

# The sound of Indonesian cities

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## The sound of Indonesian cities

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## ABSTRACT

An initial study to map the unique sound variations in ten cities in Indonesia was carried out. The data was provided by local urban experts. Each expert provides resumes of the three most favourite public places and the typical sound environment in each place. Using the classification of public places by Carr (1992) and a modest statistical analysis, the study uncovered that parks are the most famous place to visit (40%). The 2<sup>nd</sup> and 3<sup>rd</sup> place is square/plaza (20%) and memorial sites (13%). As an archipelago, waterfronts (10%) are also a favourite public place. One hundred and thirty-four sound sources were identified from thirty favourite places in the observed cities. Given the rich culture and vibrant tradition, the sound in each city shall be unique. Unfortunately, in parks and squares, human activities and traffic are the most dominant sources of sound. Meanwhile, natural sounds like water and birds are the least heard. Even along the waterfront, the sound of water is masked by the dominance of human noise, traffic noise, and boat noise. It is ironic because people visit these places for recreational and leisure purposes.

## 1. INTRODUCTION

The current shape of Indonesian cities is a transformation from the initial state when the city was formed. The transformation occurs from a traditional city structure to the modern city, both physically and in the conception of the urbanity of its citizens, from the traditional-informal conception to the modern-formal conception [1]. It has also changed the level of loudness and noise that is typical in these cities. Sound is one of the characteristics of the urban environment and has become part of the cultural heritage of an intangible place. Sound can provide unique characteristics for the urban environment and have a positive effect on the residents [2].

Mapping the sound changes in a city is not easy because of various public and private functions in a city that is continuously transforming. In this complexity, we can localise the sound mapping only in the downtown area, which can be considered to represent the city's identity. More narrowly, this mapping indeed cannot be separated from the existence of public space in the city. As a representative of the city, the mapping of city noise levels can be done at points where the city's public spaces are located, because they are considered to represent the city's noise. In big cities like Jakarta, the capital of Indonesia, there are many public spaces in the city. On the contrary, in smaller cities, the number is limited. Most importantly, the mapping should not only focus on identifying sounds that are considered harmful, but also sounds that can have a positive effect on urban residents and sounds that can show the character of a city [2].

However, it is evident that most Indonesians do not pay attention to sound and noise. Although Indonesian cities are noisy [3], noise is not an issue for most Indonesians [4]. Thus, it is urgent to educate Indonesians that sound affects humans physically, psychologically, cognitively, and behaviorally [5]. Noise might be an issue if presence in offices, schools, or residential areas, but so far, it is not an issue in public spaces. Urban public spaces, which represent the face of a city, shall ideally have a unique acoustic environment to show the character of the city. But in a noisy condition, the unique sound is possibly masked by noise.

There are many definitions of urban public spaces, including physical and psychological definitions. Here, physical definitions are used. Historically, public space has been defined as open space that can be freely accessed by all citizens, such as roads, parks, or plazas or square [6]. The definition of public spaces is not always in the form of open spaces managed by local governments, but also in partnerships between local government and private sectors, as well as those purely managed by private sectors. Later, Carr et al. [7] put more emphasis on the character of the activity, location, and formation process. He and the team grouped public places of a city in 11 types – i.e., public parks, squares and plazas, memorial sites (monuments, statues and the like), markets, streets, playgrounds, open spaces of the local community (gathering places), green lanes, shopping places in buildings, meeting rooms in residential environments, and waterfronts.

As the unique sound in public places slowly disappears in line with the arrival of modern cultures, a preliminary study investigating and collecting the remaining unique sound of Indonesia (if there are) was conducted and reported here. The study was triggered by a phenomenon that most Indonesians do not aware of the sound environment, and the fact that Indonesian cities are noisy, which masks the city's unique sound. The objective of the study is to map types of public places mostly visited in Indonesian cities and sound sources that build the acoustic environment of the places. It is an initial study to uncover and bring up again the unique sound of Indonesian cities.

