BANDUNG, INDONESIA

URBAN TRANSPORT PROFILE

December 2024

Asian Transport Observatory

Summary

Bandung, with a population of 8.5 million in 2020, faces significant urban transport challenges. Despite experiencing economic growth, with GDP per capita doubling from $4,000 to $8,000 between 2000 and 2015, Bandung's transport infrastructure remains underdeveloped. The city's road infrastructure is limited. Furthermore, Bandung lacks any rapid transit system, relying heavily on private modes of transport, which account for 95% of trips. In Bandung, motorcycles dominate the roads, making up roughly 75% of personal trips and two-thirds of all vehicle traffic in significant transport corridors. This over-reliance on private vehicles, particularly motorcycles, contributes to congestion, air pollution, and safety concerns.

Although Bandung has a relatively high number of buses (6,421) operating within the city, public transport usage remains low. This can be attributed to several factors, including the lack of a comprehensive rapid transit system, limited public transit infrastructure, poor access and connectivity and the convenience and affordability of motorcycles. Consequently, only 44% of the population has convenient access to public transport, which is higher than the average in South East Asia of 21%. Furthermore, access to essential services and spaces remains limited, with only 21% of the population having access to both healthcare and schools, and a mere 6% having access to car-free areas.

Recognizing these challenges, the city of Bandung, in collaboration with the Indonesian Ministry of Transport and GIZ, is exploring implementing a city-wide bus rapid transit (BRT) system. This initiative aims to provide a safe, sustainable, and efficient public transport option, encouraging a shift away from private vehicles. The Indonesian government has also set ambitious targets for electrifying public transport, aiming for 90% electrification by 2030 and 100% by 2040. These efforts demonstrate a commitment to improving urban mobility and reducing the environmental impact of transportation in Bandung.

About the Urban Transport Profiles

The Asian Transport Observatory (ATO) Urban Transport Profiles provide a comprehensive snapshot of urban transport dynamics for 40 cities in the Asia-Pacific region. These profiles compile data from official city reports, relevant sources from reputable research organizations, multilateral development institutions, international experts' reports, secondary studies, and all other research endorsed or guided by city governments. Featured cities are benchmarked against other cities, where data is available, in the region, subregional averages — and in some cases, global cities — offering valuable comparative insights. In cases where data is not available, placeholders for the graphs are retained. Each profile also includes a curated list of relevant urban transport policies and documents, presenting a concise overview of the city's policy framework. By covering a wide range of transport-related indicators, these profiles serve as a critical resource for understanding and improving urban transport systems.

Disclaimer

General

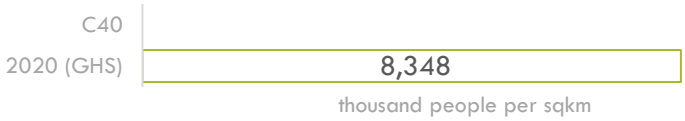
Population 8.5 million
(2020) (GHS)

Land area 1,014 sqkm
(2015) (GHS)

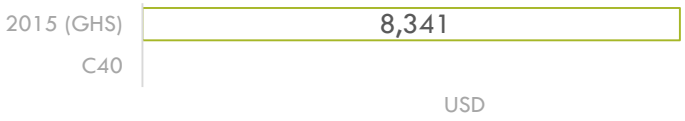
Population density 8 thousand per sqkm
(2020) (GHS)

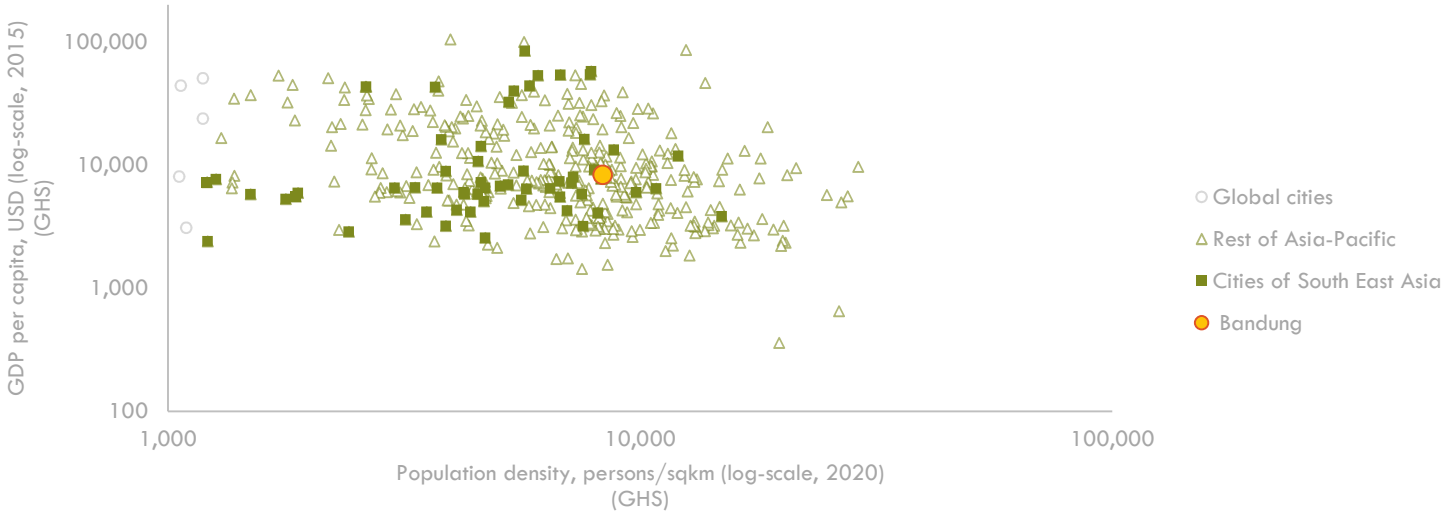
GDP per capita 8 thousand USD
(2015) (GHS)

