JAKARTA, INDONESIA

URBAN TRANSPORT PROFILE

December 2024

Asian Transport Observatory

Summary

Jakarta, the capital of Indonesia, with a population of 38.2 million in 2020, faces the complex challenges of urban transportation on a massive scale. Despite significant economic growth, with GDP per capita reaching $17,000 by 2015, Jakarta's transport infrastructure struggles to keep pace with its rapid urbanization. While the city boasts the most extensive rapid transit network in Indonesia, with 253 kilometers of metro, BRT, and LRT lines by 2023, it still falls short in meeting the needs of its vast population. This is reflected in the low percentage of the population (14%) with convenient access to public transport, which is even below the South East Asia average of 21%.

Jakarta's reliance on private vehicles remains overwhelmingly high, with 93% of trips made using private modes of transport. This contributes to severe traffic congestion, with Jakarta ranking 19th out of 387 cities globally in terms of congestion levels. Although the city has made efforts to expand its public transport network, including the TransJakarta BRT system, attracting commuters away from their private vehicles remains a challenge. This is evident in the low public transport mode share, which hovers around 20% despite a target of 60% by 2030.

To address these challenges, Jakarta is pursuing a multi-pronged approach. This includes further expanding its rapid transit network, with 14 kilometers of MRT lines under construction, and implementing policies to encourage intermodal integration and traffic restriction schemes. The Indonesian government's ambitious targets to electrify public transport by 2045 also hold promise for a more sustainable urban transport future in Jakarta. However, a comprehensive understanding of the barriers to public transport adoption, coupled with targeted interventions to improve accessibility, affordability, and reliability, will be crucial in achieving a meaningful shift towards sustainable mobility in this megacity.

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.

General

Population 38.2 million
(2020) (GHS)

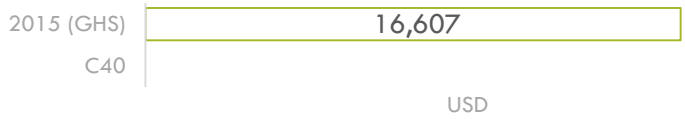
Land area 5,009 sqkm
(2015) (GHS)

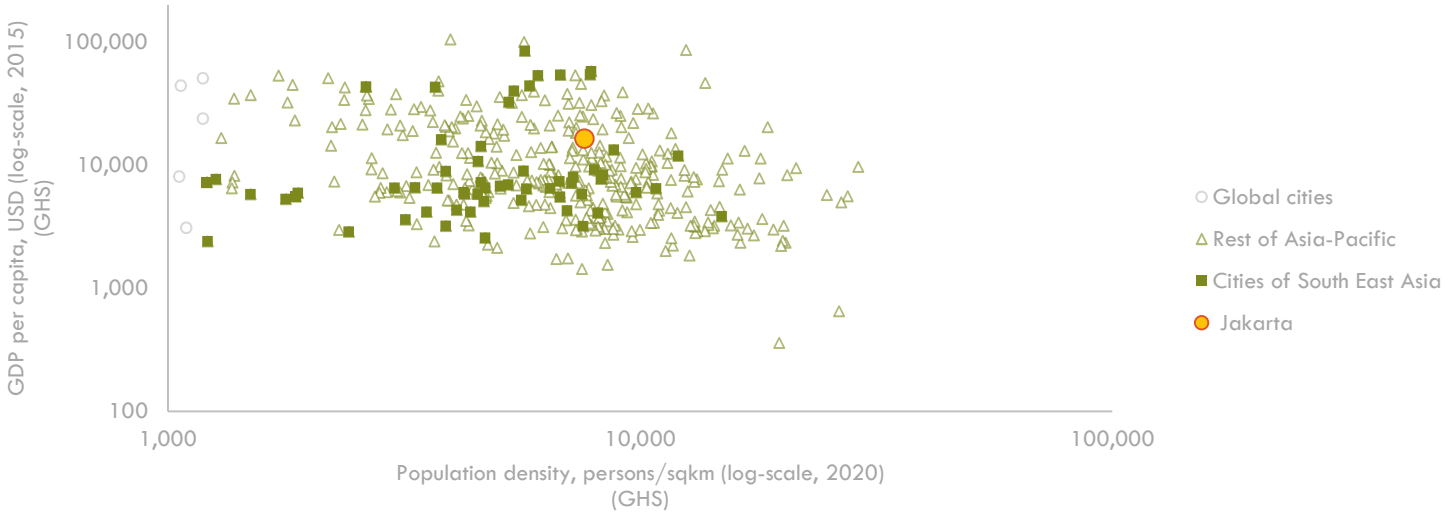
Population density 8 thousand per sqkm
(2020) (GHS)

GDP per capita 17 thousand USD
(2015) (GHS)

