vocational Studies, Universitas Padjadjaran, Bandung, Indonesia; [c]Center for Decentralization and Participatory Development Research, Faculty of Social and Political Sciences, Universitas Padjadjaran, Bandung, Indonesia; [d]Department of Social and Development Sciences, Faculty of Human Ecology, Universiti Putra Malaysia, Serdang, Malaysia

ABSTRACT

The Covid-19 pandemic is a multifaceted issue for governments globally, and through public communication, social restrictions, and inclusive policies, the community has to obey and follow all the health guidelines to minimize the spread of the virus. This study aims to understand how policy integration, communication, and cognitive dissonance have played out during the pandemic. This study applies causal mechanism tests and cross tabulation in IBM SPSS analysis to assess the impact of strategic communication on 100 ethnic groups in Indonesia by comparing the Covid-19 guidelines with the violation number. Research evidence shows that, despite the presence of well-coordinated policies and communication activities, these could not completely stop policy infringements. Economic factors, cultural norms, and social relations play a critical role in shaping people's conduct, highlighting the importance of a more refined understanding. Non-governmental organizations, religious leaders, and other groups should also be incorporated to enhance health education and fill the gaps created by government policies. This means that cultural and socioeconomic factors should be taken into account when implementing policies. Thus, health policies are sensitive to the socioeconomic status of the community, in addition to involving leaders for improved control of pandemics.

ARTICLE HISTORY
Received 28 November 2024
Revised 28 August 2025
Accepted 15 September 2025

KEYWORDS
Organizational capacity; policy integration; strategic communication; Covid-19

SUBJECTS
Health Communication; Ethnicity and Culture; Organizational Studies; Language & Education; Intercultural Communication; Organizational Communication; Race & Ethnic Studies; Public Health Policy and Practice; Public Policy; Health Policy

Introduction

The Covid-19 pandemic, a wicked problem, has posed an unprecedented challenge to governments worldwide (Han et al., 2020; Mei, 2020; Miftah et al., 2023b). The complexity and uncertainty surrounding the virus necessitated an effective, coordinated communication strategy and integrated policy (Miftah et al., 2024; Sharifi & Khavarian-Garmsir, 2020). These measures aim to encourage public compliance with health protocols, thereby preventing viral transmission (Maggetti & Trein, 2022; Wirawan et al., 2024). During a crisis, organizational capacity determines whether an organization responds and recovers, or even advances (Barbera et al., 2025).

The Covid-19 pandemic has also illustrated that wealthier countries, despite having greater resources, do not necessarily possess greater resilience than developing countries (Freed et al., 2020; Thurbon & Weiss, 2020). Despite having advanced healthcare systems, several Western countries have faced challenges in managing the Covid-19 pandemic, resulting in a high number of confirmed cases (Thu et al., 2020; Thurbon & Weiss, 2020). The Covid-19 pandemic has had a multifaceted impact and presents unique challenges (Miftah, Widianingsih, Muhtar, et al., 2025; Sumaryana et al., 2025; Wernli et al., 2022). Unforeseen occurrences pose multiple risks to governments during the policymaking process. This highlights the need for creative and comprehensive policy management strategies to address health emergencies and their consequences (Shigayeva et al., 2010; Weible et al., 2020).

CONTACT Nina Karlina nina.karlina@unpad.ac.id Faculty of Social and Political Sciences, Universitas Padjadjaran, Jl. Raya Bandung Sumedang KM.21, Sumedang 45363, Indonesia

Indonesia is a multicultural country with multiple nationalities, tribes, races, languages, and ideologies, which contributes to the complexity of handling the Covid-19 pandemic (Pangalila et al., 2024; Susanto et al., 2020; Yuliantri & Suwignyo, 2024). Collaborations across communities contribute to the community's efforts to address the pandemic effectively by utilizing the full potential of each entity involved (McIntyre-Mills et al., 2023; Moorthy et al., 2022). The act of social solidarity serves to safeguard one another and enhances efforts to mitigate the consequences of the Covid-19 pandemic (Harini et al., 2022). It is imperative to employ strategic communication to enhance the efficacy of the efforts to addressing the Covid-19 pandemic (Dennison, 2020; Maggetti & Trein, 2022).

In addition, global health issues reflected in the Sustainable Development Goals (SDGs), particularly SDG 3 'Good Health and Well-being', SDG 4 'Quality Education', and SDG 10 'Reduced Inequalities' (Funnell et al., 2023). Especially during Covid-19, the achievement of these SDGs has been hampered (Nanda et al., 2023; Widianingsih, Abdillah, Herawati, et al., 2023). These goals, which are closely related to the current phenomenon, highlight the critical role of guidelines in supporting COVID-19 recovery by bridging information disparities among the population. In a multicultural society such as Indonesia, the development of guidelines in various local languages not only contributes to the achievement of SDG 3, but also advances SDG 4 and SDG 10 (Ranjbari et al., 2021).

Managing the Covid-19 pandemic has been a complex challenge, especially when addressing issues related to language and behavior (Eguico et al., 2023). These obstacles have had substantial effects on the dissemination of information regarding public health, ability to obtain medical care, and compliance with safety protocols (Filip et al., 2022). This was further complicated by emotional reactions on social media sites, where collective sentiments varied from endorsement to complete refusal of the imposed restrictions (Miftah et al., 2023a). Therefore, effective forms of strategic communication are essential for dealing with crises (Li & Lee, 2024; Macagno & Trevisan, 2024). Furthermore, the COVID-19 pandemic has accelerated the process of digital transformation, enabling individuals to access diverse educational resources across multiple media platforms (Fang et al., 2022; Nanda et al., 2023; Widianingsih, Abdillah, Adikancana, et al., 2023).

Strategic communication can bridge cognitive barriers to connecting abstract goals (Katz & Byrne, 2019). When more credible and massive communication is carried out, the cognitive dissonance for each individual target will also be even greater, which (Zhang & Zhou, 2023). can affect someone's way of thinking (Katz & Byrne, 2019). Cognitive dissonance in this case is interpreted as a condition when one of the cognitions occurs after the previous cognition, which turns out to be the opposite, will cause an uncomfortable feeling so that it motivates someone to reduce or eliminate the cognition that is toned, or add consonant cognition, which (Zhang & Zhou, 2023). tends to motivate individuals to change their attitudes and behavior; (Katz & Byrne, 2019) in connection with the health sector, this is in accordance with the research conducted by, Alcalay (1983), which states that the use of mass communication campaigns, which can positively change the health-promoting behavior of the public, is better than the use of interpersonal communication and community organization of mass communication.

Policy actors and other stakeholders, including religious and community leaders, play a crucial role in managing the COVID-19 pandemic (Ayub et al., 2023; Essa-Hadad et al., 2022; Lee et al., 2022). However, further investigation of the specific nature of their function and the ways in which they contribute to the response to the pandemic, as well as their impact on developing public trust and promoting community compliance, is needed (Alam et al., 2021; Ayub et al., 2023). Furthermore, what is actually the capacity of the government to integrate it in the form of a proficient communication strategy to addressing the Covid-19 pandemic (Mardiyanta & Wijaya, 2022; Suwarno & Rahayu, 2021).

Given Indonesia's diversity of ethnic groups and languages, the presence of guidelines in responding to the pandemic becomes unique, particularly in addressing language barriers (Saragih et al., 2023). Additionally, the country's religious diversity makes it relevant to analyze the extent to which religious leaders played a role in communicating compliance during the pandemic (Handayani & Khoiriyah, 2022). When projected onto current health issues in Indonesia, personalized guidelines serve as an effort to internalize health protocols (Saragih et al., 2023).

The research question in this study is: 'How is the government's capacity to integrate the Covid-19 pandemic policy through communication strategies in educating the public in 100 large Indonesian ethnic groups?' Accordingly, the objective of this study is to explore the government's capacity to integrate

the Covid-19 pandemic policy through communication strategies in educating the public in 100 large Indonesian ethnic groups based on the existing guidelines.

Theoretical framework

The challenges of integrated policies require governments to apply inclusive strategies to improve policy coherence by bringing together multiple actors to reach agreement on actions (Howlett & Saguin, 2018). Governance-oriented studies have shown how various Organizational arrangements might facilitate policy integration through political coordination mechanisms, networked governance, or administrative coordination capacities (Domorenok et al., 2021a, 2021b). Contemporary attempts to integrate policy integration and capacity into a more comprehensive conceptual framework have taken a policy design perspective, suggesting that effective integrated policy designs require analytical, operational, and political capacity (Wu et al., 2018). Organizational capacity has a direct influence on shaping and determining the policy dimension (Ting, 2011).

Integration and innovation of policies with a science-mix approach provide complexity to policy implementation (Aminullah & Erman, 2021). However, in fact, the implementation of health policy in Indonesia itself has been integrated and utilizes Artificial Intelligence (AI) in services such as telemedicine provided by the Ministry of Health (Tun et al., 2025). This has been applied to ultrasound, radiology, electrocardiography, and consultation services. In addition, data protection is also a crucial thing that has also been regulated (Tun et al., 2025). The role of various levels of government, both national and local, also determines how health policy can be implemented (Nuriana et al., 2024).