Population density



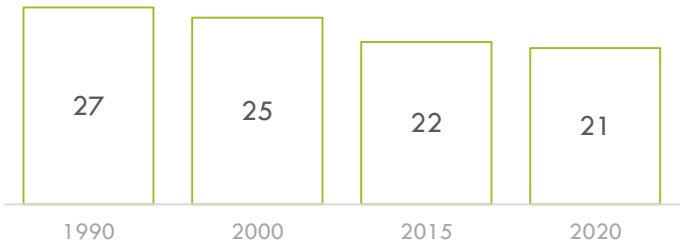
GDP per capita



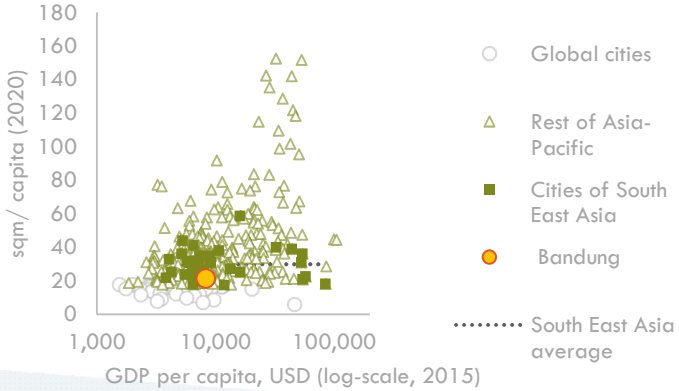


Urban Form and Structure

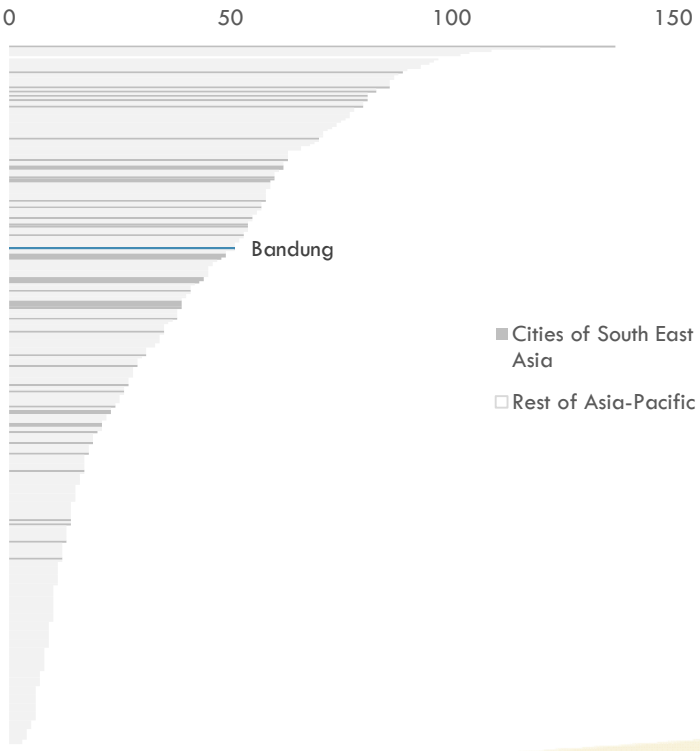
Builtup area per capita
sqm per capita (GHS)



Builtup area per capita
(GHS)

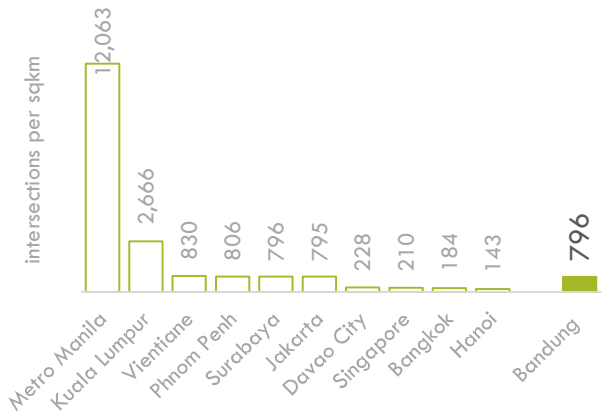


Mean block density
blocks per sqkm (2020) (ITDP)



Intersection density

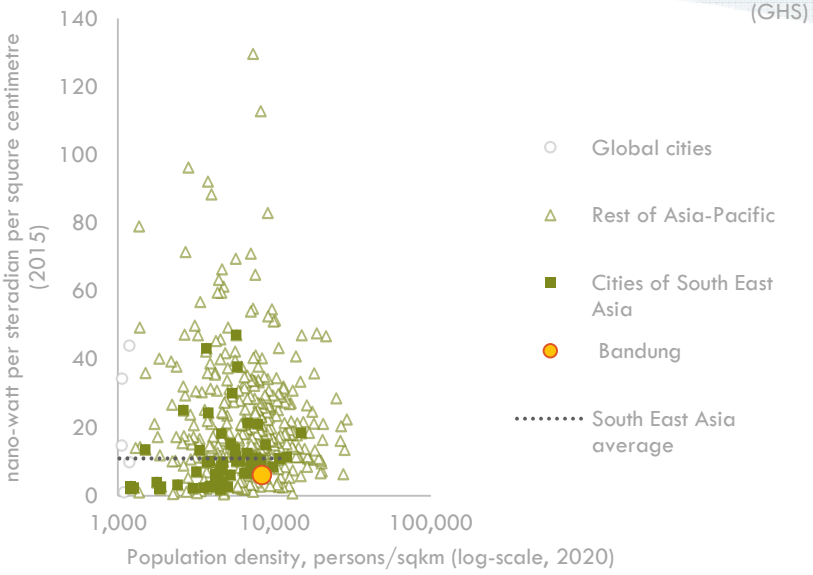
(Oke et.al. (2019) (OSM))



(a) Night time light intensity studies illustrate urban forms and patterns by mapping human activity, infrastructure, and connectivity, offering insights into urban sprawl, density variations, and transport network

Night time light intensity (a)

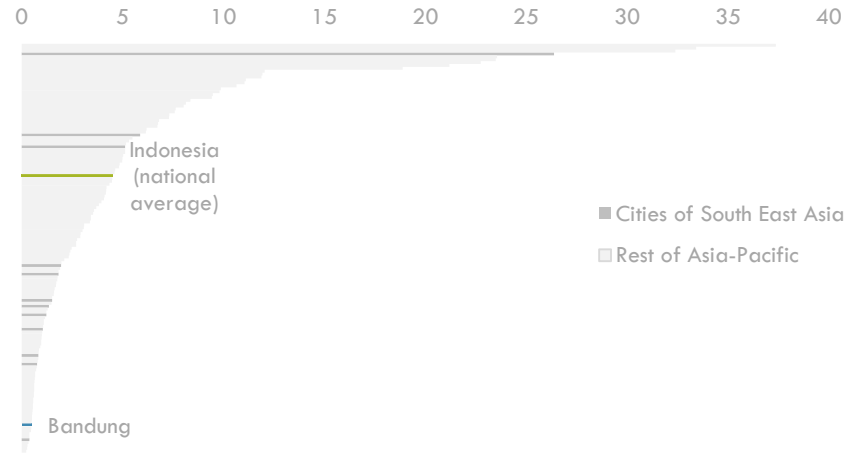
(GHS)