Population density

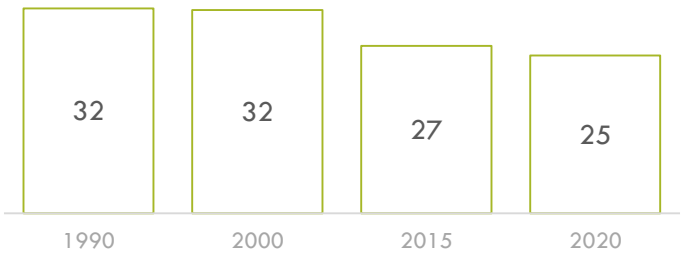
GDP per capita



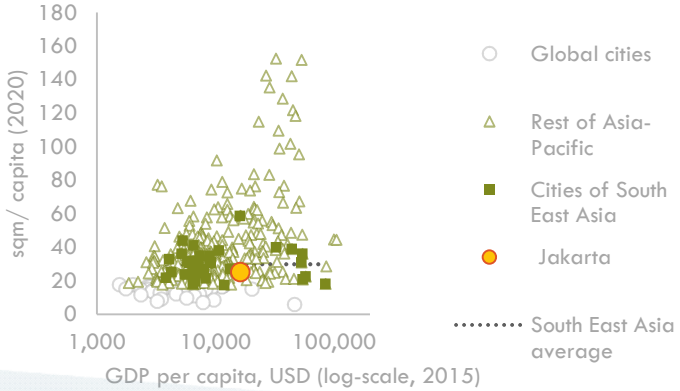


Urban Form and Structure

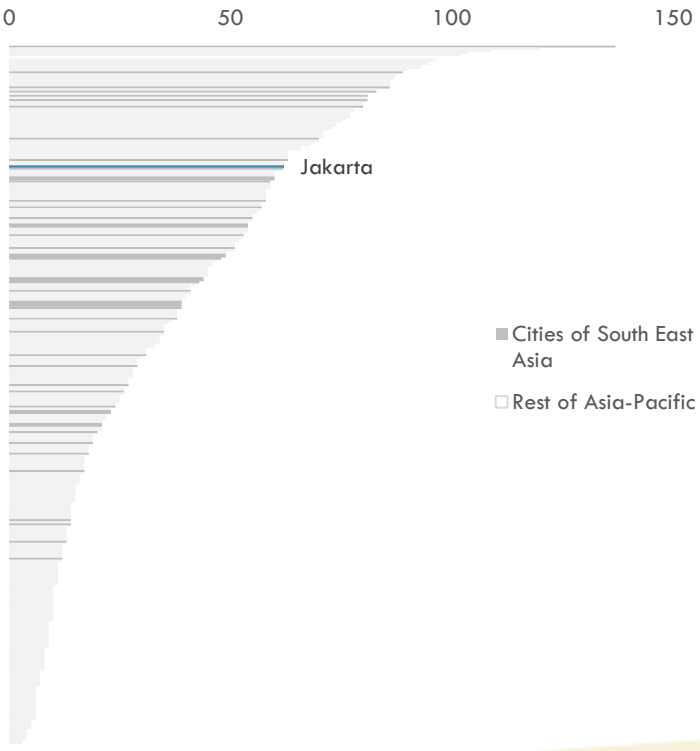
Builtup area per capita
sqm per capita (GHS)



Builtup area per capita
(GHS)

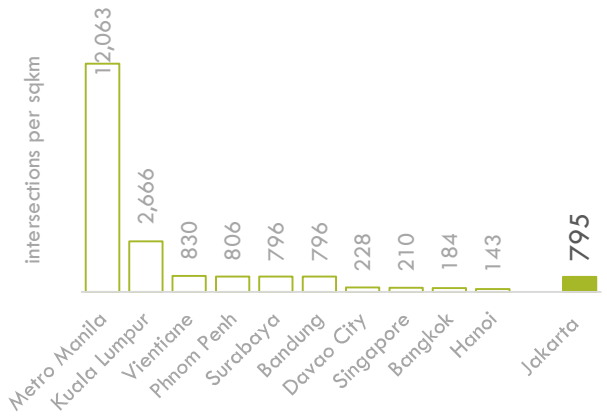


Mean block density
blocks per sqkm (2020) (ITDP)



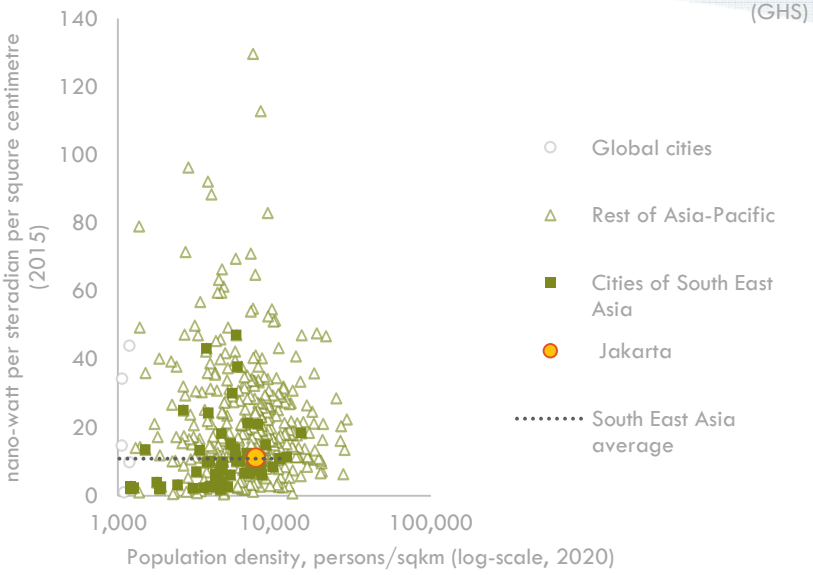
Intersection density

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



Night time light intensity (a)

(GHS)