Organizational capacity is understood as resources, capabilities, and competencies (Gasco-Hernandez et al., 2022). It is identified as the government's ability 'to do what it wants to do' and extends beyond resources alone (Björk et al., 2014). Organizational capacity focuses on governance, particularly on how policy-making is conducted by governments to achieve specific objectives (Dunlop & Radaelli, 2018). There are four dimensions of organizational capacity, namely infrastructure, management knowledge and learning, and collaboration (Dunlop & Radaelli, 2018). Organizational capacity is regarded as a desired attribute at every level of government, especially for local governments in carrying out their functions amid crises and environmental uncertainty (Gasco-Hernandez et al., 2022).

Methodology

This study employed netnography, which is a combination of ethnography and the internet as a data medium (Lopez-Rocha, 2010; Udenze, 2019). The netnography method provides rich data, allows for a relatively fast research process, and can be combined with other methods, including offline approaches, to enhance research depth (Wu, 2022). This method addresses research questions by collecting data from internet sources, including guidelines published by the Ministry of Education and Culture on its official website. In addition, news articles were gathered online from various Indonesian news outlets.

Then, followed by a causal mechanism test (Beach, 2016) and a descriptive retrospective analysis (Hess, 2004; Hess & Faarc, 2004; Khairani et al., 2018). The richness of various sites on the internet allows researchers to collect more diverse data, especially now that the use of the internet has been utilized by various studies (Udenze, 2019). This retrospective study was conducted to explore previously published data such as guidelines, news articles, policy documents, and other COVID-19-related artifacts, in order to address the research questions effectively. Then, the processed and analyzed data from the news was visualized with software named Atlas.ti.

This study involves gathering data on the Organizational capacity and policy integration framework for Covid-19 pandemic handling through strategic communication and engaging religious and community leaders to educate society and ethnic groups in Indonesia (Biesbroek & Candel, 2020; Candel, 2021; Capano et al., 2020; Domorenok et al., 2021a; Katz & Byrne, 2019; Maggetti & Trein, 2022; Rayner & Howlett, 2009; Saguin & Howlett, 2022; Trein et al., 2021; Wood & Miller, 2021). Table 1 below displays the dataset that this study used, which was adopted from Karlina et al. (2024).

This research stage includes the process of collecting data from observed variables, namely Organizational capacity and policy integration framework (Domorenok et al., 2021a; Maggetti & Trein,

Table 1. Dataset.

Tat	Scope	Indicators	Data sources
Organizational capacity and policy integration	Level of capacity	• Systemic • Program and plans • Policy instruments • Organizational • Inter-departmental boards or task forces • Individual • Cross-sectoral competencies or specialized training	• Public repository data, e.g. https://peraturan.go.id/; https://www.jdihn.go.id/; https://BPS.go.id • Data period: March 2020–July 2022 • Type of data: Government regulation, guidelines, announcement and official statement
Strategic communication	Cognitive dissonance	• Audience and influencer participation • Knowledge and behavioral change	• Public repository data and public media platforms, e.g. social media, news, etc. • Number and type of violations of social restriction, number of virus transmission • Data period: March 2020–July 2022 • Type of data: text, audio, visual, and surveillance system dashboard

Source. Modified from (Karlina et al., 2024).

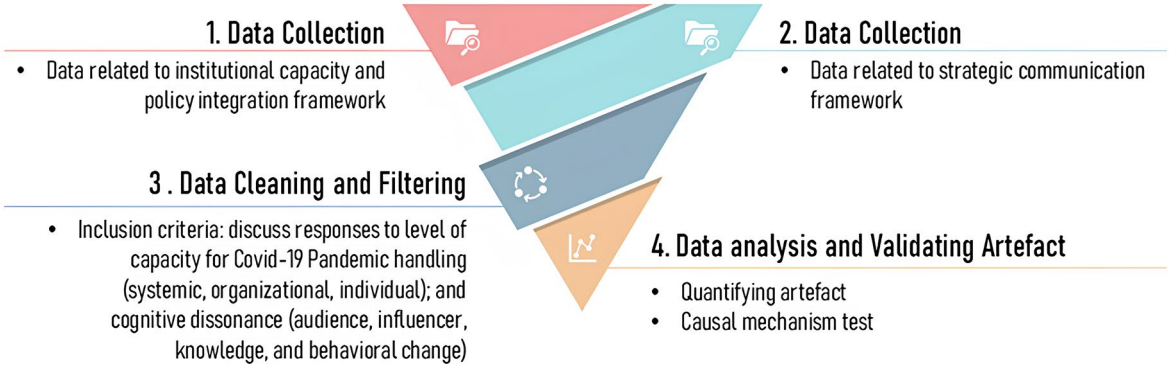

Figure 1. Overview of the sequential research process. *Source*. Modified from (Karlina et al., 2024).

2022; Trein et al., 2019), with the scope of the level of capacity including systemic, organizational, and individual indicators. In addition, strategic communication, with the scope of cognitive dissonance, with indicators of audience and influencer involvement, as well as knowledge and behavioral change, which was modified from Karlina et al. (2024) (see Figure 1). The next stage is to clean and filter the data using inclusion criteria. The data discusses the government's policy response to the level of capacity for handling the Covid-19 Pandemic (systemic, organizational, individual) and cognitive dissonance (audience, influencer, knowledge, and behavioral change). Figure 2 below shows the procedures and steps involved in data collection.

The collected policies were obtained from government-run websites. The available Covid-19 guidelines have been adapted to the ethnic languages in each province. This is done to overcome the language barrier of the community, especially for foreign vocabulary and terms, so that the Ministry of Education and Culture, through the Language Development and Development Agency in collaboration with the Covid-19 Handling Task Force, compiled a book of Behavior Change Guidelines in regional languages based on ethnicity (Ministry of Education and Culture, 2020). Therefore, in this Covid-19 guideline, we refer to sources available in local languages. With the limited references available, the data used follows the information available on the page. And if various sources are found outside of this, we set the inclusion and exclusion criteria as follows Table 2.

This is followed by a causal mechanism test, with a score of four if it includes a straw in the wind, three if it consists of a hoop, four if it contains a smoking gun, and one if it includes doubly decisive (Beach, 2016), as shown in Table 3 below. The policy frame, policy instrument, and strategic communication

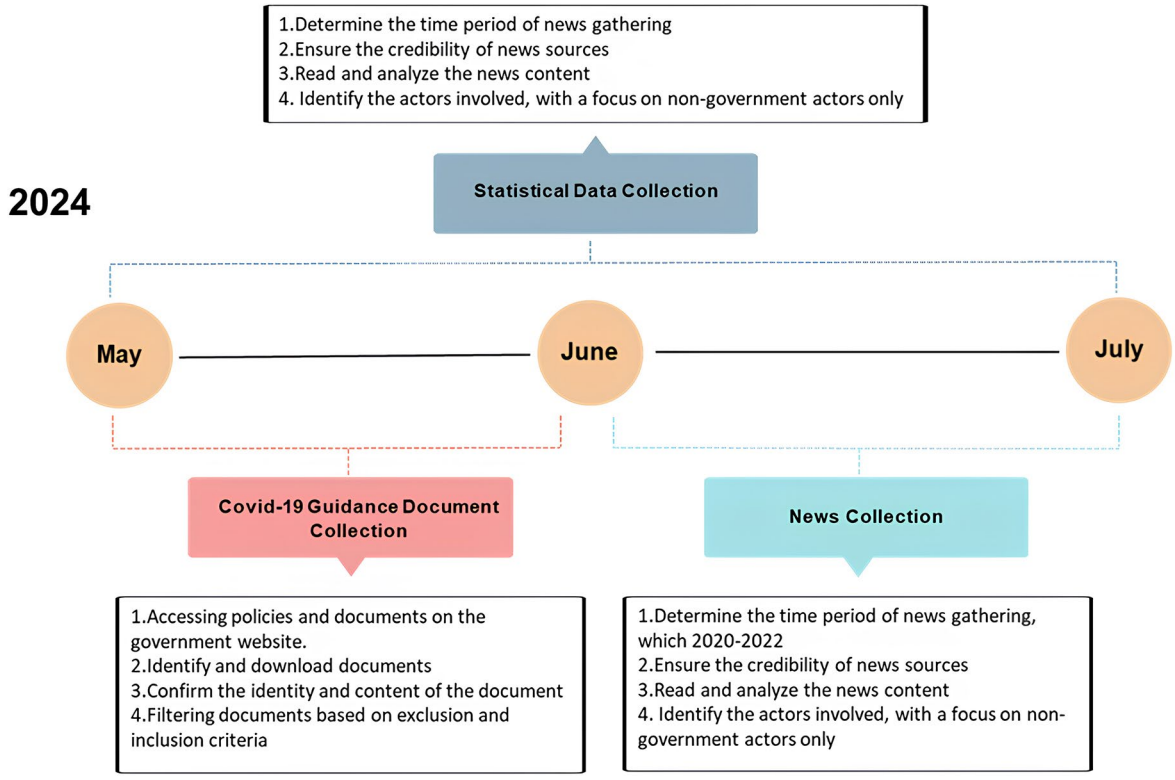

Figure 2. Data collection procedures and steps.

Table 2. Inclusion and exclusion criteria.