Urban Transport Infrastructure

Road availability

kilometers per thousand population (2019) (Oke et.al. (OSM) and GHS)

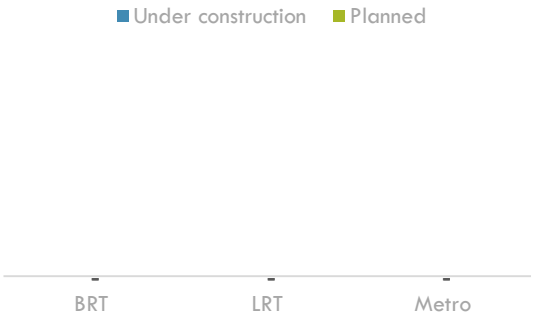


Road kilometers 1,236 kilometers

(2016) (Primary data)

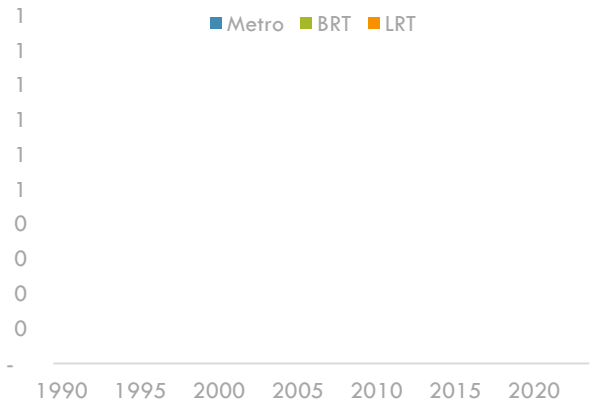
Rapid transit infrastructure

(2024) (TE)



Rapid transit infrastructure

kilometers (ITDP, Primary data)



BRT none

LRT none

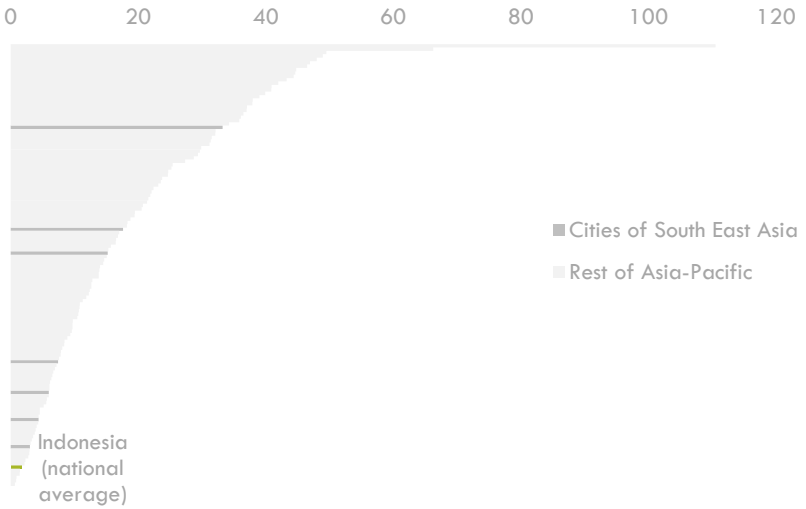
Metro none

Total none

(2023) (ITDP)

Rapid transit availability

kilometers per million urban population (2021) (ITDP, Primary data)

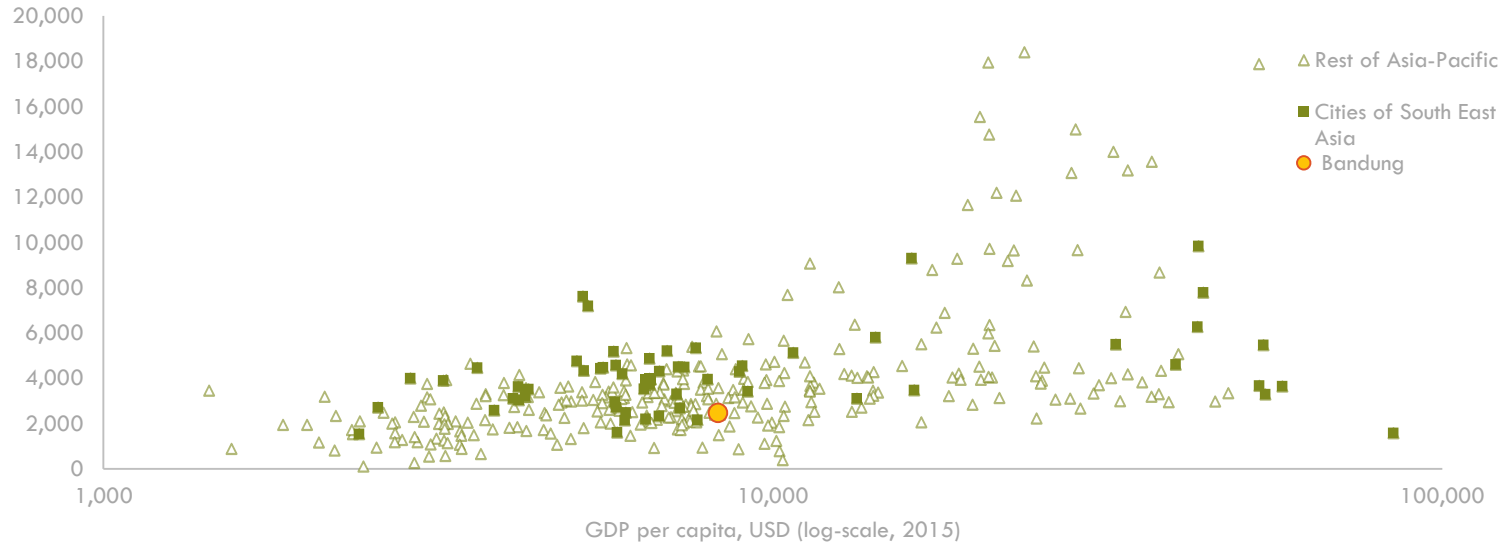


Approximate transit coverage n.d.