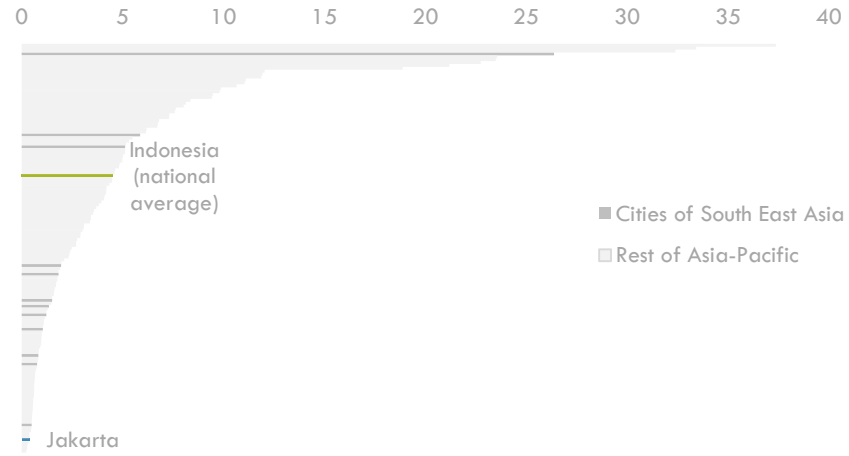


(a) Night time light intensity studies illustrate urban forms and patterns by mapping human activity, infrastructure, and connectivity, offering insights into urban sprawl, density variations, and transport network

Urban Transport Infrastructure

Road availability

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

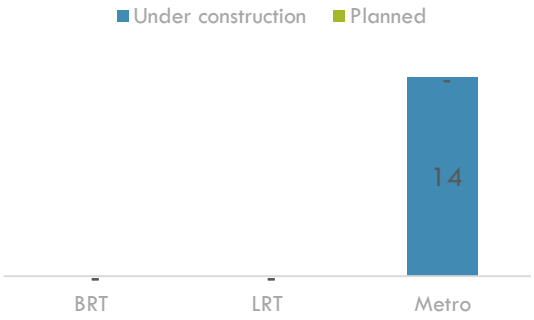


Road kilometers 6,653 kilometers

(2019) (Primary data)

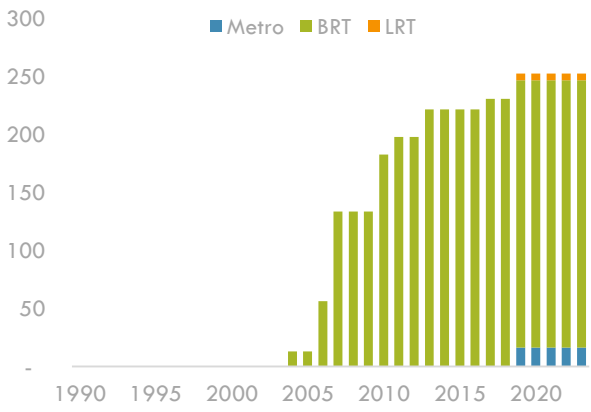
Rapid transit infrastructure

(2024) (TE)



Rapid transit infrastructure

kilometers (ITDP, Primary data)



BRT 231 kilometers

LRT 6 kilometers

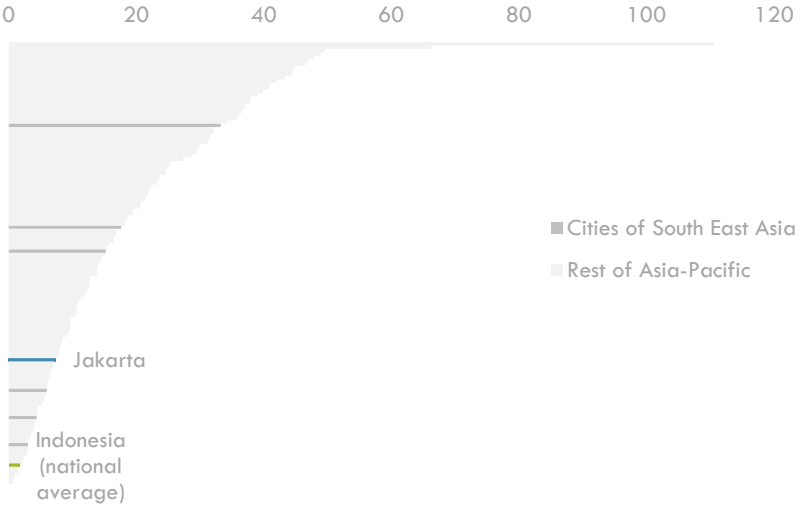
Metro 16 kilometers

Total 253 kilometers

(2023) (ITDP)