Inclusion Criteria	Exclusion Criteria
Have official local language documents	Do not have official local language documents
The document is issued by a government agency	The document is not published by a government agency
The document contains specific instructions for handling Covid-19	Documents do not include specific instructions for handling Covid-19
Can be accessed by the public	Not accessible to the public

Table 3. Scoring classification in causal mechanism test.

Category	Scoring
A straw in the wind	1
Hoop	2
Smoking gun	3
Doubly decisive	4

obtained are then calculated for the causal mechanism test. Each province was assessed based on the availability of documents using the four-point scale presented in Table 3. The assessment is carried out based on whether the predicted data is found, whether there is an alternative if there is none, and whether the evidence found is credible, and is also supported by the inclusion and exclusion criteria that have previously been determined (Beach, 2016).

Additionally, the Case Fatality Rate (CFR), tracking and isolation ratios, frequency of socialization, and dissemination of social distancing education were assessed. It also identifies the number of languages and ethnic and tribal majorities. Finally, data analysis was conducted by chart review and cross-tabulation analysis using IBM SPSS 25 (Ertaş & Kırlar-Can, 2022; Khairani et al., 2018; Samms-Vaughan et al., 2024). With the results of the ethnography quantified using the causal mechanism test, calculations were carried out using SPSS in the cross tabulation analysis feature. The calculation using this statistical method is employed to analyze the relationship between policy guidelines and violation rates. Therefore, the results of this calculation help to observe how policies can be complied with and educate the public in line with the research question, which analyzes the government's capacity to integrate the Covid-19 pandemic policy through communication strategies. In addition, the results of the causal mechanism test

are also visualized in a matrix identifying the evidence that supports policy frames, policy instruments, and strategic communication as shown in Figure 3.

Result

Covid-19 protocol guidelines based on ethnic in Indonesia

Following the announcement of the Covid-19 pandemic crisis, the Indonesian government issued the Decision of the Ministry of Health No: HK.01.07/MENKES/104/2020 on February 4, 2020, as a response (Miftah et al., 2023b). In addition, a temporary team, referred to as the Covid-19 task Force, was established. Each regional leader was assigned duties as outlined in Presidential Decree Number 7 of 2020, which pertains to the Covid-19 Response acceleration Task Force. This team enacted strategic policies that granted each region autonomy to customize their approach in accordance with the overall guidance set forth by the central government policy (Miftah et al., 2024). Local governments are tasked not only with adapting and completing their tasks but also with fostering organizational resilience, typified by 'immune' or 'strong' qualities in crisis management (Duchek, 2020).

Therefore, the Covid-19 task force issued 3 M Behavior Change Guidelines (Wearing Masks, Maintaining Distance, Washing Hands), which were translated into 107 languages and dialects from 100 large ethnic groups in Indonesia to change people's behavior and curb the rate of virus transmission (Kompas, 2020; MCIT, 2020).

The pandemic has emphasized the significance of transparent, precise, and widespread communication to control disease transmission. Nevertheless, numerous programs have been unsuccessful in adequately tackling the additional difficulties presented by multilingualism. The presence of linguistic hurdles has been a considerable challenge in terms of disseminating accurate information and addressing the absence thereof regarding the crisis (Civico, 2021). The pandemic has compelled governments worldwide to confront numerous long-standing concerns, including the realm of communication. It is necessary to establish policies that guarantee inclusive multilingual communication during emergencies in order to prevent significant disparities.

The results show that Indonesia is an exceptional example of a wide range of ethnic and linguistic differences. The nation consists of more than 17,000 islands and is inhabited by over 200 ethnic groups who speak more than 300 distinct languages as shown in Figure 4. This diversity is a consequence of Indonesia's extensive geographical spread, spanning across the Pacific and Indian Oceans. While most local languages belong to the Austronesian-language family, there is also a significant population, particularly in eastern Indonesia, who speak unrelated Papuan languages. Additionally, the presence of Indonesians of Chinese, Arab, and Indian descent, each constituting less than 3% of the total population, further enriches diversity.

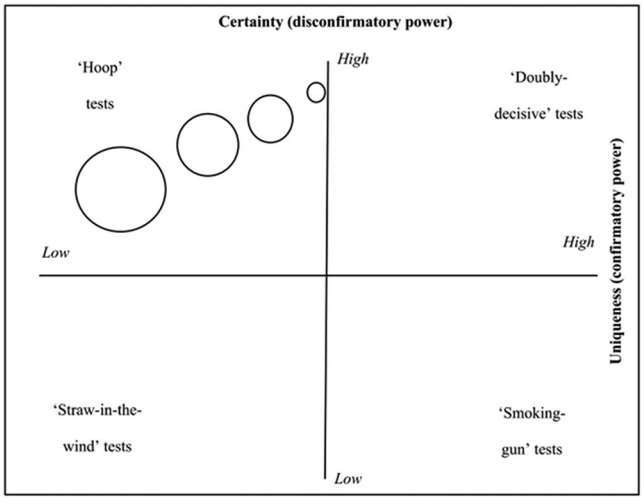

Figure 3. Types of tests of causal mechanism. *Source*. Beach and Pedersen (2013).

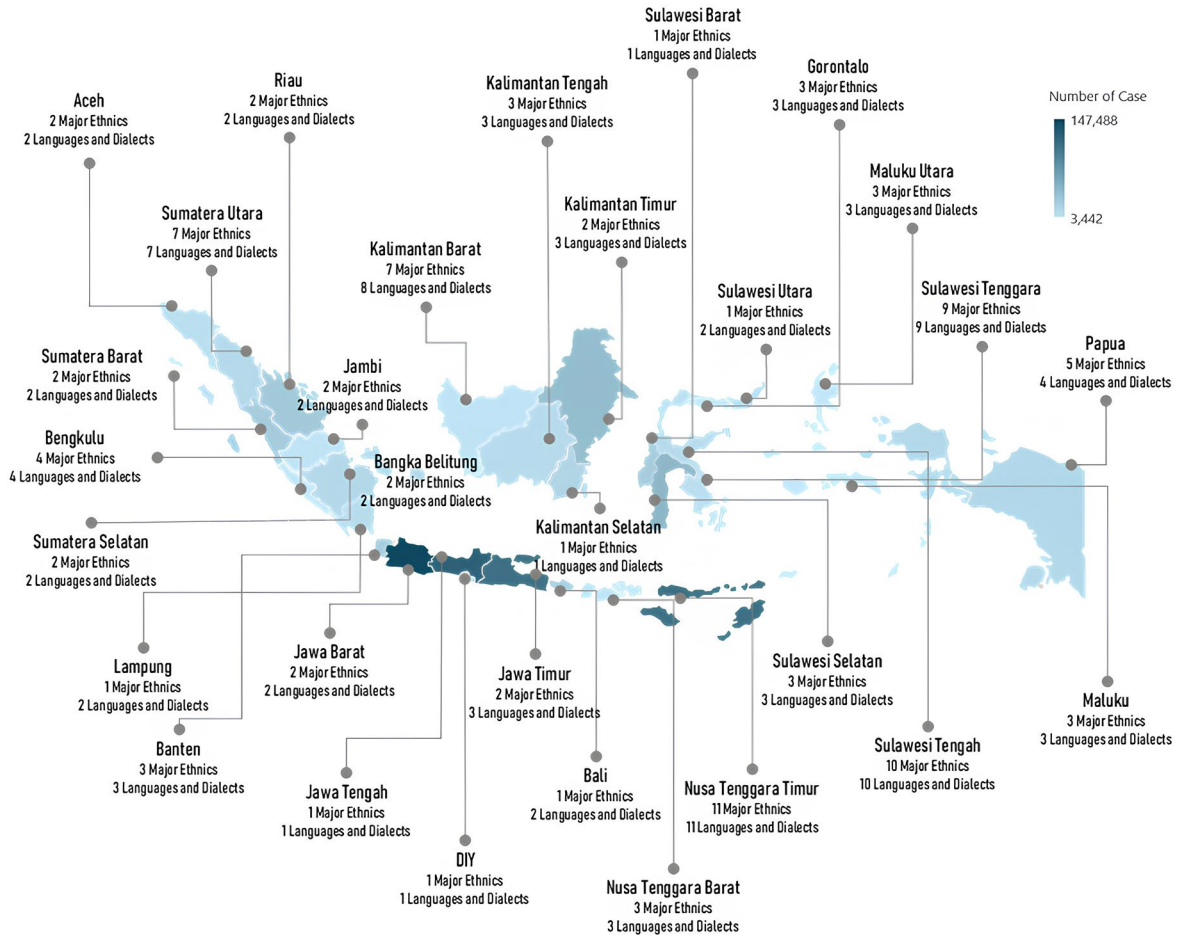

Figure 4. Distribution of the number of ethnicities and languages & dialects based on provinces in Indonesia.

The Covid-19 pandemic has highlighted the critical role of language and communication in public health and policy. This underscores the need for inclusive, multilingual communication strategies to ensure that vital health information reaches all communities regardless of language proficiency. This is not only crucial during a pandemic but also for general healthcare and policy implementation.

