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NOISE IN INDONESIAN URBAN AREAS: RULES AND FACTS

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Abstract. Irresponsible noise management by the concerned authorities and society's indifference has made noise in Indonesian urban areas a nightmare. The current noise regulation in Indonesia, which define 55 dB(A) as the lowest permissible noise level generated in residential areas, is outdated. This study investigates how urban communities reacted to the implementation of this outdated regulation. Data was collected by searching online open sources for noise-related keywords used in public complaints, court cases, authority campaigns, etc. The collected data was then plotted in an Excel sheet to create a modest statistical trend, and the detailed information on how the government and court ruled the case was treated as a transcript to be analysed qualitatively. The study results are to be compared and discussed with noise facts of those in more advanced countries. The discussion shows that the noise case in Indonesia is significantly minor compared to other countries with similar populations. Noisemakers were reported to have won in 44% of noise complaints that went to court. This may be the reason for the Indonesians' apathy toward the settlement of noise-related complaints by the city government and the fairness of tribunal processes.

Keywords: urban areas, noise, regulation, complaint, legal case, Indonesia.

Introduction

Noise has been a constant issue in most countries, so these countries and multi-country organizations keep updating laws and standards (Environment Protection Agency [EPA], 1972, 1974, 1978, 1990; Berglund et al., 1999; Government of Canada, 1999; Adams et al., 2006; South Australia EPA, 2007; World Health Organization [WHO], 2009; Ministry of the Environment of Japan, 2000; WHO, 2011; EEC, 2015; South Australia EPA, 2016; WHO, 2018). These regulations are easily accessible to the public. Even in the US, cities, countries, and towns' noise regulations are easily accessible via the Noise Pollution Clearinghouse website (https://nonoise.org/lawlib/cities/cities.htm), from the oldest to the newest. The noise regulations in developed countries are well established, public noise awareness is high, and policymakers constantly strive to improve it. After the WHO announced that 55 dB is a noise level that the human ear can tolerate without changing its health (WHO, 2011, 2018), many countries exceeded that level, especially developing countries (Shaikh, 1999). Studies in India, Nepal, Pakistan, and Nigeria show high noise levels in their urban areas due to minimum statutory regulations and citizens' indifference (Singh & Davar, 2004; Mehdi et al., 2011; Chauhan et al., 2021; Munir et al., 2021; Usikalu & Kolawole, 2018).

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In a country with a large population (Nugraha et al., 2018), lax land-use regulations (Monkkonen, 2013), and a society that lacks respect for others (Apriyono, 2016), a large number of noise complaints and legal cases potentially occurs in Indonesia. However, contrasting with the updated noise laws of the developed countries, previous studies showed that an outdated 1996 noise regulation with 55 dBA as the lowest standard is used nationwide, and twelve of the 35 local regulations do not have specific noise regulations (Mediastika et al., 2021). This study investigates how the central and local authorities implemented the outdated regulation, which is reflected in urban communities' reaction through complaints and legal cases, and how the authorities handled the cases.

1. Methods

This study used open sources through the worldwide web-based search of public complaints and court cases based on noise-related keywords. According to Tong and Kang (2021a), the municipality database is the most reliable source for data collection. However, with the limited source and access to the municipality database, open-source data is reliable for collecting complaints and legal cases (Tong & Kang, 2021b) because government agencies in major cities worldwide encourage citizens to report noise incidents. For example, in New York, the complaint records database is easily accessed through the Noise Complaints Open Data in New York City's website (Fan et al., 2021). In Indonesia, an online search might not result in entries that were not officially reported and published. Indonesian online newspapers began in 1995, but only the headline of the printed version was made online (Pattirajawane, 1995) and was taken down from the website after a while. Online news and the use of social media were getting livelier when an online news portal, namely "Okezone.com" was born in 2008. The domination of Okezone then shifted to another portal called "detik.com" in 2011 (Juditha, 2013), when online news portals and social media became widely known in Indonesia. Therefore, this study could only collect data mostly after 2011. The online data collection was conducted from June 1 to August 17, 2021.

Keywords of noise (Bahasa Indonesia: kebisingan) and noisy (Bahasa Indonesia: bising) combined with keywords of complaint (Bahasa Indonesia: komplain, pengaduan, and keluhan), protest (Bahasa Indonesia: protes), and report (Bahasa Indonesia: lapor and laporan) were used to collect individual and public complaints. These combinations of keywords were inserted into the Google search engine. The result was all collected by scrolling down until the message "In order to show you the most relevant results, we have omitted some entries very similar to the … (numbers of entries) already displayed. If you like, you can repeat the search with the omitted results included" was displayed. Each keyword combination displayed a different number of entries depending on the relevancy processed by Google. Often, the message "repeat the search with the omitted results included" was clicked to ensure that all relevant entries were collected though the entries provided were all irrelevant. Overlapping was somehow possible, but errors in collecting entries were minimised with a careful check and recheck.

The legal cases' archives data was collected with keywords of noise and noisy from the Indonesia Supreme court's website, which has provided a database since 2010 through https://putusan3.mahkamahagung.go.id/direktori.html. The information gathered from complaints and legal cases include time, location, method of submission, type of law, object or noise type of complaint or legal case, and how the government or court handled the case. These were all set as variables of complaints and legal cases. Each case is treated as the number of entries and plotted into Excel for quantitative and qualitative processing. A simple statistical method of clustering and averaging based on the assigned variables was used to study the trend. Meanwhile, qualitative analysis was carried out by treating the detailed narration of each entry like a transcript in the in-depth interview method. This stage was carried out to examine how the government responded to complaints and the court adjudicated legal cases. The qualitative analysis was carried out by carefully reading the case transcript before conducting data reduction to extract the keywords (Namey et al., 2008; Mezmir, 2020). Studying the flow of legal cases using uncoded keywords is sufficient to interpret and conclude how the outdated regulation is implemented by the government.