Rapid transit availability

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



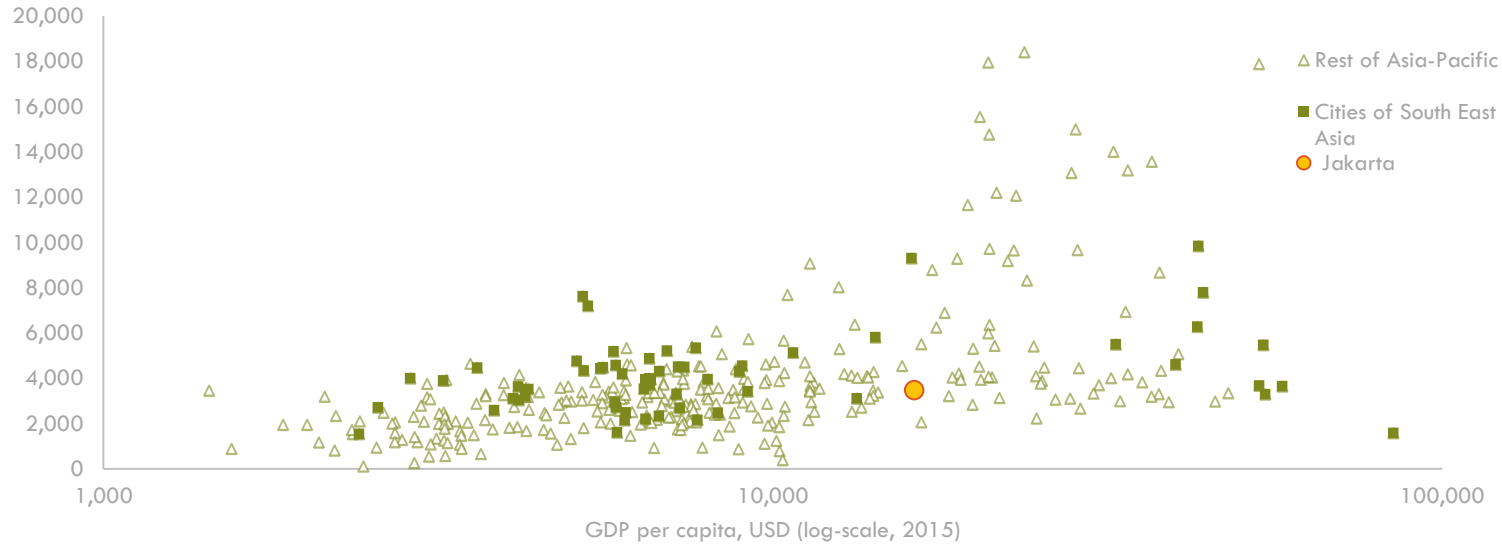
Approximate transit coverage 9% of land area

(2015) (ITDP and GHS)

Transport Activity and Services

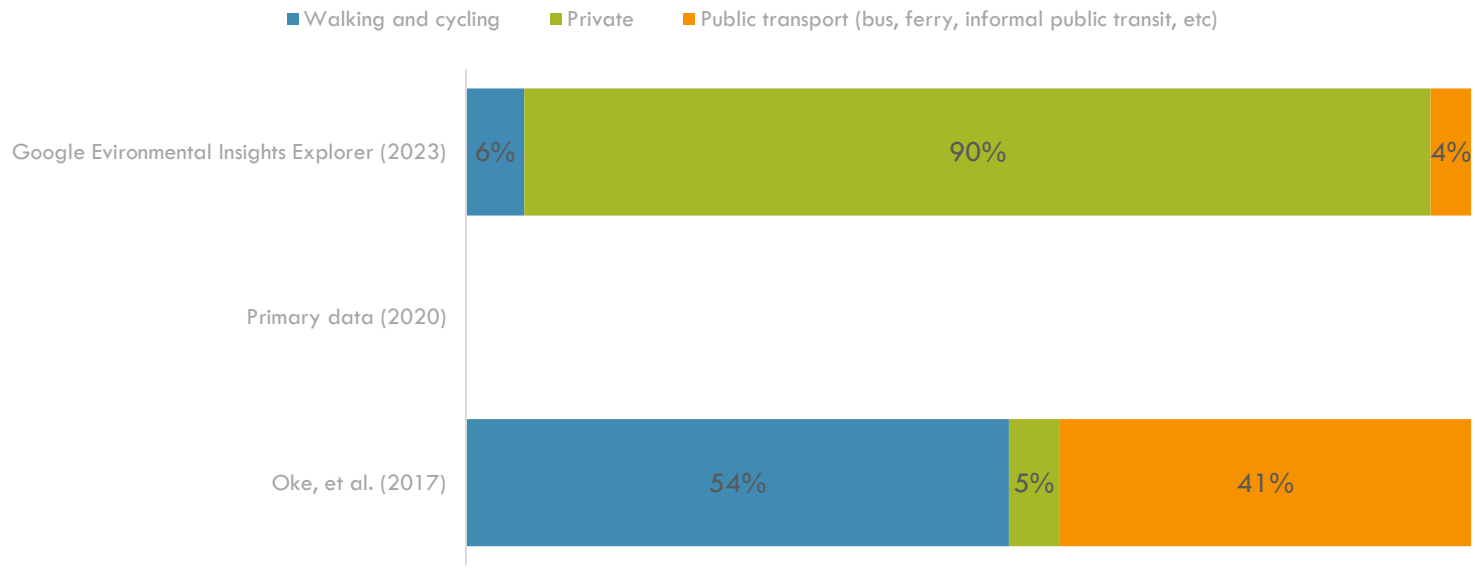
VKT per capita

Vehicle-kilometer per capita (2022) (ClimateTrace)



Trips Mode share (b)