Transport Activity and Services

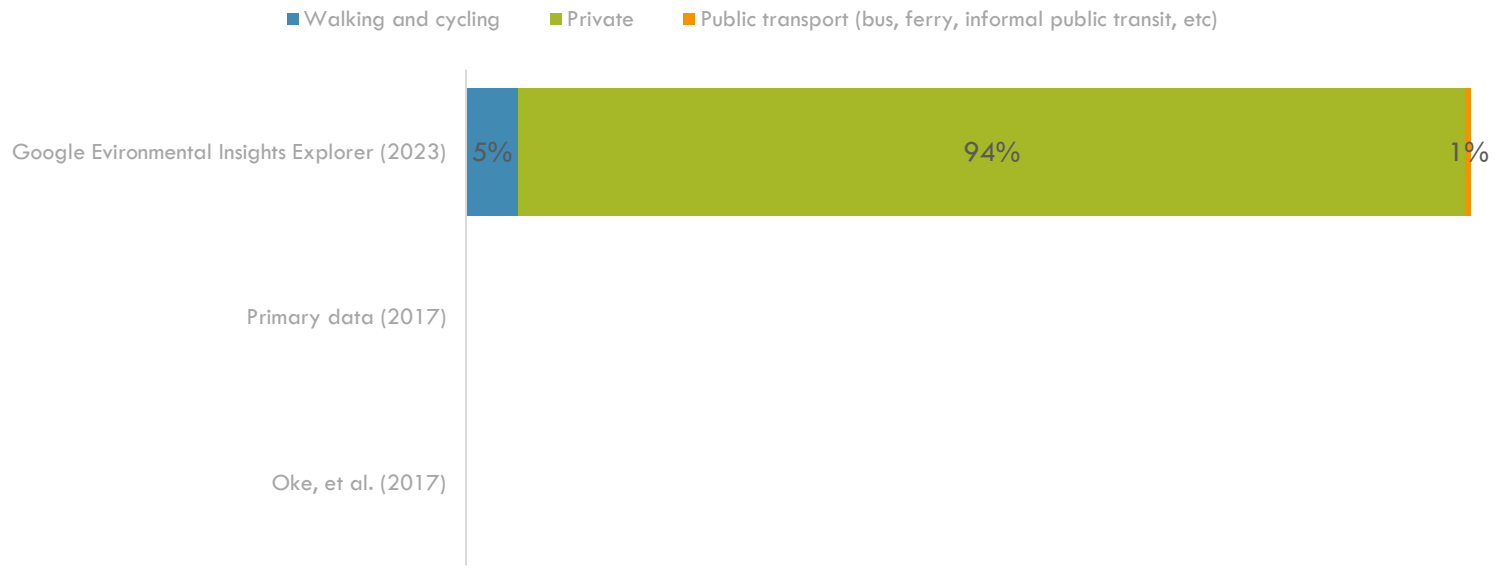
VKT per capita

Vehicle-kilometer per capita (2022) (ClimateTrace)



Trips Mode share (b)

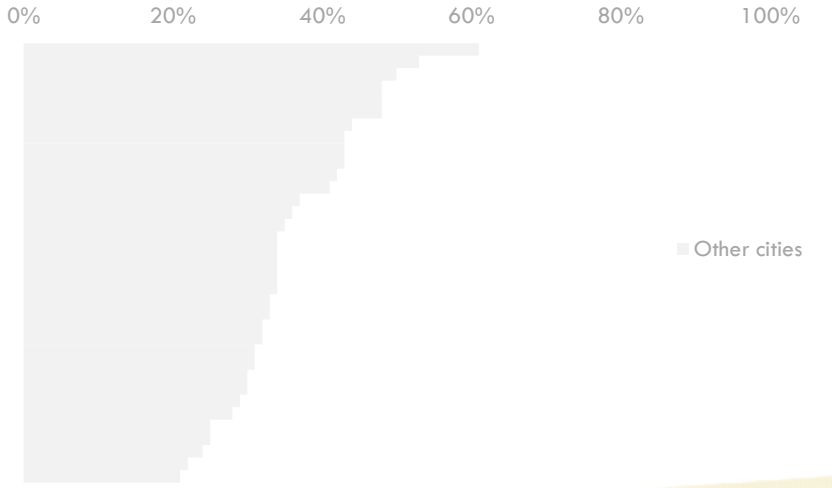
Share, %



(b) The methodologies used for mode share assessments vary across different studies, making direct comparison of results inadvisable. Specifically, the Google Environmental Insights Explorer derives its assessments from mobile data analysis, while primary data studies typically rely on survey-based approaches. In contrast, the study by Oke et al. utilizes a combination of secondary data sources.

Congestion level

Percent increased travel time vs. uncongested conditions (2021) (TomTom)

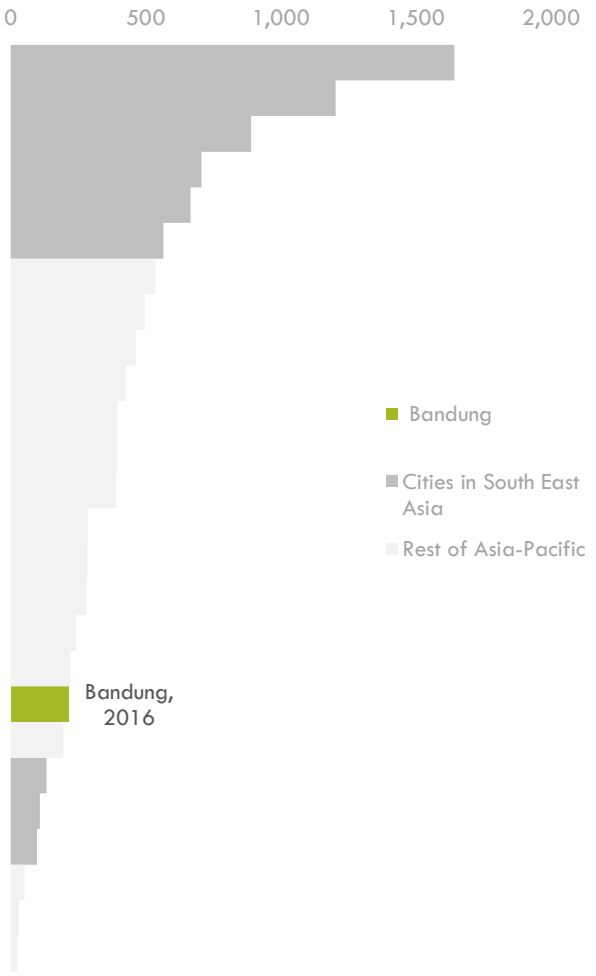


Metro ridership n.d.