2. Results and discussion

2.1. Complaints on noise

The implementation of noise regulations in Indonesia was cross-checked against community reactions via complaints. The study collected 112 noise complaints from 2008 to 2021, tabulated in Table 1 and summarised in Figure 1, excluding complaints of noisy mufflers. Mufflers are non-fixed sources of traffic noise, and those complaints were mostly happening during the Coronaviruses pandemic, which can later bias the analysis. However, 68 entries of muffler complaints and the raiding by police officers popped up. Moreover, muffler complaints significantly escalated during the pandemic in 2020 and 2021 because people realised the muffler disturbance when relaxing at home.

The 112 noise complaints and 68 complaints specific to mufflers during 13 years (2008 to 2021) were minimal compared to other countries. For example, in England, there were 399,112 cases reported only in 2011 (Public Health England, 2018, after Tong & Kang, 2021a). New York had 2.92 million recorded by NYC 311 from 2010 to 2018. NYC 311 is New York City's governmental non-emergency service number (Tong & Kang, 2021c). In Milan, about 100–150 noise cases have been almost constant since 2007 (Zambon et al., 2020). While in Singapore, around 70,000 noise complaints are made to government agencies every year (Wan, 2016). Kang (2006) stated that individual attitudes, perceptions, and objective cases are the underlying factors in reporting noise complaints as part of noise policy.

Table 1. Data collected regarding noise complaints from 2008 to 2021

	Year	Case	by Means of
Keywords: *komplain bising*			
1	2016	Sudirman Mansion Apartment's residents in Jakarta complained about the noise from a nearby bar	Online news portals
2	2021	A person annoyed by a noisy prepaid electricity meter decides to charge the meter to get rid of the noise	Online news portals
3	2021	A noisy hotel and cafe in Tebet have been complained of by people living nearby	Online news portals
4	2015	The flying exercise of three Sukhoi at Ngurah Rai Air Base disturbed people living nearby	Online news portals
5	2021	Hotel guests in Jakarta who are overseas athletes complain about the noise of religious buildings around the hotel due to the dawn call to prayer	Online news portals
6	2019	The Banyumas City Parliament hosted community representatives living in Wangon for protesting against the noisy asphalt factory	Online news portals
7	2018	A resident living near the steam power plant in Ketapang, West Kalimantan, sent a summons to PLN triggered by the noise from the power plant. He demanded to be relocated to a quieter place	Online news portals
8	2015	A community living in Bekasi complained about noise from a truck warehouse	Online reporting channels
9	2017	The Mayor of Bogor received complaints from the public due to the construction of a nearby commercial building	Online news portals
10	2020	A community living near a bar in Pekanbaru, Riau, demanded the bar install noise-cancelling elements, but the bar sent no response	Online news portals
11	2019	A community living near a printing factory in North Jakarta complained about the 24-hour noise from the factory	Online news portals
12	2020	In Kuala Pembuang, South Kalimantan, a community complained about a swallows farm noise nearby	Online news portals
13	2018	A community living in Bali complained about noise from a nearby welding workshop. The workshop then received a warning letter from the city government	Online news portals
Keywords: *komplain kebisingan*			
14	2016	A mother of three toddlers was disturbed by the construction of a shopping mall carried out every day until late at night	Online law consultation
15	2015	A community member looked for noise regulation caused by power plants of a banking office located in a residential area	Online law consultation
16	2021	Hotel customers in Senggigi, West Lombok, reported noise from a nearby karaoke. On-site noise measurements by the local Environment Agency showed that three cafes, namely Mandalika, Kedaton and Paragon, had exceeded the noise threshold	Online news portals
17	2014	A community in Medan, North Sumatera,complained about the operation of the power plant by the State Electricity Company or PLN for short	Online news portals
Keywords: *komplain kebisingan*			
18	2018	A public member consulted on ways to prove the dangers of noise. He asked for advice on whether to visit a doctor for treatment or wait until he had a stroke to prove it	Online law consultation
19	2021	The Surabaya City Parliament hosted the representative of a community lives nearby Double Tree Hotel in Surabaya, who complaints about noise from the hotel's bar	Online news portals
20	2013	A community living in the vicinity of the La City Apartment development in Jakarta complained several times about the noise generated by the 24-hour construction	Online news portals
21	2016	The Jakarta Province Environment Agency responded to complaints from plastic factory noise, namely PT Elastis Reka Aktif	Online reporting channels
22	2021	A community living near a cemetery in Cilincing, North Jakarta, complained about the ambulance sirens often heard during the Coronavirus pandemic	Online reporting channels
23	2019	A resident living near a highway in Kediri, East Java, complained that large trucks were making noise and demanded the city government to build a toll road to accommodate truck traffic	Online reporting channels
24	2020	A resident in Surabaya, East Java, reported about the operation of a furniture workshop in a residential area	Online reporting channels
25	2018	A resident in Bali reported noise from a cafe that operates until midnight	Online reporting channels
26	2021	A community living in the vicinity of the Budi Agung Hospital construction in Pati complained about the noise because the city government did not comply with their previous report	Online news portals