During the Covid-19 pandemic, the transmission of the virus in Indonesia escalated quickly in urban areas, particularly in cities such as Bandung, which possess distinctive features impacted by factors such as city planning, population density, and high levels of urban mobility (Miftah et al., 2019, 2021; Sutriadi & Miftah, 2020). Figure 4 illustrates that each province in Indonesia has distinct ethnic groups and languages. The greater the number of major ethnic groups in a province, the more diverse its languages and dialects tend to be. The island of Java showed the most significant virus transmission, specifically in DKI Jakarta, West Java Province, Central Java, East Java, and Banten Province. Nevertheless, the level of linguistic and ethnic variety in this province was comparatively lower than that in other provinces as shown in Figure 4.

Java is an island inhabited by seven major ethnicities with various languages and dialects, such as the Javanese Banten dialect, Sundanese Banten dialect, Betawi, Javanese Krama, Javanese Cirebon-Indramayu, Sundanese, Javanese Tegal dialect, Madura, Javanese Surabaya dialect, and Banyuwangi. The major ethnic groups, their languages, and titles of the Covid-19 guidelines in Indonesia are shown in Appendix A.

Causal mechanism test using crosstab analysis

Regional governments at the provincial, district, and city levels on the island of Java tend to be more established than governments outside the island of Java in terms of human resources, system support, and accessibility. Policy integration, such as policy frames and instruments, as well as strategic communications, tends to be more diverse and supported by various media.

This can be seen from the category of artifacts from the province and the Covid-19 Task Force on the island of Java, which tended to fall into the doubly decisive category with a score of 3 and smoking gun with a score of 3 (see Table 4). In Table 4 at the collumn titled 'Policy Instrument' adopted from Karlina et al. (2024). Nevertheless, the island of Java, specifically East Java Province, reported the highest number of social distancing breaches and health violations related to limits on population movement, with 1.2 million violations. West Java followed behind with 637 thousand violations. Artifacts regarding policy integration and strategic communication were also found, which can be seen in Figure 5. In addition, to see the relationship with population, density, number of violations, and community compliance based on province, this can be seen in Table 5.

The following is a Table 6 showing the average number of Covid-19 guidelines, the number of violations, compliance, and cases in provinces in Indonesia. Although there are various Covid-19 guidelines that accommodate various regional languages, violations of health protocols still occur.

The following is a cross tabulation analysis between policy instruments, policy frames, and strategic communication on the number of violations based on the provinces in Indonesia. The analysis was conducted using the IBM SPSS software. The causal mechanism test result visualized in Figure 6. Also, cross tabulation analysis of policy instruments, policy frames, and strategic communications are shown in Table 7.

Based on these tables, the asymptotic significance (2-sided) values of the three variables—policy instrument, policy frame, and strategic communication—are 0.635, 0.516, and 0.353, respectively, which are greater than 0.05. The findings indicate that policy instruments, policy frames, and strategic communication do not individually provide sufficient strength in influencing policy compliance. The severity of environmental violations seems to be better explained by enforcement mechanisms along with public trust and socio-economic conditions than by policy frames and communication efforts or instrument choice.

Table 4. Results of scoring causal mechanism test on policy instrument, policy frame, and strategic communication Based on provinces in Indonesia.

No.	Province	Policy instrument	Code	Policy frame	Code	Strategic communication	Code
1	Aceh	3	BL.PI3	3	BL	3	BL
2	Bali	3	DK	4	DK	3	DK
3	Banten	3	A	4	A	4	A
4	Bengkulu	4	BD	4	BD	4	BD
5	D.I. Yogyakarta	4	AB	4	AB	3	AB
6	Gorontalo	4	DM	3	DM	3	DM
7	Jambi	3	BH	4	BH	4	BH
8	Jawa Barat	4	D	4	D	4	D
9	Jawa Tengah	4	H	4	H	3	H
10	Jawa Timur	4	L	4	L	3	L
11	Kalimantan Barat	4	KB	4	KB	3	KB
12	Kalimantan Selatan	3	DA	3	DA	3	DA
13	Kalimantan Tengah	4	KH	3	KH	3	KH
14	Kalimantan Timur	4	KT	4	KT	3	KT
15	Kepulauan Bangka Belitung	3	BN	4	BN	3	BN
16	Kepulauan Riau	4	BM 2	3	BM 2	3	BM 2
17	Lampung	3	BE	3	BE	4	BE
18	Maluku	4	DE	3	DE	3	DE
19	Maluku Utara	3	DG	3	DG	4	DG
20	Nusa Tenggara Barat	3	DR	4	DR	3	DR
21	Nusa Tenggara Timur	4	EB	4	EB	3	EB
22	Papua	3	PA	3	PA	3	PA
23	Riau	4	BM 1	4	BM 1	4	BM 2
24	Sulawesi Barat	3	DC	3	DC	4	DC
25	Sulawesi Selatan	4	DD	3	DD	4	DD
26	Sulawesi Tengah	4	DN	4	DN	3	DN
27	Sulawesi Tenggara	4	DT	3	DT	3	DT
28	Sulawesi Utara	3	DB	3	DB	4	DB
29	Sumatera Barat	4	BA	4	BA	4	BA
30	Sumatera Selatan	4	BG	3	BG	3	BG
31	Sumatera Utara	4	BB	3	BB	4	BB

Source. Data in the collumn titled 'Policy Instrument' adopted from (Karlina et al., 2024).

Figure 5. Policy Integration and Strategic Communication Artefact titled 'Tuntutan Puahanparisolah – Health Protocol October 2020 in Balinese (Bali Province)'.

Compliance with health protocols and guidelines reduces the spread of COVID-19 (Shanka & Gebremariam Kotecho, 2023). Beyond government policies that have been issued, socio-psychological factors such as subjective norms, awareness, responsibility, and perception also influence this compliance (Shanka & Gebremariam Kotecho, 2023). On the other hand, active community participation is essential to strengthen adherence to public health education (Miftah et al., 2025). Finally, an equally important factor is public trust in the government, which reinforces compliance by fostering respect for regulations as the outcome of governmental functions (Lo Presti et al., 2022)

Health education during covid-19 by non-governmental parties

Based on 28 news documents collected at the national level, West Java Province, to the smallest level, Bandung City, it is known that non-governmental parties support health education, especially in handling the Covid-19 pandemic in Indonesia, as shown in Figure 7. The news was published in the period 2020–2022. There is also a word cloud analysis that looks at the highest frequency of words appearing in the news, which can be seen in Figure 8. There are at least 16 parties that support health education, including religious organizations and local communities.

1. National Level
   At the national level, there are nine parties involved in health education during Covid-19, namely Confucian figures, Buddhist figures, Catholic figures, Christian figures, the Head of Mandiri Institute,

Table 5. Population, population density, violation, percentage of compliance, and percentage of social distancing compliance based on provinces in Indonesia.

No.	Province	Population (thousand of people)	Population density (people/km^2)	Violation (case)	Percentage of mask compliance (%)	Percentage of social distancing compliance (%)
1	Aceh	5.554,80	98	11.449	90.26	91.33
2	Bali	4.433,30	793	16.289	98.29	96.34
3	Banten	12.431,40	1.329	2.833	88.39	88.77
4	Bengkulu	2.112,20	105	1.500	81.89	77.66
5	D.I. Yogyakarta	3.759,50	1.186	12.154	94.44	91.55
6	Gorontalo	1.227,80	102	2.459	76.97	72.45
7	Jambi	3.724,30	76	22.895	84.15	81.87
8	Jawa Barat	50.345,20	1.359	637.102	86.46	84.31
9	Jawa Tengah	37.0.892,3	1.104	3.665	88.35	84.94
10	Jawa Timur	41.814,50	870	1.216.236	92.48	89.41
11	Kalimantan Barat	5.695,50	39	10.878	85.04	85.83
12	Kalimantan Selatan	4.273,40	115	18.450	73.71	52.91
13	Kalimantan Tengah	2.809,70	18	15.672	98.12	95.93
14	Kalimantan Timur	4.045,90	32	22.345	86.95	86.09
15	Bangka Belitung	1.531,50	92	7.890	72.44	68.71
16	Kepulauan Riau	2.183,30	264	12.345	93.10	91.38
17	Lampung	9.419,60	281	18.472	91.11	90.19
18	Maluku	1.945,60	42	10.234	80.26	77.29
19	Maluku Utara	1.355,60	41	6.890	14.49	14.49
20	Nusa Tenggara Barat	5.646,00	287	15.345	82.88	84.63
21	Nusa Tenggara Timur	5.656,00	122	12.789	88.83	86.15
22	Papua	1.060,60	13	14.234	78.80	77.49
23	Riau	6.728,10	75	13.876	89.80	91.32
24	Sulawesi Barat	1.503,20	91	8.543	97.06	99.14
25	Sulawesi Selatan	9.463,40	209	24.321	86.59	83.12
26	Sulawesi Tengah	3.121,80	51	18.234	74.82	84.24
27	Sulawesi Tenggara	2.793,10	77	12.789	80.13	80.83
28	Sulawesi Utara	2.701,80	186	15.678	85.20	79.37
29	Sumatera Barat	5.836,20	139	21.324	93.00	91.83
30	Sumatera Selatan	8.837,30	102	24.321	84.78	83.89
31	Sumatera Utara	15.588,50	215	34.456	82.35	84.35

Table 6. Average of number of covid-19 guidelines, number of violation, percentage of compliance, and cases in Indonesia provinces.