Congestion ranking n.d.

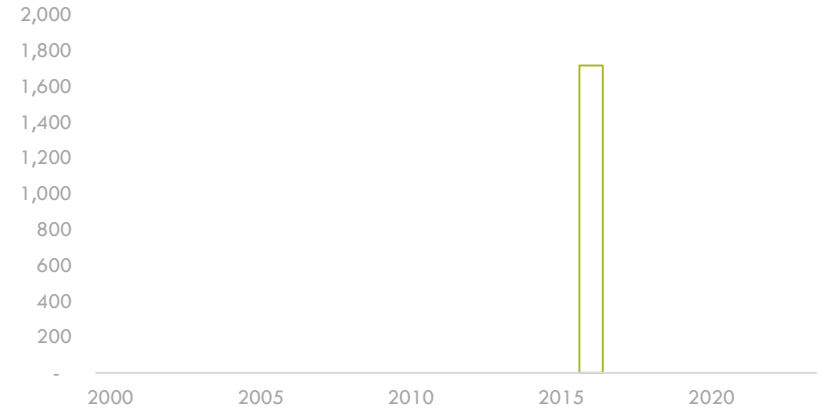
Vehicle motorization

Vehicles per thousand population (Primary data)



Vehicles registered (c)

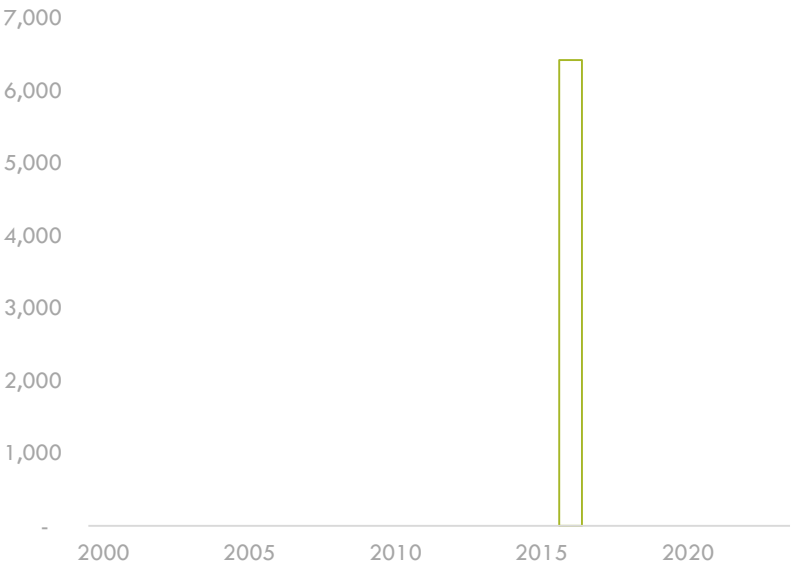
Thousand vehicles (Primary data)



Vehicles considered: car, 2W

Bus fleet (operational)

Bus (and other public transport) fleet (Primary data)

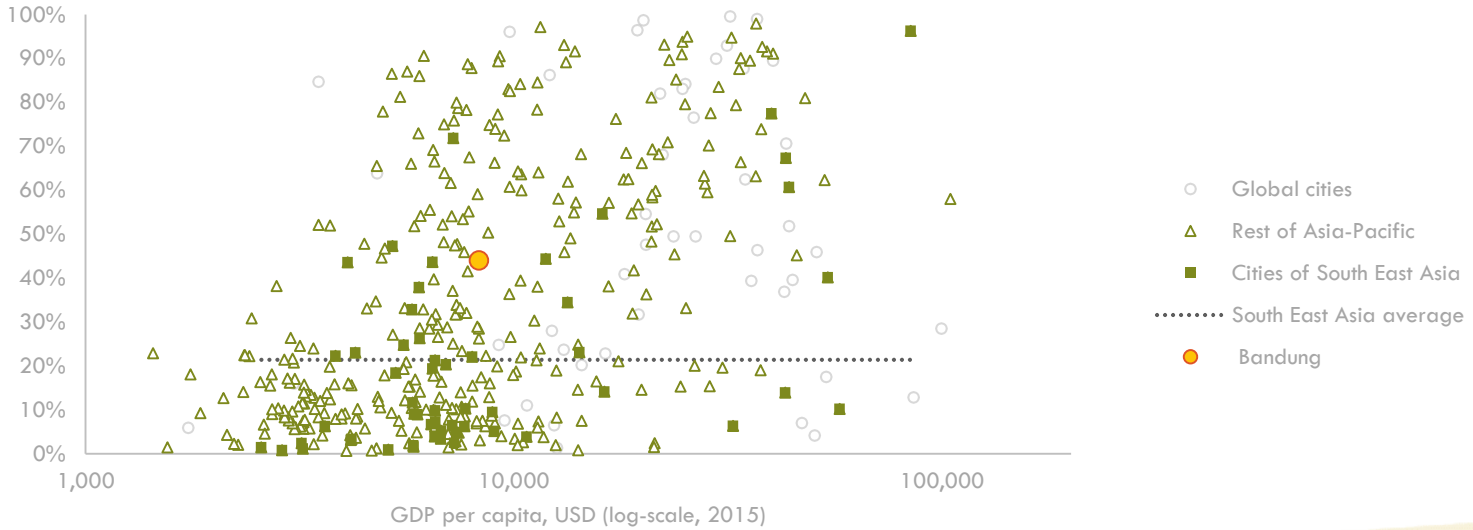


(c) It should be noted that, in most cases, scrapped vehicles are not de-registered, which may result in slightly inflated numbers.