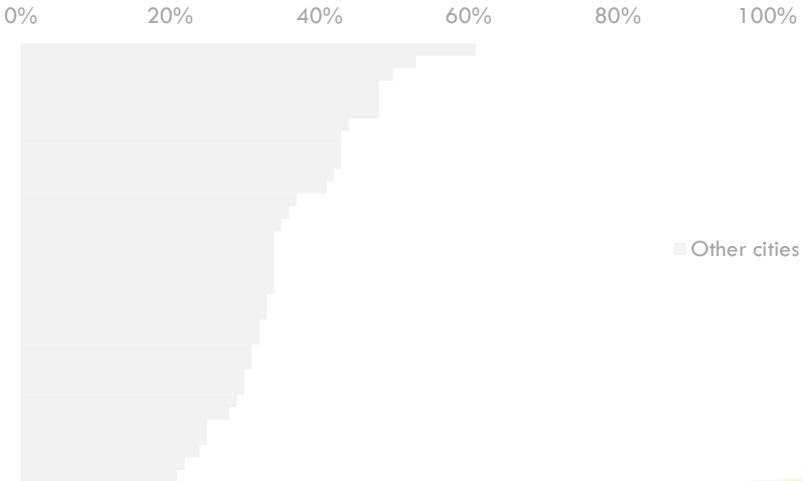
Share, %



(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 2.0 annual trips per capita
(2022) UITP-GUMI

Congestion ranking 19th out of 387 cities

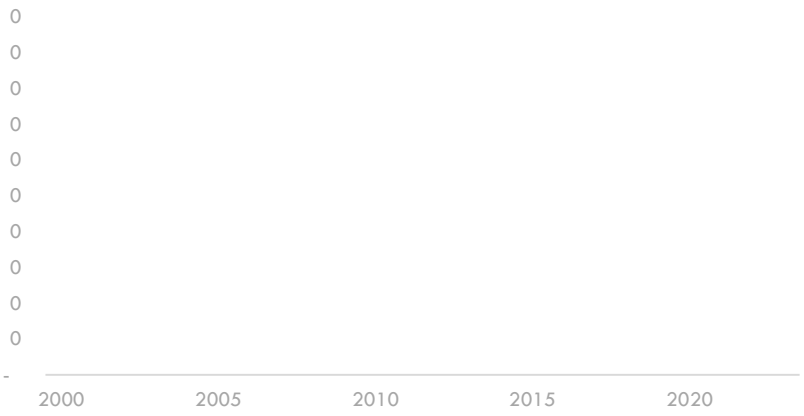
Vehicle motorization

Vehicles per thousand population (Primary data)

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

Vehicles registered (c)

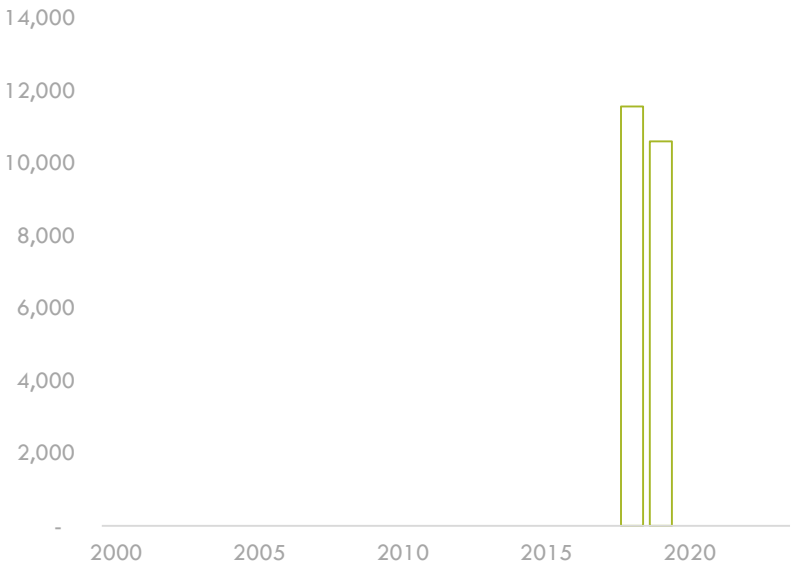
Thousand vehicles (Primary data)



Vehicles considered: no further information

Bus fleet (operational)

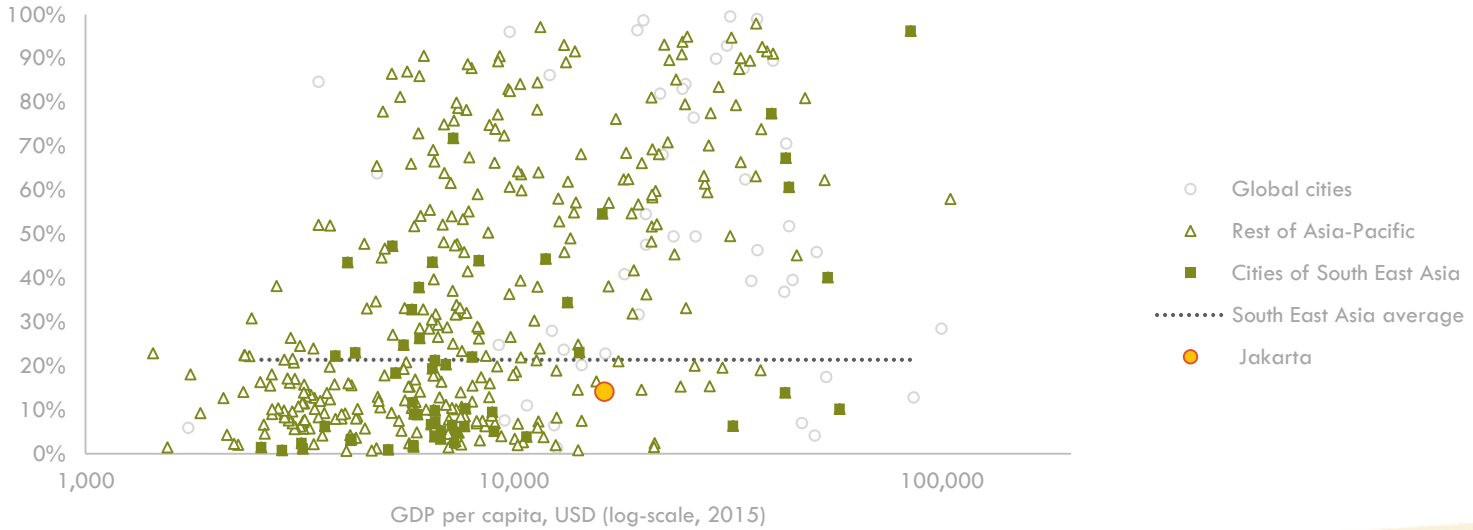
Bus (and other public transport) fleet (Primary data)