Average of each province	Number of covid-19 guideline (dosument)	Number of violation (case)	Percentage of mask compliance	Percentage of social distancing compliance	Number of confirmed cases (people)	Number of death cases (people)
	3	73086	83.91%	82.19%	21.622	646

Hindu figures, Islamic figures, Muhammadiyah, and Nahdlatul Ulama as shown in Figure 7. Figures from the six religions in Indonesia played a role in providing emotional and spiritual support through joint prayer activities. In addition, during the implementation of vaccination activities in Indonesia, they participated in providing examples and educating the public about the importance of vaccines and preventing the spread of the virus. Islamic religious organizations, namely Muhammadiyah and Nahdlatul Ulama, also participated in this. For example, Muhammadiyah with education on the implementation of homecoming during the pandemic, socialization of vaccination activities, restrictions on worship activities by performing prayers in congregations at the mosque and not at home, and helping to provide 15 hospitals to treat positive Covid-19 patients. Nahdlatul Ulama (NU) also implemented programs or policies that were not very different from Muhammadiyah. In 2021, these programs and policies were regulated in a circular manner regarding emergency social restrictions in response to the increasing number of Covid-19 cases in various regions of Indonesia. In addition, there are also other actors, namely the Head of the Mandiri Institute Indonesian National Youth, who stated that the 2021–2022 Covid-19 pandemic has become a challenge for Indonesia.

2. West Java Provincial Level

At the West Java Provincial level, four parties are involved in the community to provide health education. Two of them are religious organizations: Muhammadiyah and Nahdlatul Ulama as shown in Figure 7. Both organizations carry out programs, such as mass vaccinations and appeals to comply

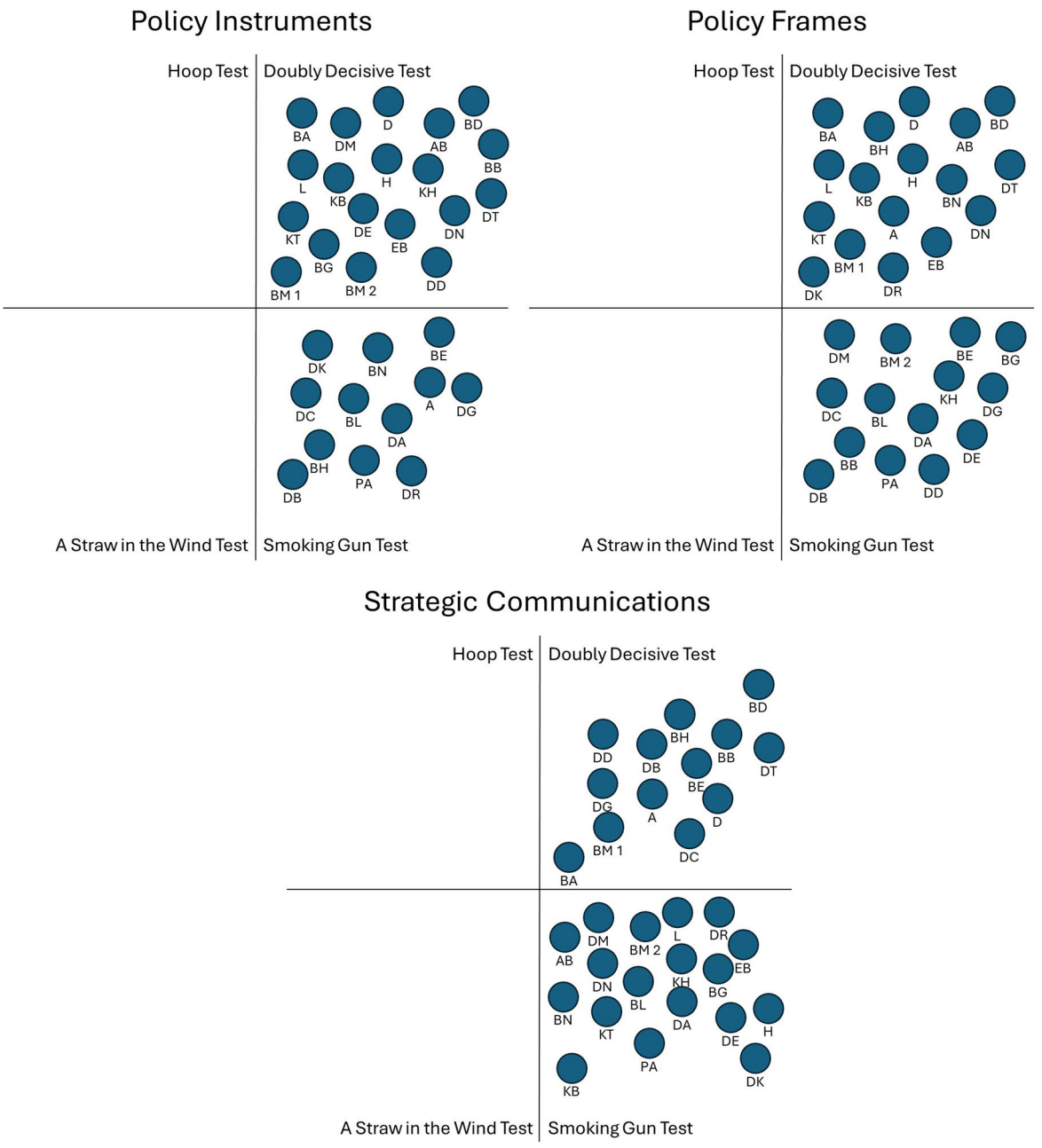

Figure 6. Casual mechanism test matrix.

with health protocols. In addition, an automotive community provides basic food assistance and personal protective equipment to affected communities in the form of basic food. On the other hand, the Regional Scout Organization conducts activities, such as spraying disinfectants and educating them on the implementation of physical distancing.

3. Bandung City Level

There are six parties other than the government involved in health education in handling the Covid-19 pandemic in Bandung City. These parties are the automotive community, disabled community, empowerment community, Indonesian National Youth Committee, school alumni association, and UPI Student Regiment as shown in Figure 7. The majority of activities were carried out in the form of providing assistance to residents affected by Covid-19. In addition, a vaccination program is carried out by the UPI Student Regiment. In addition, religious figures in Bandung held virtual prayers to ensure the safety of the city.

Table 7. Cross tabulation analysis and Chi-Square test policy instrumens, policy frame, and strategic communication to number of violence.

		Violation				
		Low	Medium	High	Very high	Total
Policy Instrument	Smoking gun	4	5	3	0	12
	Doubly decisive	5	6	6	2	19
Total		9	11	9	2	31
Pearson Chi-Square	Asymptotic Significance (2-sided)					0.635
Policy Frame	Smoking gun	4	6	5	0	15
	Doubly decisive	5	5	4	2	16
Total		9	11	9	2	31
Pearson Chi-Square	Asymptotic Significance (2-sided)					0.516
Strategic Communication	Smoking gun	5	9	4	1	19
	Doubly decisive	4	2	5	1	12
Total		9	22	9	3	31
Pearson Chi-Square	Asymptotic Significance (2-sided)					0.353

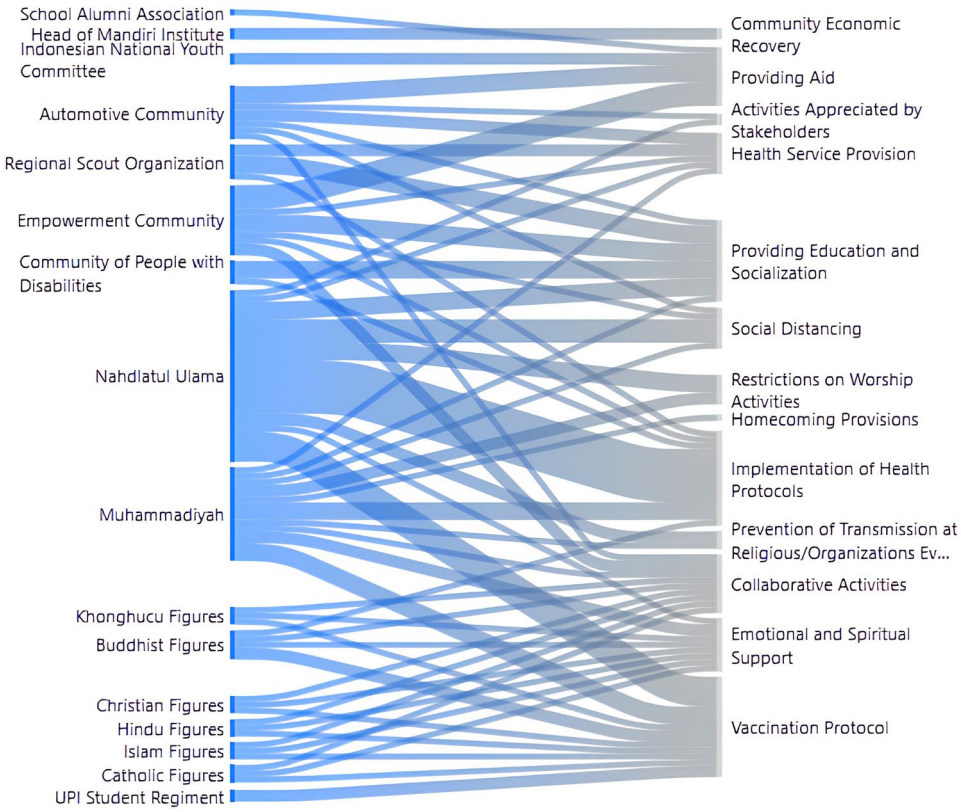

Figure 7. Support from non-governmental parties in health education and handling the Covid-19 Pandemic in Indonesia, West Java Province, and Bandung City.