Urban Access

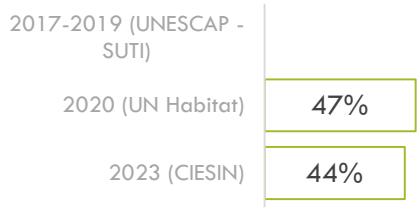
Access to urban public transport

Share of population with convenient access to public transport (2023) (CIESIN)



Access to urban public transport (d) - by source

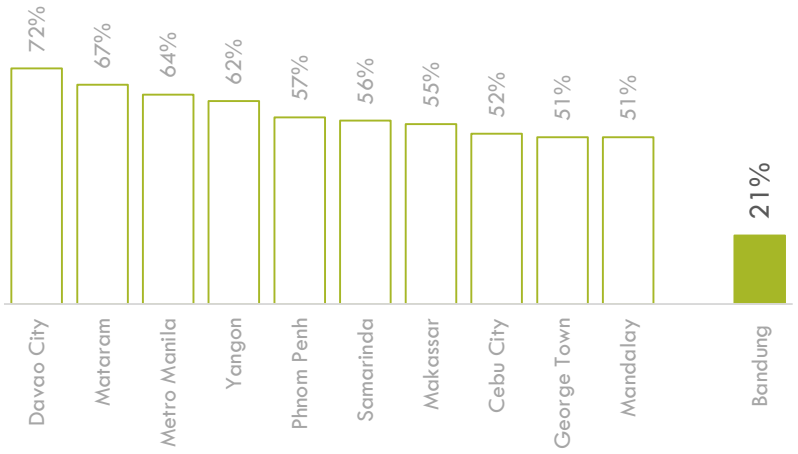
Share of population with convenient access to public transport



(d) "Access to urban public transport" is computed as share of population who live within a walking distance (along a street network) of 500m to a low capacity public transport system (eg bus, tram) and 1000m to a high capacity public transport system (eg trains, ferries, etc). Only public transport stops which are mapped are included in the analysis which may include both formal and informal stops. Many cities (mostly in the developing countries) have informal public transport systems which are not fully mapped - meaning that they may record higher levels of access to public transport than reported in this dataset.

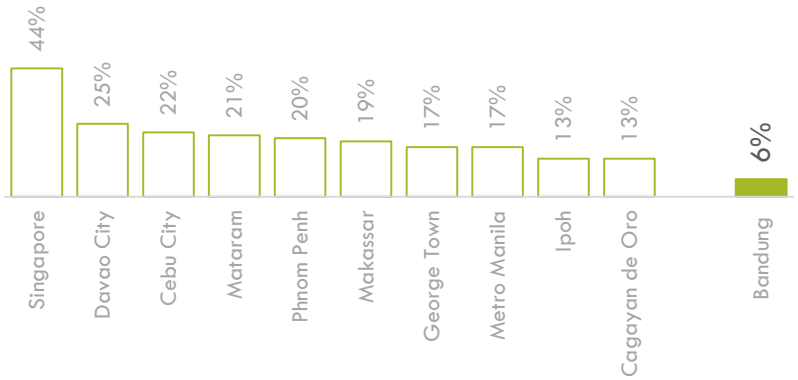
People near services (both healthcare and schools) (e)

(Share of population) vs. highest 10 cities in South East Asia (2020) (ITDP)



People near car-free places (f)

(Share of population) vs. highest 10 cities in South East Asia (2020) (ITDP)

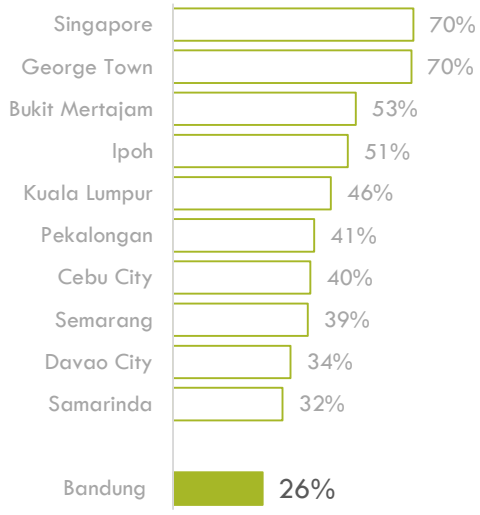


(e) People Near Services measures the percentage of the city's population living within a 1km walk of both healthcare and education. These services are especially vital for babies, toddlers, and their caregivers, who should be able to reach them on foot.

(f) Percentage of the city's population that lives within 100m of a car-free place. These car-free places include pedestrian-only alleyways, nature trails, playgrounds, pedestrianized squares, and anywhere else that is not used by cars and trucks (except, in some cases, emergency vehicles).

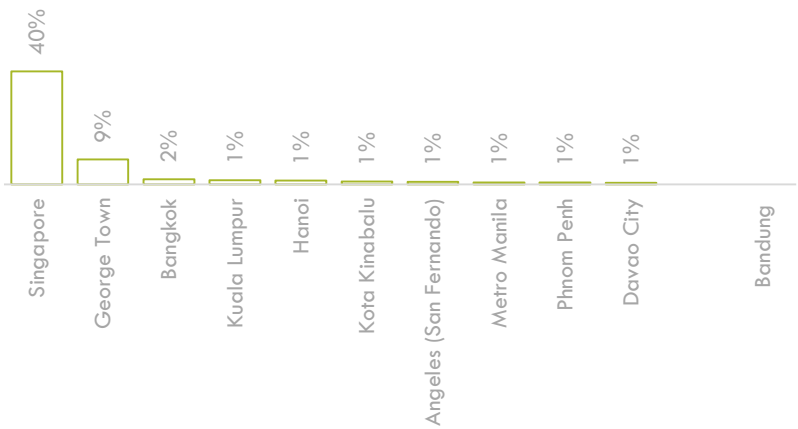
People near open public space

(Share of population) vs. highest 10 cities in South East Asia (2020) (UN Habitat)



People near protected bikelanes

(Share of population) vs. highest 10 cities in South East Asia (2020) (ITDP)