Continued of Table 1

	Year	Case	by Means of
27	2019	A community lives nearby an factory in Jember complained about high noise intensity as there are no vertical noise barrier built by the factory to reduce the spread of noise to the settlement areas	Online news portals
Keywords: *pengaduan bising*			
28	2021	A resident in Yogyakarta reported loud music and loud screaming in the middle of the night happening nearby	Online reporting channels
29	2017	A resident in Menteng, Jakarta, reported noise from a nearby cafe	Online news portals
30	2014	A resident in Jatinegara, East Jakarta, complained about noise and vibrations from the construction of a canal to connect the Ciliwung River to the East Flood Canal	Online news portals
31	2021	A resident reported a noisy sand mining near his house to the Blitar Regency online reporting channel. However, the incident was outside the jurisdiction, so that no response was given	Online reporting channels
32	2020	A community living in Bali complained about using outdoor loudspeakers from a nearby cell phone shop every day from morning to evening	Online news portals
33	2020	A community living in Tangerang reported noisy crowds at night. The coronavirus pandemic has made some people more relaxed by working from home, giving them more time to make crowds and noise at night	Online reporting channels
34	2020	A resident in Tangerang, Banten, complained about using portable loudspeakers circulating in residential areas to announce regulations during the coronavirus pandemic when children and adults study and work from home. The city government responded that the public must accept the noisy activity as it is only during the pandemic	Online reporting channels
35	2019	An office located in Yogyakarta complained about the noise of a nearby stone mill	Online news portals
36	2018	A community living in Malang, East Java, complained about a telecommunication tower's noise when strong winds hit	Online reporting channels
37	2013	A community living in Bantul, Yogyakarta, complained about a noisy and dusty furniture workshop nearby	Direct/non-online reporting channels of local environemntal agency
38	2013	A community living in Bantul, Yogyakarta, complained about noise from a fun park nearby	Direct/non-online reporting channels of local environemntal agency
39	2013	A community living in Bantul, Yogyakarta, complained about noise, dust, and vibration from a briquettes factory nearby	Direct/non-online reporting channels of local environemntal agency
40	2013	A community living in Bantul, Yogyakarta, complained about a noisy metal statues workshop nearby	Direct/non-online reporting channels of local environemntal agency
41	2013	A community living in Bantul, Yogyakarta, complained about the noise from the nearby leather tanning factory	Direct/non-online reporting channels of local environemntal agency
42	2018	A resident living near a construction workshop in Gresik reported noise from a nearby workshop for five years, but the city government has not responded to his report so far	Online news portals
43	2020	A community living near a bar in Bali reported to a local government agency for noise caused by a gathering of a group of teenagers and the music they played	Online news portals
44	2014	A community living in Bali sued a nearby motor vehicle repair shop	Online news portals
45	2016	A community living in Jakarta complained about the 24-hour noise from the fashion factory in a residential area	Online news portals
Keywords: *pengaduan kebisingan*			
46	2021	A resident in Malang reported noise from a nearby bakery and cake shop	Online reporting channels
47	2020	The Environment Agency of Purworejo, Central Java, conducted an *in-situ* survey to respond to reports of people living near a noisy coco coir factory	Online news portals
48	2020	A resident in Pakem Yogyakarta reported a loud noise from a nearby sound system rental company that caused noise until midnight	Online reporting channels

Continued of Table 1

	Year	Case	by Means of
49	2018	A community member reported noise from live music being performed at a gallery in Bali. According to the local Environment Agency, the noise was within the standard for activity along certain roads. However, he questioned whether these measurements have complied with the Bali Provincial Regulation number 16 of 2016. According to him, the noise did not disturb roads but his bedroom instead	Online reporting channels
50	2019	A resident in Bali reported noise from a nearby cafe that operated until dawn. The city government responded to the report by warning the cafe to eliminate noise	Online reporting channels
51	2019	The Environment Agency of Indramayu, West Java, responded to public noise reports from the furniture workshop	Online news portals
52	2020	A community representative sent a letter to the government of Lhokseumawe, Aceh, because of the noise and vibration from a gas engine power plant	Online news portals
53 to 63	2021	Eleven community members from different locations in Malang, East Java, reported noise from religious buildings around their settlements	Online reporting channels
64	2021	A resident in Malang, East Java, reported a noisy sound system nearby	Online reporting channels
65	2021	A community reported noise from music being played by a food market. As a result, the Palangka Raya Government Agency held a meeting to facilitate the two parties in finding solutions	Online news portals
66	2021	A resident in Lumajang, East Java, reported noise from a nearby workshop, especially the sound of a sledgehammer	Online reporting channels
67	2018	A resident in Bogor reported noise from the nearby 24-hour factory	Online reporting channels
68	2018	A resident in Bone-Bone, South Sulawesi, reported noise from the construction of a nearby supermarket	Online reporting channels
69	2018	The Environment Agency of Buleleng, Bali, responded to public reports of noise and pollution from the surrounding livestock factory	Online news portals
70	2016	A community in Jakarta reported noise from a nearby semi-permanent cafe	Online news portals
71	2021	A resident in Magelang reported a noisy computer shop nearby	Online reporting channels
72	2020	The government agency of a village in Bali responded to community complaints about noise from pet dogs living in the area	Online news portals
73	2020	A resident in Gowa, South Sulawesi, reported noise and dust from a portland cement factory	Online and direct reporting channels
74	2020	The Environment Agency of Samarinda, East Kalimantan, responded to residents' report being disturbed by the presence of a swallows farm nearby	Online news portals
75	2015	A resident in Subang, West Java, complained about the noise from the dump trucks of mining activity	Online news portals
76	2018	A resident in Pekalongan, Central Java, reported the noise from an factory called Tespan	Online reporting channels & Online news portals
77	2018	A resident in Sambas, West Kalimantan, reported a loud sound from karaoke	Online reporting channels
Keywords: *protes bising*			
78	2021	A noisy car workshop was forced to close by the Jakarta City Government due to reports from residents living in the vicinity	Online news portals
79	2014	A community living in Jakarta protested the noise of the construction of a new school	Online news portals
80	2018	A community visited the Surabaya Parliament to report a noisy container truck warehouse	Online news portals
81	2020	In North Toraja, South Sulawesi, a community protested the noisy asphalt mixing factory nearby	Online news portals
82	2021	A community living in North Morowali, Central Sulawesi, protested against noise and smoke from a nearby smelter	Online news portals
83	2020	A community living in Banjarmasin, South Kalimantan, complained about the noisy construction of a nearby building that operates until the evening	Online news portals
84	2018	A community in Sampit, West Kalimantan, disturbed by noise from a nearby cafe	Online news portals
85	2016	The live music performances, often held at Batu City Hall, East Java, were protested by the local community	Online news portals
86	2012	A community living in Tangerang, Banten, protested the noise from the construction of a nearby hospital building	Online news portals