From the 28 news stories collected, a word cloud visualization of the news narratives was created. The visualization is presented below.

Discussion

Breaking barriers in ethnic health education

Based on research conducted by Shrivastava and Misra (2015), it was stated that health education guidelines available in other countries or generally internationally can be adapted to certain countries, but need to be adjusted to the ethnic specifics in that place, for example, in terms of lifestyle and availability

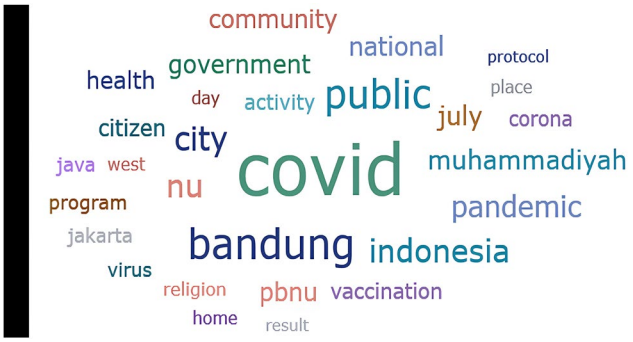

Figure 8. Word cloud of news support from non-governmental parties for health education and handling the covid-19 pandemic in Indonesia, West Java Province, and Bandung City.

of health facilities. On the other hand, the use of language in guidelines disseminated to the community needs to consider ethnic variations, especially in terms of language, so that marginalized groups can still obtain this information (Lakhanpaul et al., 2014; Mehta et al., 2023). This language barrier can interfere with the health education process because it can result in significant communication errors (Brogan-Hewitt et al., 2021; Singh et al., 2002). The use of culturally appropriate language in health education is an effort to support community compliance in the midst of a health crisis (Ryan et al., 2023).

In addition, information that can be freely obtained by the public through social media cannot stem from the level of misinformation and will increase when incorrect information is spread (Abascal Miguel et al., 2024; Higginbottom et al., 2014). The increase in content about Covid-19 on social media requires supervision in the form of fact-checking and increasing information (Abascal Miguel et al., 2024). Apart from the challenges of using language, the process of disseminating information from credible sources has become another challenge that must be overcome (Feinberg et al., 2021). Moreover, the use of language in content that is different from the native language of viewers can lead to greater misinformation (Abascal Miguel et al., 2024; Higginbottom et al., 2014). Therefore, the government must provide credible guidelines to the public.

However, the selection of the dissemination channels is also important. To increase public compliance with the designed guidelines, it is necessary to use easily accessible dissemination methods such as direct distribution, virtual demonstrations, videos, and written materials (Cheney et al., 2023). These channels are supported by the development of technology and information that allows for wider dissemination of education to achieve several goals, namely increasing the dissemination of information, involving the community/patients who can give them control over their own health, and increasing awareness for the prevention of infectious diseases (Arghittu et al., 2021). The selection of familiar channels can increase the effectiveness of health education goals (Thongseiratch et al., 2024). In addition, the development of two-way communication involving the community to disseminate information during a health crisis begins with the determination of uncertain conditions, then regularly and gradually provides various health protocols introduced to the community (Ryan et al., 2023). The formation of a stakeholder network to disseminate information can reduce chronic impacts and increase access to health education (Cheney et al., 2023). Communication with the public needs to be carried out consistently, based on clear information, using various formats and channels (Ryan et al., 2023).

The guidelines issued by the government, along with directives from relevant stakeholders, were intended to address cognitive dissonance. The psychological discomfort caused by cognitive dissonance serves as a bridge to minimize the compliance gap, as cognitive control and perceptions of COVID-19 play a significant role in influencing public compliance (Balsamo et al., 2022). When individuals experience cognitive dissonance, they may or may not adjust to the information they receive. If the information is accepted, the compliance gap can be reduced; otherwise, the gap may persist. Therefore, with the high number of guidelines and policies issued during the pandemic, an effective communication strategy is essential to ensure that the intended goals are achieved.

This condition occurred in Java, where the number of policies issued was relatively high compared to other regions, yet the violation rate was also significant. This is largely due to the economic sector being

severely affected by the pandemic in Indonesia's most populous and densely populated island, forcing many residents to continue working as usual, even if it meant violating established regulations (Yazid & Karman, 2024). Another study focusing on the provinces of DI Yogyakarta and Central Java also highlighted that not only workers, but also students committed violations, with the most common infractions involving mobility and social distancing (Daniel et al., 2022). These findings suggest that a high volume of policies does not necessarily correlate with high compliance, particularly in regions under considerable socio-economic pressure, such as Java.

Based on the results of cross tabulation analysis, which indicate that policy instruments, policy frames, and strategic communication do not individually provide sufficient strength in influencing policy compliance. This is because there are other factors that have not been taken into account in this study. For example, based on research conducted by Chen et al. (2024), it shows that public compliance with health policies during the pandemic is also influenced by public trust in the government. In addition, risk perception is also another contributing factor, the higher the public's risk perception of the virus, the higher the compliance (Kim et al., 2024). This is quite interesting, because when Covid-19 first emerged to the public, the Indonesian people tended not to consider the pandemic as something threatening, so daily activities were carried out as usual, which was ultimately counted as a violation of health protocols. Finally, the main demand that inevitably requires people to 'violate' is the need to continue working and earning money, especially for the informal sector (Imam & Uddin, 2022). These are some of the factors outside of policy instruments that affect public compliance with health policies during the Covid-19 pandemic.

Health education with local values and priorities

The results of this study show that other variables influence violations during Covid-19. For example, habits that have formed over the years, strong religious beliefs, and certain cultural beliefs and norms that are difficult to change in a short time. Studies have shown that habit strength predicts adherence to preventive measures like physical distancing and hand washing, with habit formation more evident in physical distancing behaviors (Zhang et al. 2022). The interaction between habit and behavioral intention can strengthen behavior-intention consistency for preventive actions. Recognizing the habitual nature of health behaviors has implications for intervention strategies; potentially focusing on modifying environmental stimuli rather than promoting consciously mediated change (Gardner et al., 2019). habits such as gathering with extended family or close friends at various social events are one of the causes of violations, even though there is a ban on gathering.

Other factors, such as economic pressures forcing people to work outside the home, social pressure from communities, inaccurate or misleading information about the virus, and social restrictions, also contributed to violations.Studies from Thailand reveal that these workers experienced dramatic income reductions, job losses, and increased debt (Komin et al., 2021). The informal sector's vulnerability to COVID-19 is further exacerbated by crowded working conditions and limited access to healthcare (Nguimkeu & Okou, 2020). Government measures to contain the virus, such as lockdowns and curfews, disproportionately affecting informal workers who lack social protection and rely on daily earnings (Sene, 2023).

Based on the results of the crosstab analysis, it is shown that policy frames, policy instruments, and strategic communication do not influence the level of violations of health protocols, as there are many other factors beyond these three aspects. In relation to the role of religious leaders, as revealed from the analysis of news narratives, they also contribute to strengthening public compliance by assisting in the dissemination of policies. Religious leaders have recognized their unique role in promoting health protocols, communicating information, and helping to dispel myths during the COVID-19 pandemic (Ayub et al., 2023). Thus, during times of crisis, religious leaders also function as influencers of the perceptions and behaviors of their communities (Ayub et al., 2023; Fauk et al., 2022). In addition, in Indonesia, particularly among Muslim communities, the authority of fatwas plays a central role in mediating between state regulations and the religious aspects of society (Taufiq et al., 2025). Overall, the level of religiosity and trust in religious leaders is relevant to enhance compliance with health guidelines and the acceptance of public health messages (Cherniak et al., 2023).

Culture is a multidimensional set of beliefs and ideologies in society that is passed down from generation to generation (Afaya et al., 2024). Cultural and religious values sometimes lead to misconceptions about health conditions in society by considering illness as a punishment from God and something that only needs to be treated traditionally, not medically (Afaya et al., 2024; Petersen et al., 2022). Religious and cultural beliefs contribute to hesitation in choosing actions that need to be taken for health conditions (Thongseiratch et al., 2024). This is not without reason because cultural beliefs are the main point in the decision-making process of a number of community groups in choosing health actions in the community (Afaya et al., 2024).

Based on reports gathered at the national, provincial, and city levels, with Bandung City serving as a point of reference, it is evident that such conditions were not unique to Bandung but also reflected broader patterns in other regions across Indonesia. For example, the involvement of religious leaders was not limited to West Java Province or Bandung City. Religious figures played key roles by organizing communal prayers, encouraging public compliance, issuing religious fatwas (convictions) to enforce adherence to health protocols, providing guidance on COVID-19 funeral management, and adapting religious practices to pandemic conditions (Lakonawa et al., 2023; Nurhayati & Purnama, 2021). In several regions of Indonesia, actors from the private sector, non-governmental organizations, and civil society were also actively involved in supporting COVID-19 response efforts.