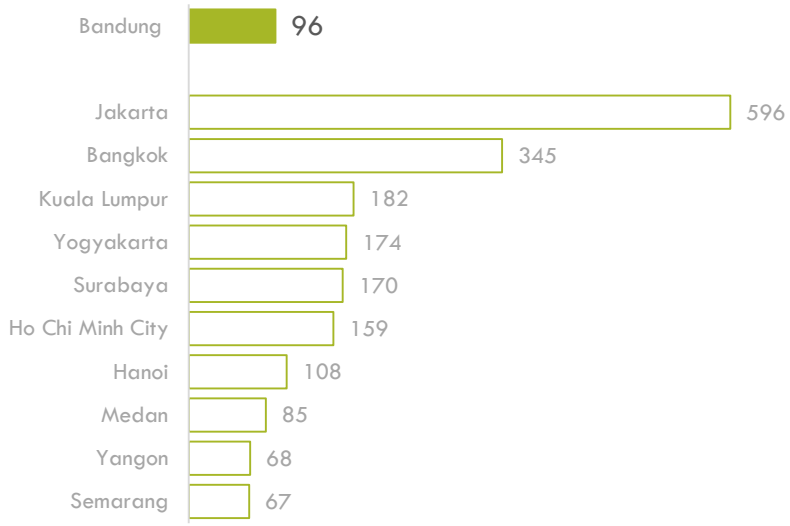
Transport externalities

Road transport - CO2 emissions

Thousand tonnes (2022) (ClimateTrace)

Road transport - N2O emissions

Tonnes (2022) vs. highest 10 cities in South East Asia (ClimateTrace)

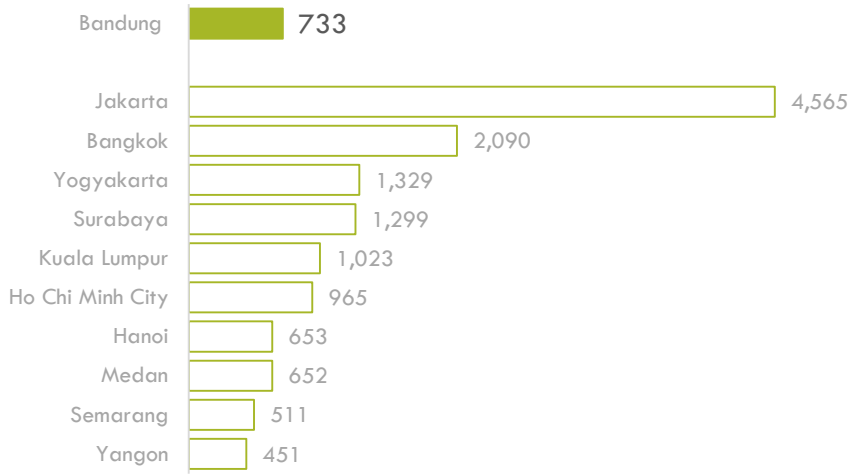


Population exposure to disasters

Share of population (2015) (GHS)

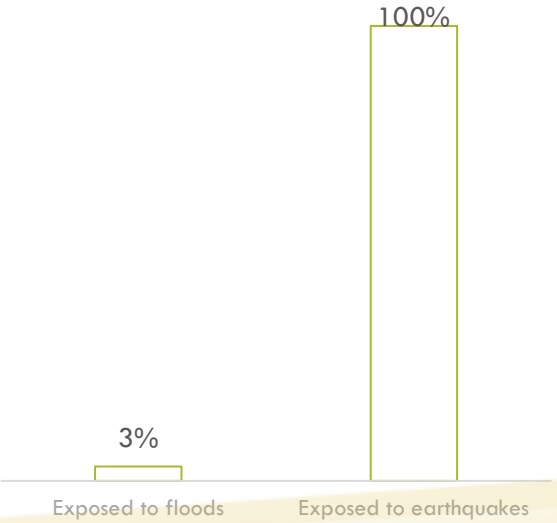
Road transport - CH4 emissions

Tonnes (2022) vs. highest 10 cities in South East Asia (ClimateTrace)



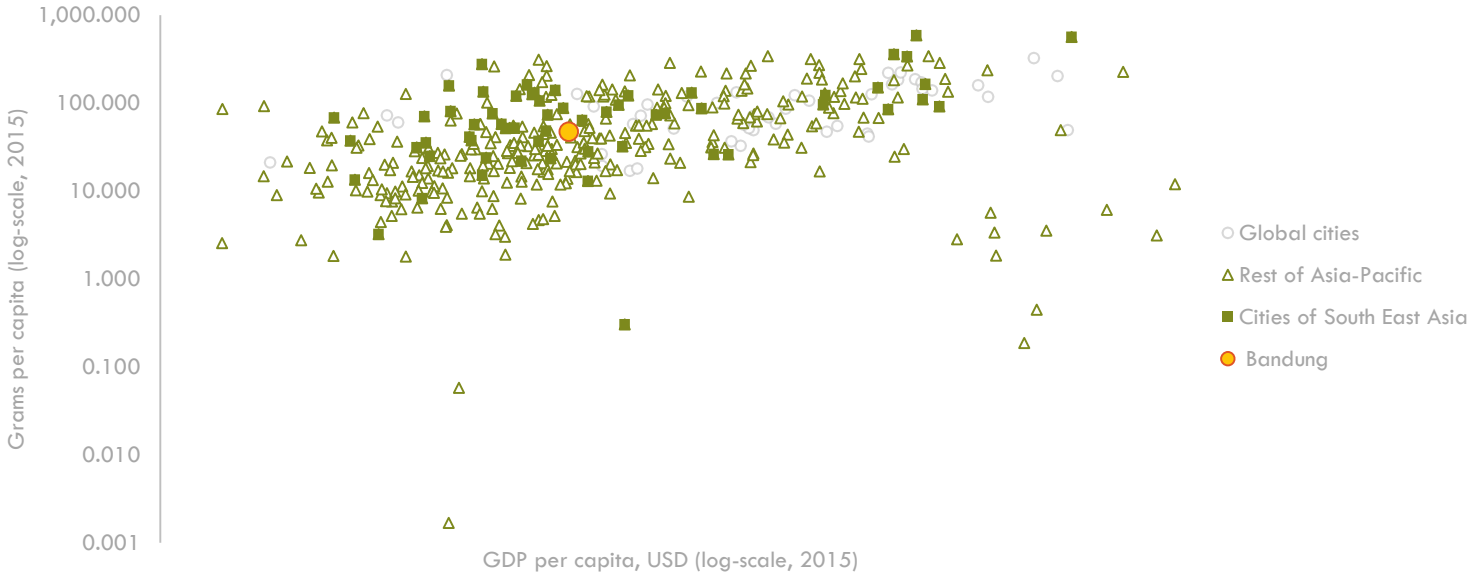
Urban built-up area exposure to disasters

Share of urban area (2020) (GHS)