End of Table 1

	Year	Case	by Means of
87	2020	A community living in Semarang, Central Java, protested the noise from a nearby timber factory	Online news portals
88	2019	A community living in Lebak, Banten, demanded a response from the local Environment Agency because of noise from mining activity, especially noise from conveyor belts	Online news portals
89	2018	A community living in South Lampung protested the noise from the ready-mix Factory batching plant	Online news portals
	Keywords: *protes kebisingan*		
90	2014	A community living in Serang, Banten, protested the noise of the home factory in their residential area	Online news portals
91	2016	In Blitar, East Java, junior high school students protested the noise from limestone mining near their school	Online news portals
92	2020	A community living in Tanjung Pinang, Riau Islands, protested a noisy granite mining activity nearby	Online news portals
93	2019	A community living in Tangerang, Banten, protested the noise from trucks and excavators of apartment construction	Online news portals
94	2020	A community living in Medan, North Sumatra, protested the noise from the warehouse and workshop of the palm oil factory	Online news portals
95	2017	A community living in Tangerang, Banten, protested the noisy apartment construction nearby	Online news portals
	Keywords: *lapor bising*		
96	2021	A resident in Jepara, Central Java, reported noises from nearby warungs and cafes. He/she explicitly took examples of how developed countries deal with noise issues	Online reporting channels
97	2014	A resident in Bogor, West Java, reported a noisy workshop nearby	Online reporting channels
98	2019	A community living near an amusement park in Bekasi, West Java, reported the noise of live music being held in the park, especially during weekends when people need to rest and relax	Online news portals
	Keywords: *lapor kebisingan*		
99	2021	A resident in Semarang, East Java, reported noisy live music from a nearby cafe	Online reporting channels
100	2021	The police officers of Palangka Raya, Central Kalimantan, responded to a resident's report about loud karaoke by a garbage processing worker near his house	Online news portals
101	2020	A resident in Malang reported noise and smell from a nearby farm	Online reporting channels
	Keywords: *keluhan bising*		
102	2021	A community living in Bali complained about a noisy cafe nearby. The local government then responded by sending the café owner for trial	Online news portals
103	2021	A community living in Bali reported a noisy café nearby	Online reporting channels
104	2020	In Cilacap, Central Java, a community complained about a nearby steam power plant noise	Online news portals
105	2021	A community living in Tangerang, Banten, complained about the noise from low-flying aeroplanes	Online news portals
106	2021	A resident in Rembang, Central Java, complained about the noise from the nearby portland cement factory	Online news portals
107	2020	A community living in Bandung complained about the noise from the construction of a high-speed rail line nearby	Online news portals
108	2021	A community living in Bekasi, West Java, complained about the noise from the steel factory in their neighbourhood	Online news portals
109	2012	A resident in Surabaya, East Java, complained about the noise caused by a neighbour's house renovation	Direct/non-online reporting channels
110	2011	A community living in Surabaya demanded the local Environment Agency measure the noise from a gas well drilling company	Online news portals
	Keywords: *keluhan kebisingan*		
111	2008	The Denpasar Bali government agency conducted an in-situ survey to respond to public complaints about the noise of a nearby motorcycle repair shop	Online news portals
112	2017	A power plant company in Semarang, Central Java, would investigate the cause of noise complaints from the local community	Online news portals

Moreover, Tong and Kang (2021b) showed that noise complaints are behaviour instead of perception. Therefore, the minimal complaints in Indonesia reflect two possibilities: (1) noise regulations were enacted as were purposed or (2) lack of noise awareness and apathy among Indonesians. The two possibilities are confirmed through findings on legal cases discussed later.

Figure 1 shows that most complaints came from online news portals. Regarding the time of occurrence, complaint cases have increased over the years. However, no further information could be collected on whether a minor occurrence or publication caused the minor data before 2011. The complaints peak occurred in 2020 and 2021 as it correlated with the Coronaviruses pandemic when people were forced to stay home, leading to gradual noise increment in the neighbouring atmosphere (Yildirim & Arefi, 2021; Tong et al., 2021). The 13 years of data collection show that factories or workshops dominated the complaints. Poor spatial planning in Indonesia causes small and medium businesses or workshops to operate in residential areas. It differs from developed countries, where noise complaints are dominated by traffic and construction (Brambilla et al., 2017; Zambon et al., 2020), and wind turbines as the effect of the global wind power installation (Janssen et al., 2011; Fredianelli et al., 2019; Licitra & Fredianelli, 2013; Pedersen & Waye, 2004).

Similarly, noise complaints increased significantly, with 47.54% resulting from construction and neighbourhood in London during the lockdown (Tong et al., 2021). Indonesian cities also had significant noise cases in 2021 reported within settlement areas, especially during mobility restriction to reduce pandemic spread called PSBB (Bahasa Indonesia: Pembatasan Sosial Berskala Besar) and PPKM (Bahasa Indonesia: Pemberlakuan Pembatasan Kegiatan Masyarakat), which matched other reports. However, 13 years of data collection showed that factories or workshops dominated the complaints. The poor land planning in Indonesia causes small or large-scale enterprises/workshops within settlement areas. It differs from developed countries, where noise complaints are dominated by traffic, construction (Brambilla et al., 2017; Zambon et al., 2020), and wind turbines as the effect of the global wind power installation (Janssen et al., 2011; Fredianelli et al., 2019; Licitra & Fredianelli, 2013; Pedersen & Waye, 2004).

Although Indonesians are aware that complaining about the noise of religious buildings is a sensitive issue, still there were 12 complaints on this matter. In 2018, a Tanjung Balai resident, namely Ms Meliana, was sentenced to jail caused of her chats with a neighbour about a noisy religious building, followed by a group of wrathful people burning down opposing religious buildings. It could have been avoided if the government had provided official reporting channels to accommodate public complaints. This