Under the conditions described earlier, the role of religious leaders is very important. For example, acceptance of the MMR (Measles, Mumps, and Rubella) vaccine in the Thai community is significantly influenced by religious practices and religious leaders (Thongseiratch et al., 2024). Meanwhile, in other countries such as Ethiopia, (Buchanan & Pose, 2012) Orthodox and Islamic religious leaders strengthen health education through delivery in weekly sermons/prayers, integrating positive behavior into religious stories, calculating vaccination results, deaths, and diseases that occur on community data boards as an effort to end the irrelevant traditional medicine system. By integrating actors from the community, health workers and religious leaders can resonate with the cultural and religious values adhered to by the community and play a central role in the success of health education (Petersen et al., 2022; Thongseiratch et al., 2024). Health education needs to be designed by adapting sociocultural and religious values that are beneficial to the community (Msoka et al., 2019).

Policy implications for future pandemic

The results of the study show that policy instruments have not determined the level of public compliance. So the role of policy socializers is as important as the role of policy makers. A well-drafted policy document requires public attention and awareness so that it can be implemented effectively. Although policy guidelines have been adjusted to local languages, the public is not necessarily aware of their existence. In addition, uncertainty during the pandemic has led to policy revisions that can confuse the public and reduce compliance levels. Therefore, future policies need to be adaptive and build the perception that the outbreak is a common threat, so that the policies implemented remain flexible in dealing with uncertain situations.

The analysis revealed that religious leaders play a significant role in conveying COVID-19 protocols and guidelines to the public. This finding implies that their perspectives should be considered in policy design, particularly in integrating medical and academic protocols into religious practices. Furthermore, religious leaders are also instrumental in disseminating these policies at the community level.

On the other hand, community leaders can offer valuable insights to the government in shaping more personalized guidelines that resonate more effectively with the public. While current guidelines have already been translated into local languages and made available on official government websites, future efforts could focus on distributing them through more mainstream and accessible local channels. Involving these two key stakeholders aims to foster adaptive, flexible, and well-targeted policy.

Conclusions

This study shows that the level of violations cannot be entirely suppressed by the available policy instruments, even during the pandemic. Nonetheless, there are also other stakeholders who are non-governmental

organizations, religious bodies, communities, professionals, and hobby organizations to support health education in some ways as well. Such support entails the development of information, health facilities/needs, and other regulations that enhance government-formulated policies. However, the value-affecting economic, social, cultural, and religious aspects are embraced by the community relay with existing policies. This includes many workers in the informal sector still working because they need to survive, and the practice of homecoming during Eid al-Fitr still transpires despite religious leaders' call to embrace health measures.

Thus, while the language barrier in health education has been transformed in Indonesia by adapting guidelines to other ethnic groups' languages, other cultural and social issues exist. Cultural customs should complement the overall regulations that are set aside to enhance health standards to ensure that people are protected, which God places into consideration. Community-oriented, culturally appropriate, and involving religious leaders can enhance health communication and community obedience. However, even after the intervention of non-governmental organizations, economic, social, and cultural factors remain influential in policy implementation. Consequently, health policies should be sensitive to the socioeconomic status of the community and engage others, such as the leadership of the communities and religious bodies, among others, in efforts aimed at controlling the pandemic.

From the results of the research conducted and by considering policy implications for future pandemics, policymakers need to take actionable steps that can be taken, such as building public trust, creating campaigns that target all levels of society, and utilizing local communities with great influence in the community to disseminate policies.

In particular, increasing public compliance with health policies, especially those that are protective and restrictive, requires integrated efforts. Policies made need to be adaptive but still consistent so that they are not ambiguous and doubtful for the public. So that people have a dilemma about which rules need to be obeyed, this is a lesson learned from the Covid-19 pandemic that occurred last time. In addition, the government is not the sole actor in this case, but rather a central actor so that it is possible to engage with other actors so that they feel involved and contribute to health policy.

The contribution of this research to the field of health policy and communication, especially those related to each other, namely the effectiveness of policy communication on public compliance. The use of language, where to access the policy, and policy socialization are vital to ensure that the policy is well implemented. Therefore, this research shows that other aspects need to be improved and studied to find out what affects compliance.

Meanwhile, this study contributes to the literature by demonstrating that the quantity of policies alone does not necessarily determine public compliance, as compliance is shaped by multiple factors, including economic and social conditions. Furthermore, the study underscores the vital role of local actors, such as religious and community leaders in fostering adherence. In the broader global context, it extends the discourse on policy implementation at the grassroots level and emphasizes the significance of cultural dimensions in internalizing health protocols to enhance public compliance.

Limitation and future research directions

Other variables were not analyzed in this study. With that, further research can analyze other variables, such as community habits, cultural practices, and religious values. As this study focuses on Indonesia, further research can be conducted in other countries, such as comparative studies on handling the Covid-19 pandemic.

There is a potential bias where we also use data from the news so there is a chance of bias in the selection of news to be analyzed in terms of identity and news content. However, to avoid this, we have established procedures for collecting the data. Since policy integration is currently one of the thriving concepts, future studies on the integration of policy, culture, and public health systems are an opportunity. Especially with the various cultures that exist in the world, comparative studies can be an approach that can be used. In addition, there is a potential bias in generalizing the context of West Java Province and Bandung City to the national level, considering the diverse characteristics of each region in Indonesia. Therefore, future studies are recommended to involve more provinces and cities to obtain a more comprehensive and representative understanding in the national context.

Acknowledgement

The authors gratefully acknowledge the Departement of Public Administration, Faculty of Social and Political Sciences of Universitas Padjadjaran; Applied Science Department, School of Vocational Studies, Universitas Padjadjaran; Department of Social and Development Sciences, Faculty of Human Ecology, Universiti Putera Malaysia; and all researchers from Quadran Energi Rekayasa, Research Group for Management and Policy Studies.

Authors contributions

CRediT: **Nina Karlina**: Conceptualization, Data curation, Formal analysis, Methodology, Project administration, Resources, Supervision, Validation, Writing – original draft, Writing – review & editing; **Ahmad Zaini Miftah**: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Resources, Software, Writing – original draft, Writing – review & editing; **Ida Widianingsih**: Conceptualization, Formal analysis, Funding acquisition, Project administration, Supervision, Validation, Writing – review & editing; **Sarjit Singh Gill**: Conceptualization, Data curation, Resources, Supervision, Validation, Writing – review & editing.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Ethical Statement

The Research Ethics Committee of Padjadjaran University has approved this research with Letter Number 1035/UN6. KEP/EC/2024 and Registration Number 2407071039.

Funding

The APC was funded by Universitas Padjadjaran.

About the authors

Nina Karlina is a lecturer and head of the Public Administration Study Program at the Faculty of Social and Political Sciences, Padjadjaran University. She earned her doctorate from the same university, with expertise in public organizations, especially organizational change and restructuring, innovation, cultural internalization, organizational capacity, and organizational resilience.

Ahmad Zaini Miftah is affiliated with the Applied Science Department, School of Vocational Studies, also the Public Administration Department of the Faculty of Social and Political Sciences, Universitas Padjadjaran (Unpad). He is also a researcher at the Center for Decentralization and Participatory Development Research (CDPD), Unpad, and the Quadran Energi Rekayasa, AP Research Group in Bandung, Indonesia. His research interests include policy integration, development studies, health policy and data visualization.

Ida Widianingsih is a professor of international development administration at the Public Administration Department, Faculty of Social and Political Sciences, Universitas Padjadjaran (Unpad), Indonesia and holds a PhD from Flinders Institute of Public Policy and Management, Flinders University, Australia.She is a senior researcher and executive director of the Center for Decentralization and Participatory Development Research (CDPD) at Unpad. She is also a contract-based consultant and trainer for various institutions, including the World Bank, ADB, AusAID, CIDES, CIRDAP Bangladesh, CSSTC NAM Center and the UNSSC, Turin, Italy. Her research interests relate to public administration and development issues, inclusive development policy and participatory governance.

Sarjit Singh Gill is Professor of Social Anthropology at the Faculty of Human Ecology, Universiti Putra Malaysia (UPM). The main thrust of his expertise in the social development of minority communities in Malaysia. Sarjit has also been referred to by various ministries, agencies, local communities, and special interest groups. Presently he serves as an Editor-in-Chief of Malaysian Museums Journal, Dept. of Museum Malaysia and several Editors Board Members including Asian People Journal published by University Sultan Zainal Abidin (UniSZA), Jurnal Kinabalu published by Universiti Malaysia Sabah (UMS), and Journal of Technical and Social Sciences, Sultan Salahuddin Abdul Aziz Shah Polytechnic, Selangor.

ORCID

Nina Karlina http://orcid.org/0000-0003-3779-1697
Ahmad Zaini Miftah http://orcid.org/0000-0001-5711-4031
Ida Widianingsih http://orcid.org/0000-0003-2472-5236
Sarjit Singh Gill http://orcid.org/0000-0003-3689-8468

Data availability statement

The data that support the findings of this study are available from the corresponding author upon reasonable request for reproducibility purposes.