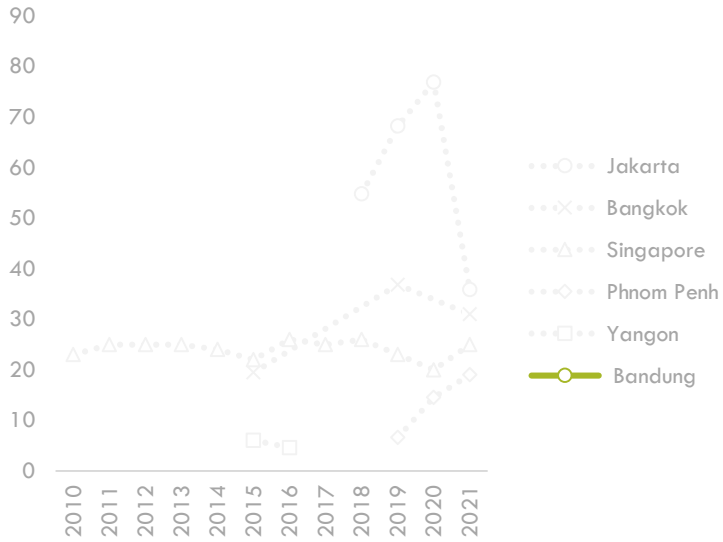
Transport PM 2.5 emissions

(GHS)



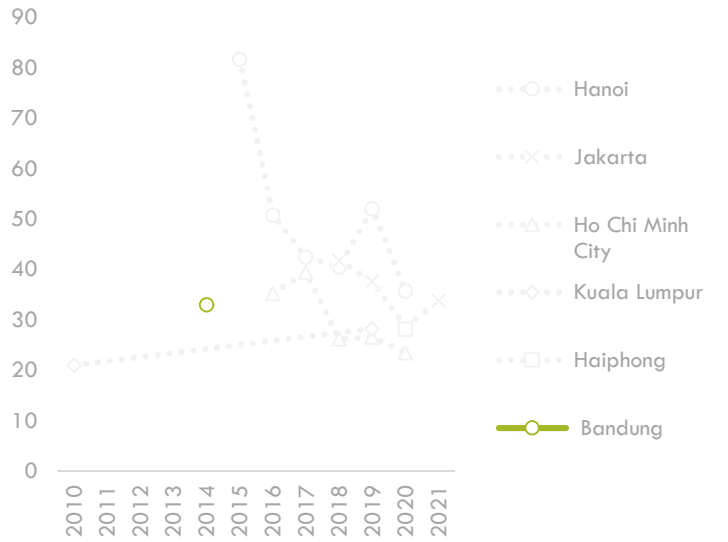
NO2 concentration

ug/m3 (vs. highest 5 cities in South East Asia) (WHO)



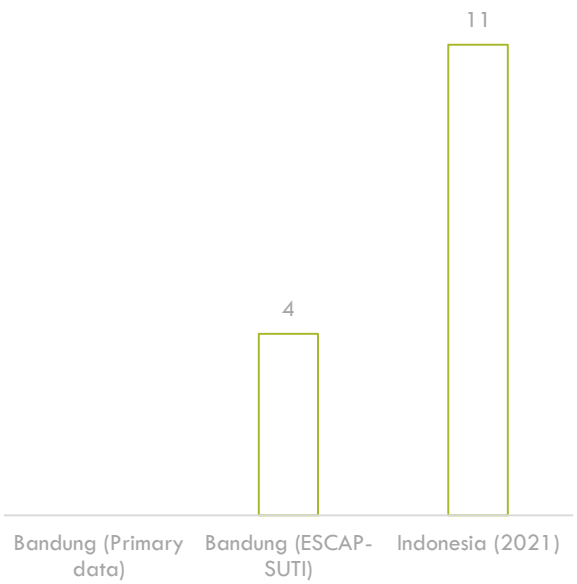
PM 2.5 concentration

ug/m3 (vs. highest 5 cities in South East Asia) (WHO)



Road crash fatality rate

Deaths per 100,000 population



Road crash fatality rate

Deaths per 100,000 population (Primary data)

Transport related Indices

Container port performance index

Index is resultant of the sum of a weighted average of indices for each of the five vessel sizes: feeders (<1,500 TEUs), intra-regional (1,500–5,000 TEUs), intermediate (5,000–8,500 TEUs), neo-Panamax (8,500–13,500 TEUs), and ultra-large container carriers (>13,500 TEU)

Bandung n.d.

Cities in Motion index ranking

The Cities in Motion Index (CIMI) is a composite indicator evaluating cities across nine dimensions—governance, urban planning, technology, environment, international profile, social cohesion, human capital, mobility, and economy—focusing on sustainability and quality of life. It uses a weighted aggregation model to combine sub-indicators for a holistic assessment of urban performance

Bandung n.d.

Critical Infrastructures Spatial Index for the transportation sector

CISI is an index that spatially explicit indicates the coverage or lack of transport infrastructure. The CISI is expressed in a dimensionless value ranging between 0 (no CI intensity) and 1 (highest CI intensity). The index aggregates high resolution geospatial information on multiple CI assets per CI system

Bandung 0.04/1.00

(2020) (GHS)

SUTI Geometric Mean

The geometric mean in the Sustainable Urban Transport Index (SUTI) by UNESCAP is a mathematical approach to aggregate scores across its 10 sub-indicators, including public transport ridership, safety, affordability, air quality, and access to transport

Bandung 49 score out of 100

(2024) (UNESCAP - SUTI)

Cities in Motion index ranking by subcomponent

Ranking (vs. other Cities of South East Asia) (2024) (IESE)

Transport relevant policy documents

Year published	Document name
2005	Bandung City Regional Long Term Development (RPJPD) 2005-2025 (Regulation No. 08 of
2011	Bandung City Spatial Plan 2011-2031
2011	Bandung City RTRW Document for 2011 - 2031
2014	Bandung Urban Mobility Project
2018	Bandung City Regional Medium Term Development Plan 2018 - 2023
2019	Strategic Plan for Bandung City Transportation
2021	Bandung City Transportation Work Plan
2022	Bandung City Regional Government Work Plan (RKPD) 2022

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OSM — OSM. (n.d.). Open Stret Map. https://www.openstreetmap.org/#map=4/21.84/82.79

Primary data — This includes city official reports or MDB/ Research organisation/ Third party report endorced/ accepted/ guided by the city government

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