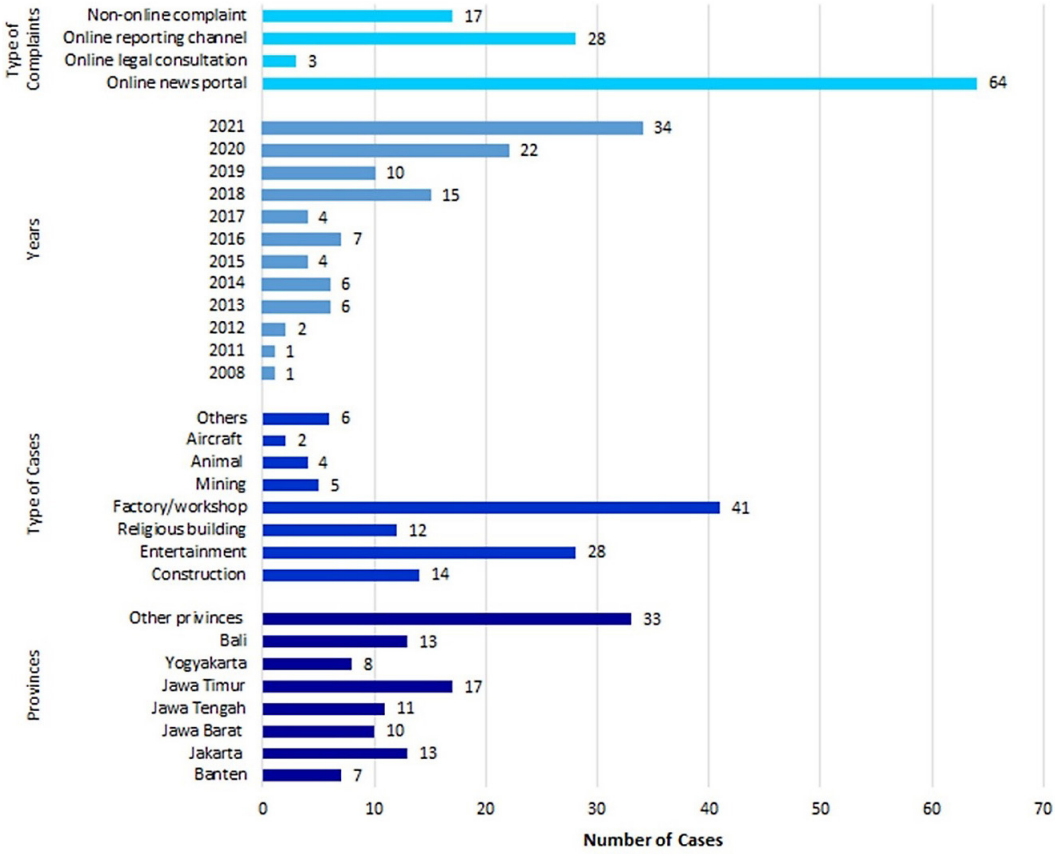

Figure 1. Noise complaints profile in Indonesia collected from year 2008 to 2021

hypothesis was based on the 12 noise complaints from religious buildings recorded in this study, which were reported officially to the local municipality. Although there is no detailed information on whether the above issues were accommodated and handled by the competent authorities, the 12 official complaints did not trigger turmoils or legal cases afterwards. Noise caused by religious buildings also occurred in other countries – for instance, in Sri Lanka with the so-called "Ashik versus Bandula and others" case. The angry community take the case to court instead of complaints. After a long tribunal process, Sri Lanka's supreme court ordered that noise from religious buildings be strictly regulated and scrutinized regularly by the municipality (Sarath et al., 2007).

Meanwhile, learning from the UK and Italy, noise cases are delivered legally to the municipality and reported under environmental legislation, thus, providing a database for government decision making. Indonesia also has direct reporting channels, but it is only a formality. In many cases, municipalities were very slow or did not respond after a complaint was received – for example, complaint 42 of Table 1 and a recent case in Jakarta, which is not included in Table 1. An elderly couple disturbed by adjacent traffic noise reported the case officially to Jakarta's Mayor. However, the report, which should be official and confident, was answered by a group of people allegedly on behalf of the neighbourhood and local hamlet. They brutally bullied the couple into moving out of the area (Polda Metro Jaya, 2021). Both complaints show unexpected responses from the government, which leads to apathy among Indonesians in reporting noise.

Other unique cases, the blue-coloured fonts tabulated in Table 1, are discussed here. For example, complaints 6, 19, 80, and 100 reflect two possibilities. First, the unclear procedures for reporting noise cases have encouraged Indonesians to visit the Parliament or police offices instead of appropriate government agencies. Second, the victims may have reported the case to the appropriate government agency but did not receive an adequate response in return, as complaint 42 demonstrated. So they came to the Parliament and police offices. Complaint 31 also reflects a situation in which a public member desperately seeks solutions by reporting noise to a random reporting channel he came across on websites. While complaints 15 and 18 show that people need assistance to report noise. It indicates that clear and precise information is of importance to be provided by the government (Wright, 2014). The government should also encourage people not to hesitate to report noise (Government of the UK, 1990). Complaints 22, 33, and 34 are unique cases during the coronavirus pandemic related to poor yet common spatial planning where settlements are very close to cemeteries and related to the indifferent way of life. While cases 27, 49, and 96 show complaints by knowledgeable public members, as they mentioned acoustical reasoning, which is very little out of 112 complaints.

Making noise complaints depends significantly on socioeconomic factors (Tong & Kang, 2021b). Zambon et al. (2020) added that noise complaints are also influenced by a person's sense of control over the stressor, knowledge of the noise agency handling the complaint, and the expectation of successful feedback. That is why not everyone who experiences noise issues complains. However, the expectation of successful feedback should prevent those aware of noise from not complaining (Zambon et al., 2020). Ms Meliana's and the Jakarta elderly couple's cases have made Indonesians realise that successful feedback is minor in Indonesia. People with higher socioeconomic status tend to deliver noise complaints more than those of lower status (Morley & Hume, 2003). Also, those who are older, better educated, and have higher income and social status are more prone to express their feelings through complaints (Van Wiechen et al., 2002). The Indonesian Ombudsman Representative of East Java reported an increment in population maladministration from 2017 to 2018 (Reicoba et al., 2020), including maladministration in handling complaints. The maladministration includes the unresponsive municipality that shows the apparatus's socio-condition, which takes community complaints lightly. All of these explain why noise complaints in Indonesia are minor.