Urban Access

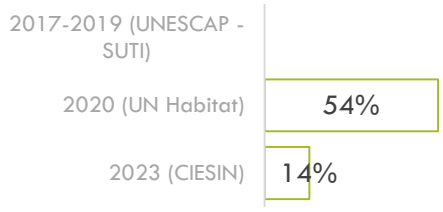
Access to urban public transport

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



Access to urban public transport (d) - by source

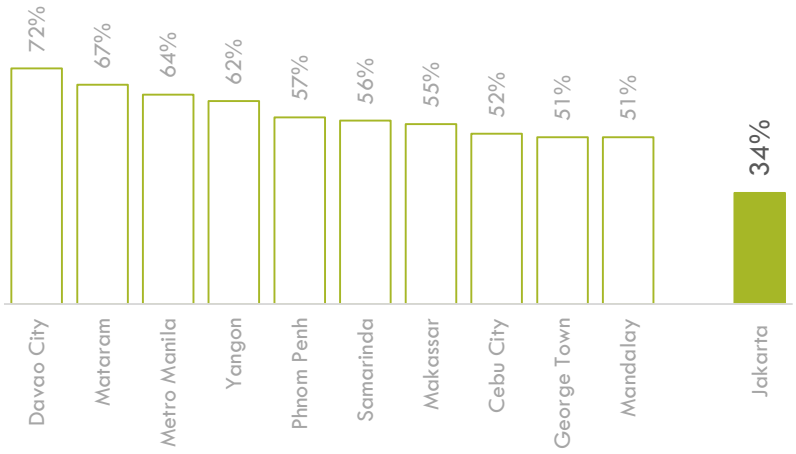
Share of population with convenient access to public transport



(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.

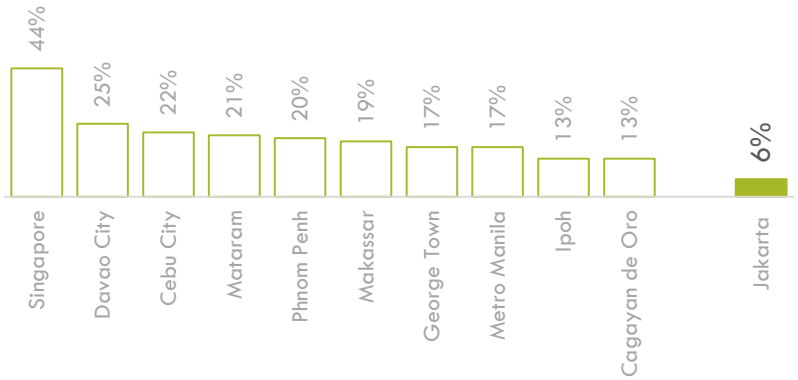
People near services (both healthcare and schools) (e)

(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)

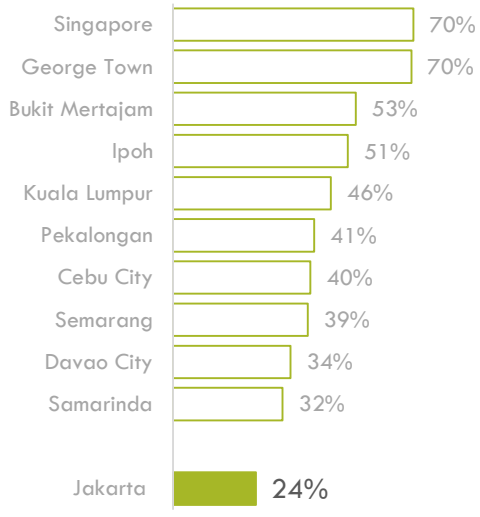


(e) People Near Services measures the percentage of the city's population living within a 1km walk of both healthcare and education. These services are especially vital for babies, toddlers, and their caregivers, who should be able to reach them on foot.

(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).