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Appendix

Appendix A. Major ethnic group and their languages.

Province	Ethnic groups	Language and dialects	Guidelines
Aceh	Aceh	Aceh	Peudoman Ubah Tabiat
	Gayo	Gayo	Pedoman Perubahan Buet
Bali	Bali	Bali	Tuntunan Pauahan Parisolah
		Bali Dialek Bali	Tuntunan Ngesehin Laksana
Banten	Betawi	Betawi Tangerang	Patokan Perobahan Kelakuan
	Jawa Serang	Jawa Dialek Banten	Pedoman Ngubah Laku-Lampah
	Sunda Banten	Sunda Dialek Banten	Padoman Parobahan Kalakuan
Bengkulu	Lembak	Lembak	Pedoman Perubahan Perilaku
	Melayu Bengkulu	Melayu Bengkulu	Pedoman Perubahan Perilaku
	Rejang	Rejang	Totoa Mubeak Cao
	Serawai	Serawai	Caro Ngubah Perilaku
D.I. Yogyakarta	Jawa	Jawa Krama	Paugeran Ewah-Ewahaning Prilaku
Gorontalo	Jaton	Batak Jaton	Telodoh Wear-Wear, Mbewehen, Lelewaan
	Gorontalo	Gorontalo	Potunu Mopoboli'a Popoli
	Suwawa	Suwawa	Bubunaa (Totongolo) Balia No Popoli
Jambi	Kerinci	Kerinci	Caro Ngubuh Klakun
	Jambi	Melayu Jambi	Perubahan Perange
Jawa Barat	Cirebon	Jawa Cirebon-Indramayu	Perobahan Prilaku
	Sunda	Sunda	Padika Parobahan Paripolah
Jawa Tengah	Tegal	Jawa Dialek Tegal	Aturan Rubahan Prilaku
Jawa Timur		Jawa Dialek Surabaya	Coro Ngrubah Pola Urip
	Madura	Madura	Pandhuman Ngoba Pola Tengka
	Osing	Using	Pedoman Uwahe Laku Saben Dina
Kalimantan Barat	Dayak	Ahe Kanayatn	Padoman Parubahatn Parilaku
	Dayak Bidayuh	Bidayuh	Pedoman Perubahan Perilaku
	Dayak	Golik	Pedoman Perubahan Perilaku
	Melayu Pontianak	Melayu Pontianak	Tuntonan Berobahnye Perilaku
	Dayak Mualang	Mualang	Pedoman Perubahan Peniau
	Sambas	Sambas	Pedoman Perubahan Perilaku
	Dayak Tamambaloh	Tamambaloh	Panunjuk Periuhahan Parilaku
	Dayak Ot Danum	Uud Danum	Padioman Perubahan Perilaku
Kalimantan Selatan	Banjar	Banjar	Aturan Maubah Kalakuan
Kalimantan Tengah	Dayak Katingan	Katingan	Padoman Kahubah Panggawi
	Maanyan	Maanyan	Tutui Sihundru Piubahan Lagu Lampah
	Ngaju	Ngaju	Patunjuk Kahubah hadat/Langkasan
Kalimantan Timur	Banjar	Banjar Samarinda	Papadahan Perubahan Kelakuan
	Kutai	Kutai	Cara Ngobah Pe'elan
	Paser	Paser	Pedoman Perobahan Perangai
	Tidung	Tidung	Atur Minda De Tebiat
Kepulauan Bangka Belitung	Bangka	Melayu Bangka	Pegangan Perubahan Ketingkah
	Melayu Belitung	Melayu Belitung	Pedoman Perubahan Perilaku
Kepulauan Riau	Melayu Riau	Melayu Kepulauan Riau	Panduan Perubahan Tingkah Laku
Lampung	Melayu	Melayu Dialek A	Pedoman Perubahan Perilaku
	Melayu	Melayu Dialek O	Pedoman Perubahan Perilaku
Maluku	Alune	Seram Dialek Geser	Pedoman Perubahan Perilakura
	Hitu	Hitu Dialek Hila	Tuntunan Ing Rubai Sifat
	Alune	Alune	Maka tiluke kena lelike atate
Maluku Utara	Tidore	Tidore	Jojau Fael Ma Diyali
	Ternate	Ternate	Padoman Perubahan Diri Ma Akhlak
	Ternate	Melayu Ternate	Pedoman Kasebaruba Tabeat
Nusa Tenggara Barat	Sasak	Sasak	Pedoman Ngubah Perilaku
	Suku Sumbawa	Samawa	Pedoman Turuba Prilaku
	Mbojo	Mbojo	Pedoman Rungka Buku
Nusa Tenggara Timur	Ngada	Bahasa Ngada	Go Ngo Tau Kita Wi Dheko Tewe Da Covid
	Atoni	Bahasa Dawan	Pedoman Het Paobok Ma Palkat Hit Aoka Noko Menas Covid-19
	Lamaholot	Lamaholot	Pidan Tuen Nulu Walé
	Manggarai	Manggarai	Titong Te Caling Ba Weki
	Timor	Melayu Kupang	Pedoman Perobahan Tingkah Laku
	Wewewa	Wewewa	Tudda Patanawe Banamaghungawe Pola Moripa
	Tetun	Tetun	Lia Fuan Bodik Hala'Ok Moris Foun
	Sabu	Sabu	Li Pejahra Larri Anii Wui Tao
	Palue	Palue	Pata Nato Ne Tene Puna Muri Meko Noo Kua Puna Kita Ne
	Dhao	Ndao	Li Holo Ho Uba Tatao Edhi
	Abui	Abui	Pedoman Perubahan Perilaku
Papua	Tobati	Tobati	Nusyei Inter Waniat
		Melayu Papua	Pedoman Perubahan Perilaku
	Suku Maybrat	Maybrat	Boo Ro Mevo Vovo Rahabek, Arin Haberek
	Hubla	Hubula	Wene Ero Hewe Lasusak Meka
	Ambai	Ambai	Arera Weriwang Koang

Province	Ethnic groups	Language and dialects	Guidelines
Riau	Ocu	Melayu Riau Dialek Kampar	Pedoman Perubahan Perilaku
	Melayu	Melayu Riau Dialek Bengkalis	Panduan Mengubah Peghangai
Sulawesi Barat	Mandar	Mandar	Padomang Parubahang Panggauwang
Sulawesi Selatan	Toraja	Toraja	Pa'patudu Pessondaan Penggauran
	Makassar	Makassar	Padomang Pammirang Panggaukang
	Bugis	Bugis	Padomang Appinrangenna Ampe Kedoe
Sulawesi Tengah	Balantak	Balantak	Pimisiso Pombobiian Wawau
	Banggai	Banggai	Paladoman Boblian Balasipatan
	Buol	Buol	Didiguman Momolrik Dudolyo
	Dondo	Dondo	Pomatuju Mombalrie Ibue
	Kaili	Kaili Rai	Padoma Pompalinjo Pokainggu
	Mori	Mori	Pontiso Pebalino Peleluno
	Pamona	Pamona	Pontotoraka Katetalisaka Katewianka
	Saluan	Saluan	Katantuan Posanggalasan Na Magau
	Taa	Taa	Pdoman Pumbali Nu Lengko
	Tolitoli	Tolitoli	Totoonan Pogguba Kedo
Sulawesi Tenggara	Cia-Cia	Ciacia	Padomano Pibhali'iano Pamingku
	Culambacu	Culambacu	Petotoa Pebalino O'bage
	Kulisusu	Kulisusu	Pedoma Pobali Pebangui
	Lasalimu	Lasalimu	Cara Bali Pake
	Moronene	Moronene	Kanto'umaano Poboli'no tuminda
	Muna	Muna	Padhoma Pobhalihano Podiu
	Tolaki	Tolaki	Booboo Moboli Peowai
	Wakatobi	Wakatobi	Pajoma Ako Tepahekondou Nupake
	Wolio	Wolio	Tumpuana Balina Pewau
Sulawesi Utara	Minahasa	Tombulu	Tutuzu Imahweweru Umbantiwanti
	Minahasa	Tondano/Tolour	Teturu' Pe'uban Kabiasa'an
Sumatera Barat	Mentawai	Mentawai	Einungan Pusiliat Galaitubu
	Minangkabau	Minang	Padoman Parubahan Parilaku
Sumatera Selatan	Komering	Komering	Patokan Parubahan Tingkah Laku
	Kota Palembang	Palembang	Pedoman Perubahan Perangi
Sumatera Utara	Batak Toba	Batak Toba	Poda Parubaoni Ni Pangalaho
	Karo	Karo	Ikuten Perubahen Lagu Langkah
	Melayu	Langkat	Petunjok Perobahan Perangai
	Batak Mandailing	Mandailing	Poda Parubaon Ni Pangalaho
	Nias	Nias	Amonita Ba Febohouni Ngaroro
	Pakpak	Pakpak	Pedah Perubahen Ni Pengelako
	Pesisir	Pesisir Tapteng	Patunjuk Parubahan Parangan

*Source: adopted from (*Karlina et al., 2024*)*.