## 2. METHODS

Ten cities were selected to represent Indonesian cities – i.e., Medan, Palembang, Jakarta, Bandung, Yogyakarta, Surabaya, Banjarmasin, Makassar, Denpasar, and Kupang. All are capital cities of Provinces that cover the Western to the Eastern part of Indonesia – i.e., Sumatera Utara, Sumatera Selatan, Daerah Khusus Ibukota, Jawa Barat, Daerah Istimewa Yogyakarta, Jawa Timur, Kalimantan Selatan, Sulawesi Selatan, Bali, and Nusa Tenggara Timur, respectively. Based on ethnicity, these cities are expected to have a unique sound environment in their public places. The data was collected quantitatively from local urban experts. An expert in each city was appointed to provide data about 3 most favorite public places and the unique sound that emerges in the area. Types of urban public spaces by Carr et al. [7] were referred to sort out public places. The data were analysed using a modest statistical method to observe the trends.

## 3. RESULTS AND DISCUSSION

Public parks are regarded as the most favourite public spaces that are visited by urban communities of the 10 cities (Table 1 and Figure 1). However, the ‘park’ terminology used here might not be physically similar to parks that are found in other countries, especially in temperate climate regions, where parks are covered with large grassy areas to sit down or lay down. Indonesians public parks are parks composed of tall trees, a small playground, and a limited grassy area combined with water bodies or artificial fountains. Some are merely in the form of open ground areas such as Lapangan Monas in Jakarta and alun-alun in Bandung.

*Table 1: The three most visited public places in 10 Indonesian cities*

Cities	Public places (Carr et al. 1992)		
	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>
Medan	Taman Merdeka (park)	Taman Sri Deli (park)	Taman Beringin (park)
Palembang	Plaza Benteng Kuto Besak (square)	Kolam dan Taman Kambang Iwak Besak (park)	Pedestrian Sudirman (street)
Jakarta	Lapangan Monas (park)	Taman Lapangan Banteng (square)	Bundaran Hotel Indonesia (memorial site)
Bandung	Alun-alun Bandung (square)	Jalan Braga (street)	Taman Badak (park)
Yogyakarta	Malioboro (street)	Tugu (memorial site)	Alun-alun Kidul (square)
Surabaya	Taman Bungkul (park)	Tunjungan Plaza (shopping centre)	Taman Flora (park)
Banjarmasin	Ruang Terbuka Hijau Siring Tendean (waterfront)	Pasar Terapung Kuin Utara (floating market)	Taman Kamboja (park)
Makassar	Pantai Losari (waterfront)	Lapangan Karebosi (square)	Monumen Mandala (memorial site)
Denpasar	Lapangan Niti Mandala Renon (park)	Lapangan I Gusti Ngurah Made Agung (park)	Taman Kota Denpasar (park)
Kupang	Taman Nostalgia (park)	Pantai Tedys (waterfront)	Bundaran Tiroso (memorial site)

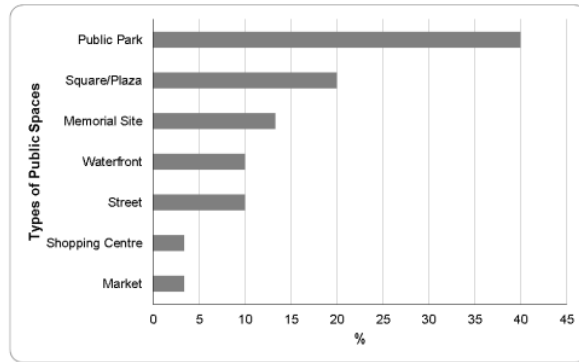


Figure 1: Types of the most visited public spaces in 10 Indonesian cities

Because Indonesia is an archipelago, waterfronts are also a common form of public places. However, it is challenging to group the type of public places in Banjarmasin. Two of their favourite places are related to waterfronts. But one is a market with other activities that exist on a waterfront, and the other is a pure market using boats or floating markets on the river without any other activity instead of selling and buying. Based on the main activity in each place, the first is categorised a waterfront, and the second is categorised a market (Figure 2). Public places in the form of market or shopping precinct are not so popular. It can only be found in Banjarmasin and Surabaya.