2.2. Legal cases on noise

This study does not expect to collect many legal cases since noise complaints in Indonesia were minimal compared with other countries with more attentive citizens and better reporting procedures. The Indonesia Supreme Court's official website investigation collected 41 noise cases from 2010 to August 2021. Statistically, the case was grouped as civil, criminal (general, special, and military), and state administration, as shown in Table 2 and Figure 2. Legal cases on noise spread across Indonesia but mainly occurred in Surabaya (the second largest city after Jakarta) and Jakarta. Noise naturally exists in big cities with various land functions and activities. A noise case is a civil case. However, in Indonesia, 12 civil cases turned to crime because the victims took unlawful actions toward the noisemakers instead of reporting it to the municipality or bringing it to court. This explains that some Indonesians could not trust the magistrate court, which turned the noise issues into criminal cases. This contrasts with the case of Ms Meliana above, which started from a conversation but was brought to court as a criminal case, not for the party who burned the religious building but for Ms Meliana as the defendant instead. Ms Meliana's legal case is not listed in Table 2 because the case did not pop up with a noise keyword on the Supreme Court's official website. No noise term was used in court, but the term of blasphemy instead.

Among 41 legal cases, 23 won, and 18 lost in the district court. Of the 18 lost cases, six litigants appealed to the high court, where three were rejected, and three were accepted (Figure 3). According to the court, the loss was caused by the litigants who had no legal standing. Of the cases that the litigant lost, six defendants filed counterclaims.

Table 2. Data collected regarding noise legal cases from 2010 to 2021

	Year	Case number	Litigant	Lawsuit type	Noise type	Defendant	Verdict for the litigant			Defendant's side
							Lost	Appealed (result)	Won	
1	2019	112/G/LH/2019/PTUN.BKL	Confidential	State administrative	Factory noise	The Governor of Bengkulu and the factory	√	√ (rejected)	–	–
2	2012	652 PK/Pdt/2012	Confidential	Civil	Factory noise	The factory	–	–	√	Filed judicial review but was rejected
3	2018	2/G/LH/2018/PTUN.PDG	Confidential	State administrative	Factory noise	Mayor of Padang and the factory	√	–	–	–
4	2018	14/Pdt.G/LH/2018/PN Gns	Confidential	Civil	Factory noise	The factory	√	–	–	–
5	2021	1/P/FP/2021/PTUN.SBY	Confidential	State administrative	Factory noise	Mayor of Surabaya	√	–	–	–
6	2014	1587 K/Pdt/2013	Confidential	Civil	Factory noise	The factory	√	–	–	–
7	2020	6/Pdt.G/2019/PN Pwk	Confidential	Civil	Construction noise	The construction owner	√	√ (accepted)	–	Filed counterclaim or reconvention and was accepted
8	2018	107/Pid.B/2018/PN Thn	Confidential	Criminal	Traffic noise	A person - confidential	–	–	√	Prisoned for 3 months
9	2012	7-K/PMT.III/AL/IV/2012	Confidential	Criminal – military	Factory noise	The noise victim	–	–	√	Prisoned for 6 months
10	2018	78/Pid.C/2018/PN Skt	Confidential	Criminal	Factory noise	The factory	–	–	√	Prisoned for 7 days
11	2015	1285/PID.B/2015/PN Lbp	Confidential	Criminal	Traffic noise	A person - confidential	–	–	√	Prisoned for 14 months
12	2019	28/Pid.B/2019/PN.Soe	Confidential	Criminal	Traffic noise	Several persons - confidential	–	–	√	Prisoned for 10 months
13	2012	118/Pdt.G/2012/PN Mdn	Confidential	Civil	Factory noise	Mayor of Medan	–	–	√	Filed objection or exception but was rejected
14	2018	71/Pdt.G/2018/PN Yyk	Confidential	Civil	Entertainment noise	The entertainment owner	–	–	√	Filed objection or exception and appealed but was rejected and punished to close the venue and pay the litigant of five millions Rupiahs
15	2020	51/Pid.Sus/2020/PN Pnj	Confidential	Criminal – special	Traffic noise	A person - confidential	–	–	√	Prisoned for 7 months
16	2014	1311 K/Pdt/2014	Confidential	Civil	Traffic noise	The factory	√	√ (rejected)	–	–
17	2013	22/PID.B/2013/PN.PP	Confidential	Criminal	Domestic noise	A person - confidential	–	–	√	Prisoned for 4 months

Continued of Table 2

	Year	Case number	Litigant	Lawsuit type	Noise type	Defendant	Verdict for the litigant			Defendant's side
							Lost	Appealed (result)	Won	
18	2016	156/Pdt.G/ 2015/PN.Blb	Confidential	Civil	Factory noise	The factory	–	–	√	Filed objection or exception but was rejected and punished to close the factory
19	2015	70/Pid.B/2015/ PN Kln	Confidential	Criminal	Factory noise	A person - confidential	–	–	√	Prisoned for 5.5 months
20	2015	1203 K/ Pid/2015	Confidential	Criminal	Factory noise	A person - confidential	–	–	√	Prisoned for 4 months
21	2018	1234 K/Pdt/ 2017	Confidential	Civil	Constructi-on noise	National Land Agency of Bogor Area	√	–	–	–
22	2019	37/G/2019/ PTUN.BDG	Confidential	State admini-strative	Factory noise	Mayor of Cimahi	–	–	√	Filed objection or exception but was rejected and punished to close the factory
23	2018	319/Pdt.G/ 2018/PN Mdn	Confidential	Civil	Factory noise	The factory	–	–	√	Punished to provide a parking space specific for the factory
24	2015	409 K/ TUN/2015	Confidential	State admini-strative	Constructi-on noise	Regent of Bandung and the factory	–	–	√	Filed objection or exception but was rejected
25	2013	04/G/2013/ PTUN.YK	Confidential	State admini-strative	Factory noise	Bantul district licensing office	–	–	√	Punished to close the factory
26	2021	1273/Pdt.G/ 2020/PN Sby	Confidential	Civil	Constructi-on noise	A person - confidential	√	–	–	–
27	2017	798/Pdt.G/ 2016/PN.Sby	Confidential	Civil	Constructi-on noise	The factory	√			Filed objection or exception but was rejected
28	2017	103/G/2017/ PTUN-MDN	Confidential	State admini-strative	Constructi-on noise	Mayor of Medan	√	–	–	Filed objection or exception but only one sub-case was accepted
29	2010	997 K/PID. SUS/ 2009	Confidential	Criminal – special	Factory noise	A person - confidential	–	–	√	–
30	2012	77/G/2012/ PTUN-JKT	Confidential	State admini-strative	Factory noise	Department of Transportati-on of Jakarta	√	–	–	Punished to close the factory
31	2020	568/Pdt.G/ 2019/PN Bks	Confidential	Civil	Constructi-on noise	Mayor of Bekasi and the factory	√	–	–	–
32	2016	76/G/LH/2016/ PTUN-BDG	Confidential	Criminal – special	Constructi-on noise	Licensing Agency of Garut and the factory	–	–	√	Filed counterclaim or reconvention but was rejected