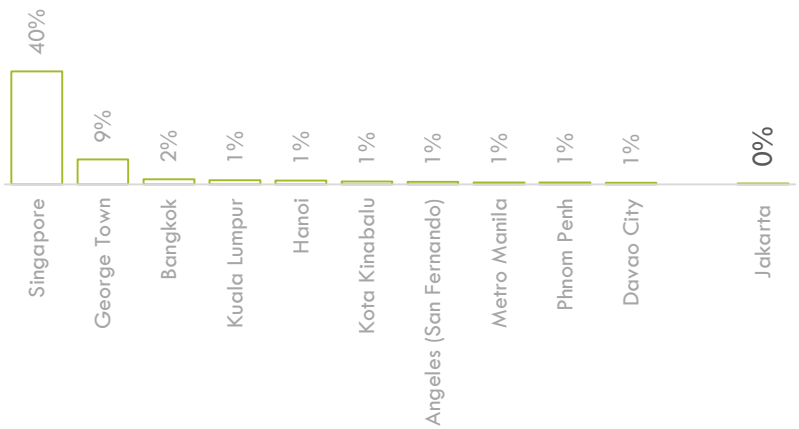
People near open public space

(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)



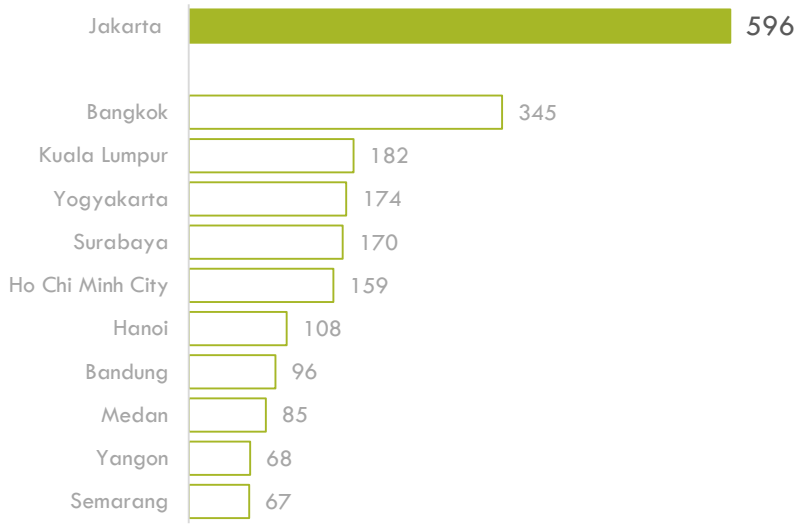
Transport externalities

Road transport - CO2 emissions

Thousand tonnes (2022) (ClimateTrace)

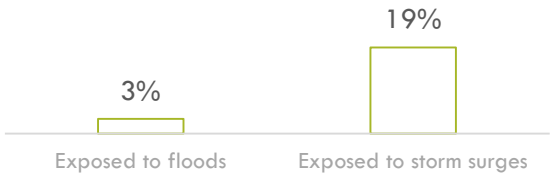
Road transport - N2O emissions

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



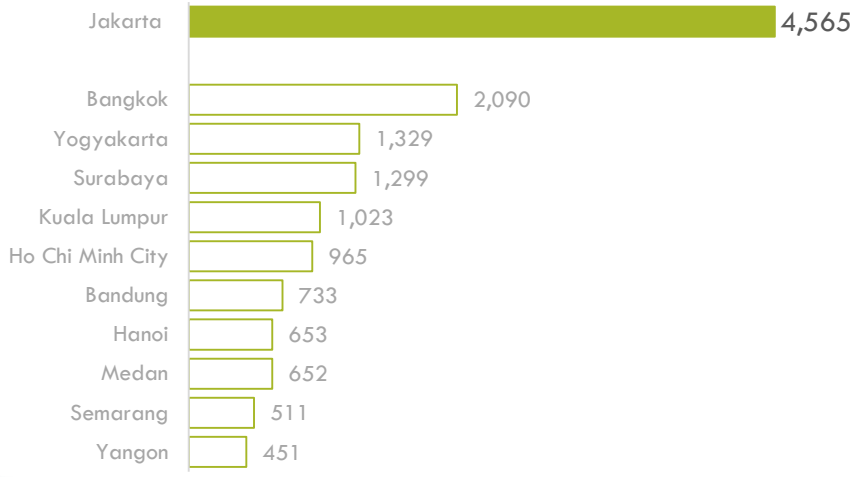
Population exposure to disasters

Share of population (2015) (GHS)