Figure 2: Two most visited public places in Banjarmasin are waterfronts combined with a market (left) and floating markets (right) (photos credit A. Rahman & C.E. Mediastika)

Many activities can be found in those public places as simple as relax sitting and chatting, culinary, gathering, sporting, playing, enjoying music performance, light shopping to the protesting of political activists. It is interesting to know that 84% of activities in public places are communal or social activities (Figure 3). It is dissimilar to activity in public parks of other countries, mostly dominated by individual activity or peer but in a small group [8]. In Indonesia, social activities that involve a large number of people are commonly found in public parks. It can be a large group of aerobics, gathering of bicycling community, arisan, etc. Arisan is a social gathering whose members contribute to and take turns at winning an aggregate sum of money. It is a social gathering type that is particularly found in Indonesia. Because the primary activity is social or communal, which mostly produces noise, it is no wonder that noise is not an issue.

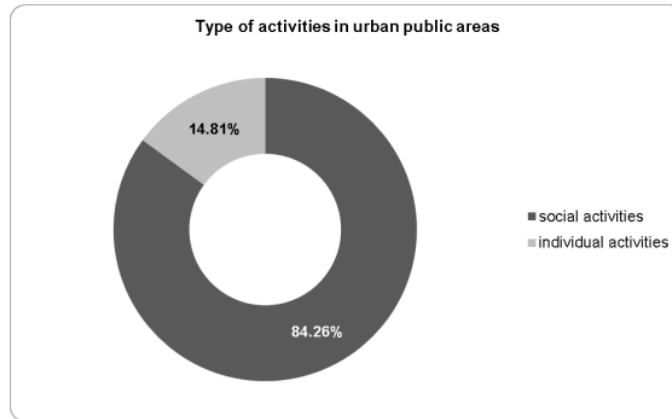


Figure 3: Types of activities in urban public areas

In the 30 most visited places, 134 types of sound sources were identified (Figure 4). The primary source is human activity, which includes people talking, children playing, music, etc. The second dominant is traffic because most public places are not too large to cause nearby traffic noise to slow down adequately within the place. The traffic noise in the public places includes noise from boats as 10% of the most visited public places are categorised as waterfronts. In public parks and waterfronts, where natural sounds such as birds chirping, wind blowing, and water sound are ideally dominant, were found to be the opposite. Sound of human activity and traffic has masked the natural ones. The unique sound of different boat types [9] may develop a unique sound environment of waterfronts in Palembang, Banjarmasin, Makassar, and Kupang. It needs further study to investigate this.

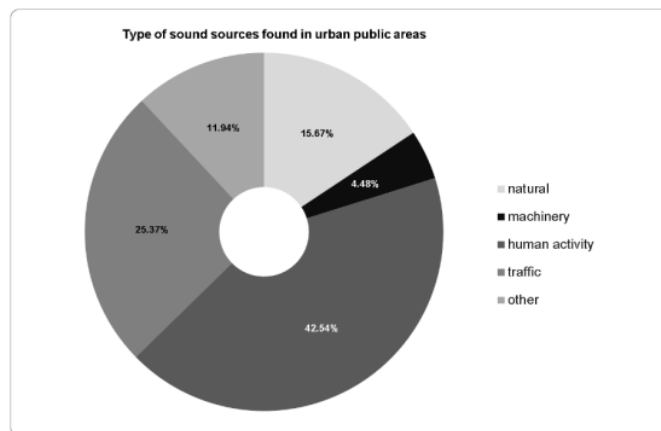


Figure 4: Types of sound sources in urban public areas

#### 4. CONCLUSION

The initial study of mapping the sound environment of Indonesian cities concludes that,

- Parks are the most favorite places for city dwellers to spend their free time.
- People mostly visit parks for communal or social activities rather than individual activities.

- The acoustic environment of public places in Indonesian cities is dominated by human activities, including people talking, children playing, music, etc. The second dominant is traffic, which penetrates public places because most places are not large enough to provide natural noise reduction with distance.
- The acoustic environment is considered not specific in every place, making most public places in Indonesian cities are perceived similarly by visitors. Unique sounds have disappeared due to the loss of unique activities in each city. Uniformity might also be caused by the current noise that covers the unique sound.
- Even along the waterfront, the sound of water is masked by the dominance of human noise, traffic noise, and boat noise.
- The noisy sound environment in public places is deemed ironic because people visit these places for recreational purposes.

These findings will be referred to explore the possibility of creating unique sounds of 10 Indonesian cities in which, later, can also be referenced by other Indonesian cities.

## 5. ACKNOWLEDGEMENTS

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