End of Table 2

	Year	Case number	Litigant	Lawsuit type	Noise type	Defendant	Verdict for the litigant			Defendant's side
							Lost	Appealed (result)	Won	
33	2020	12/Pdt.G/2020/ PN Mdn	Confidential	Civil	Factory noise	A person - confidential	–	–	√	Filed counterclaim or reconvention but was rejected
34	2012	142/Pdt.G/ 2011/PN.SBY	Confidential	Civil	Factory noise	The factory	√	–	–	Filed counterclaim or reconvention but was rejected
35	2019	520/ Pid.B/2019/ PN Pdg	Confidential	Criminal	Factory noise	The noise victim	–	–	√	Prisoned for 4 months
36	2015	183/Pdt.G/ 2015/PN.Jkt. Tim	Confidential	Civil	Constructi-on noise	The factory	–	–	√	Filed counterclaim or reconvention but was rejected
37	2012	02_G_2012_ PTUN YK	Confidential	State admini-strative	Factory noise	Regent of Kulon Progo	√	–	–	Filed objection or exception but was rejected
38	2012	15/G/2012/ PTUN-BKL	Confidential	State admini-strative	Hospital noise	Mayor of Bengkulu	√	√ (accepted)	–	The building permit was postponed
39	2018	10/Pdt.G/2018/ PN SRL	Confidential	Civil	Factory noise	The factory	√	√ (accepted)	–	–
40	2011	45/G/2011/ PTUN.SBY	Confidential	State admini-strative	Factory noise	Licensing Agency of Sidoarjo and the factory	–	–	√	Filed counterclaim or reconvention and was accepted
41	2017	22/G/LH/2017/ PTUN-SRG	Confidential	State admini-strative	Constructi-on noise	Mayor of South Tangerang and the factory	√	√ (rejected)	–	The litigant filed objection or exception and judicial review but both was rejected

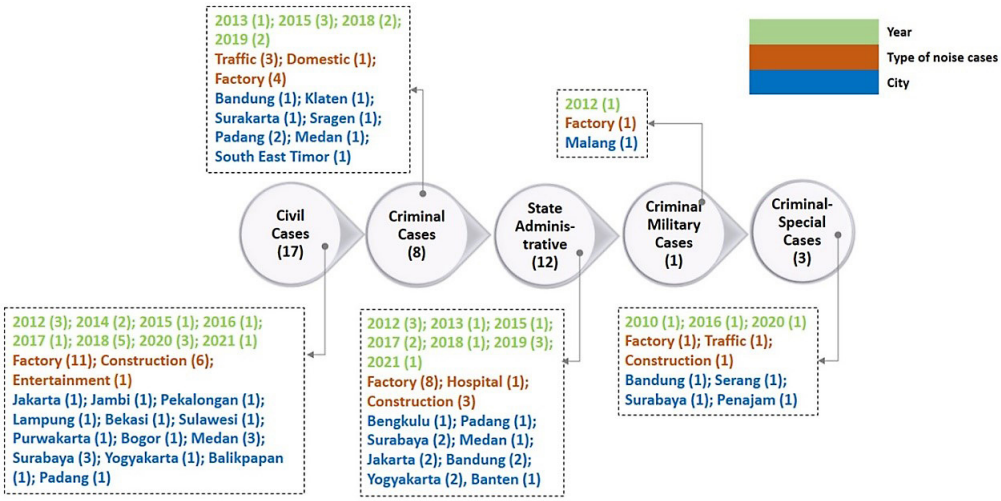

Figure 2. Legal cases related to noise and nuisance in Indonesia recorded from 2010 to 2021

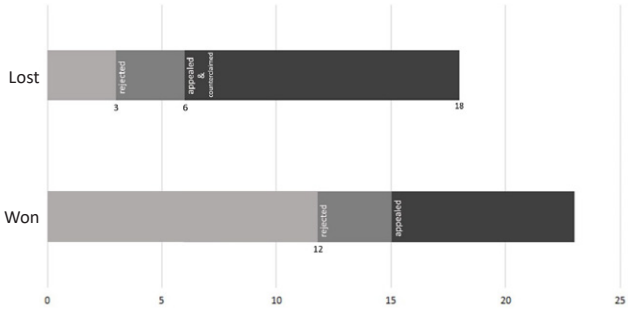

Figure 3. The legal proceedings of 41 noise cases from the litigants' point of view

Among 23 cases that the litigants won, 15 defendants appealed to the high court and even brought the case to the supreme court for judicial review. In the end, 12 were rejected, two were accepted, and one was partially accepted. Surprisingly, Table 2 shows that in 16 cases of the 41, the litigants sew local municipality and not the noisemakers. The litigant alleged that the government had violated the regulations by permitting noisy activities. The blue-coloured fonts tabulated in Table 2 reveal some unique cases. In cases 5 and 13, trials were held, but in the end, the judges stated that they did not have the authority to judge the case and suggested the litigants file their cases using more appropriate lawsuit types. In case 37, which the defendant won, the defendant filed an exception that a public member should file an official complaint to the municipality instead of being brought to court. It contradicts complaint 42 (Table 1), where a public member got no responses from the municipality after reporting the case many times.

Case 7 is unique because both the litigant and the defendant proceed to the subsequent trial. The litigant appealed to the higher court but was rejected, and the defendant counterclaimed and was accepted. Unfortunately, the successful counterclaim placed the litigant to pay significant compensation because the case was detrimental to the defendant. This can make people reluctant to continue legal cases because they learn that victims can lose and become financially bankrupt. Case 14 required a lengthy court process because the defendant filed an exception and appealed to the higher court after the litigant's claims were granted. The defendant brought evidence that the entertainment noise was within the standards measured by a specific laboratory. Also, the premises had extended walls to block out the noise but refused to install noise-cancelling elements. The court's ruling showed that the noise measurement procedure was part of the dispute. Whereas case 9 was held as a type of military lawsuit because the defendant was a soldier who turned the noise case into a criminal case by damaging the factory building. The term' factory noise' used in Table 2 includes noise generated by workshops and commercial activities.

In countries with many rules like India, laws being referred to are upheld in settling disputes. For example, using the keywords' noise pollution cases', an Indian website called "Indiankanoon" recorded 34 regulations and 2,184 legal cases related to noise from 2000 to 2020 (Indian Law, 2021). Article 19(1) of the constitution states that citizens have the freedom of speech and the right to expression. This contradicts Article 21, which protects the right of life free from noise pollution, which mostly causes disputes during tribunals. Those who made noise often took shelter under Article 19(1), thereby defending noisemakers. However, in many cases, the Indian Supreme Court agreed to refer to Article 21 that noise interfered with the fundamental right of the citizens to live peacefully. The dispute of laws should not occur in Indonesia since only one rule is referred to: the Minister of the Environment's regulation numbered 48/MENLH/11/1996. However, n some legal cases (number 2, 4, and 5), either at the district or high court, the tribunals focused on whether the noise measurement was conducted procedurally, whether referred regulations were valid, and whether the measurement was taken by licensed operators and laboratories (Table 2, Figures 4, and 5). These cases shifted from the immediate context of noise as a nuisance and explain that procedures to perform noise measurements and laws to be referred to are debatable. Therefore, the Indonesian judge can rule that the litigant has no legal standing.

Figure 4. An example of improper noise measurement using sound level meter taken by Badan Lingkungan Hidup (BLH) Lombok Barat in Lombok Island Indonesia in dealing with community complaints regarding noise from a karaoke café (Subardi, 2015)

Figure 5. An example of proper noise measurement conducted by Badan Pengelola Lingkungan Hidup Daerah DKI Jakarta in dealing with community complaints due to air and sound pollution of Elastis Reka Aktif Company in Jakarta (beritajakarta, 2016)

Many countries brought legal cases on noise to environmental courts, where judges, lawyers, and experts in environmental protection are placed to avoid unnecessary disputes outside the central issue of the tribunal (Krasnova et al., 2019). Since 2010, more than 50 countries have set environmental courts (Pring & Pring, 2010), and those well-established are in New Zealand (Palmer, 2009), Australia (Stein, 2002), Vermont, and Hawaii in the US (Krasnova et al., 2019). These countries have specific courts to tackle the environmental issue, including noise and provide clear and straightforward information to the public about the filing procedure, expected results, mediation, and the source of more information (Wright, 2014). They also include access to legal assistance, a public ombudsman, or a law school's environmental clinic (Wright, 2014). Furthermore, these governments advise their citizens to take legal action in dealing with noise nuisance – for instance, Section 82 of the UK Environmental Protection Act 1990 states that every person suffering nuisance is authorised to complain in a Magistrates Court (Government of the UK, 1990). The UK environmental court's website (http://www.environmentlaw.org.uk/) reveals the court had granted three appellants living in Cambridge, Bury Saint Edmunds and Peterborough the right to live free from noise disturbances despite noise having been around for a long time before they moved into the neighbourhood. This confirms that certain governments have sufficient laws and legal procedures to protect citizens' right to be freed from noise.

Conclusions

In a country with a large population, lax land-use regulations, and a society that lacks respect for others (Nugraha et al., 2018; Monkkonen, 2013; Apriyono, 2016), a large number of noise complaints and legal cases should occur in Indonesia. However, this study shows that complaints and legal cases related to noise are small. Unsuccessful feedback triggers Indonesians not to report noise; also, the socio-condition of Indonesians makes them less prone to express their feelings through complaints. Evidence shows that noise complaints had become criminal in some cases when the complainants illegally solved the issue by attacking the noisemakers or objects that emit noise. This shows that most Indonesians do not have adequate knowledge of noise and are hesitant to rely on the fairness of the court process. The study shows that several complaints and tribunal's prominent cases shifted into disputes about whether the noise was validly measured, indicating that the stakeholders did not fully understand the standard and procedures for determining noise.

The 18 lost from 41 legal cases, 44% of the total case, indicated that the tribunals supported the noisemakers. While the 16 legal cases in which the litigants sew local municipality instead of the noisemakers indicated that the local government violates the regulations. This led to apathy among the Indonesians, resulting in fewer noise complaints and court cases than the number of noise occurrences in communities. There are difficulties enforcing noise regulations when outdated, measurement procedures are unclear, and reporting procedures and feedback are complicated. Plus, indications that tribunals supported the noisemakers and the government violated the regulations. Therefore, the Indonesian government shall learn from other countries by implementing updated and detailed rules, providing direct and responsive reporting channels, promoting citizens to embrace legal noise complaints, and implementing environmental courts where judiciary experts tackle tribunals.

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Author contributions

CEM: Conceptualisation, Methodology, Data curation, Final analysis, Writing-Original draft, Writing-Review & Editing, Visualisation, Funding acquisition; ASS: Methodology, Data Bandung curation, Writing-Review & Editing; SSU: Methodology, Data Yogyakarta curation, Writing-Review & Editing; IF: Methodology, Data Medan curation; RD: Methodology, Data Palembang curation; MIRW: Methodology, Data Jakarta curation; AR: Methodology, Data Banjarmasin curation; AK: Methodology, Data Makassar curation; NWMM: Methodology, Data Denpasar curation; YBM: Methodology, Data Kupang curation; RJY: Methodology, Data Clustering, Pre-analysis, Validation; ZAR: Methodology, Data Clustering, Pre-analysis, Validation.

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