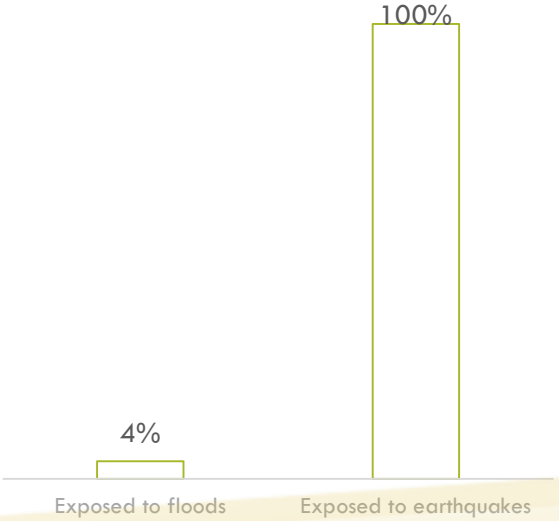
Road transport - CH4 emissions

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



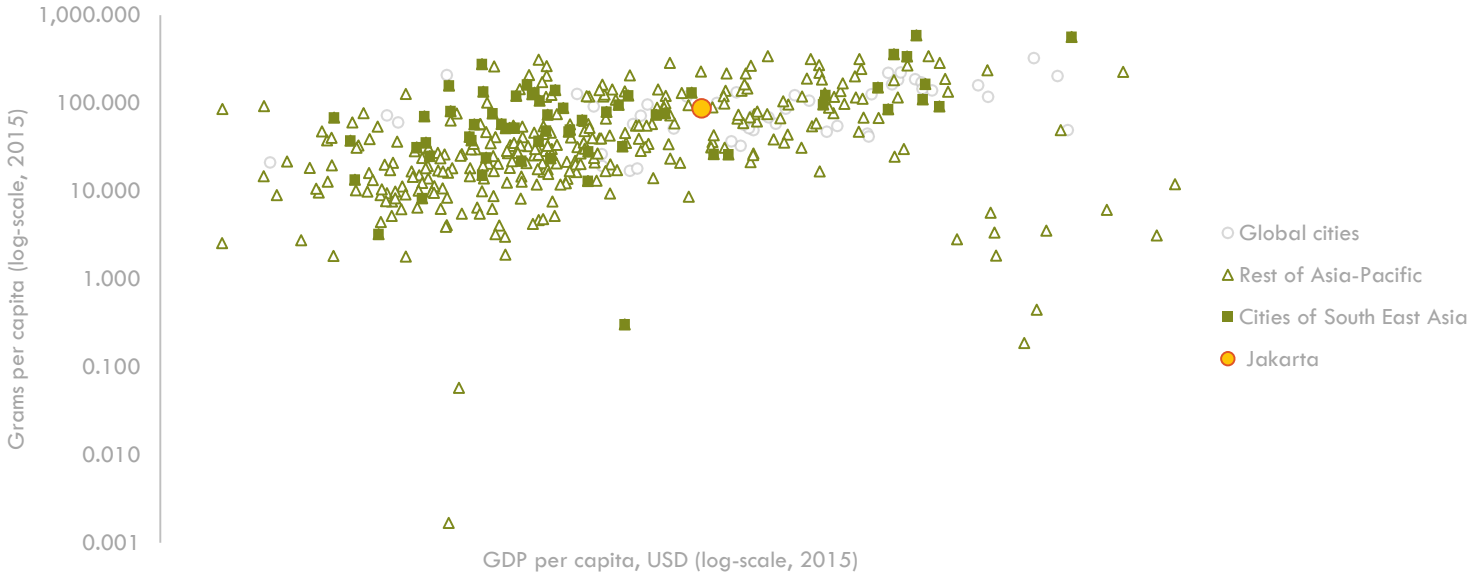
Urban built-up area exposure to disasters

Share of urban area (2020) (GHS)



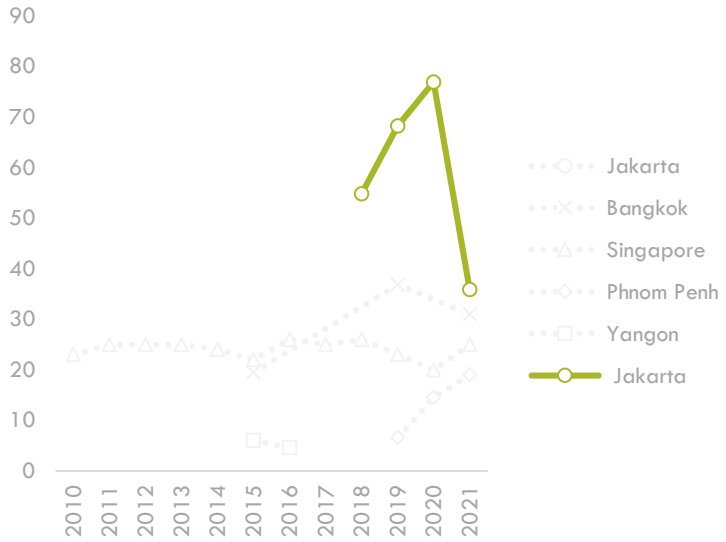
Transport PM 2.5 emissions

(GHS)



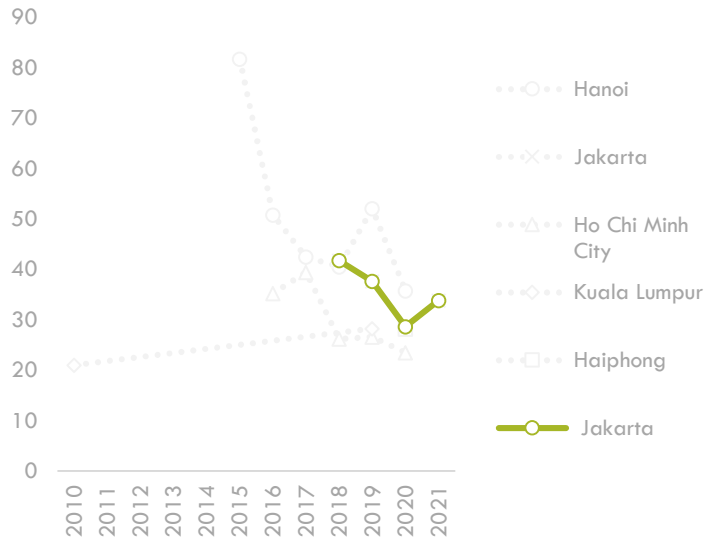
NO2 concentration

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



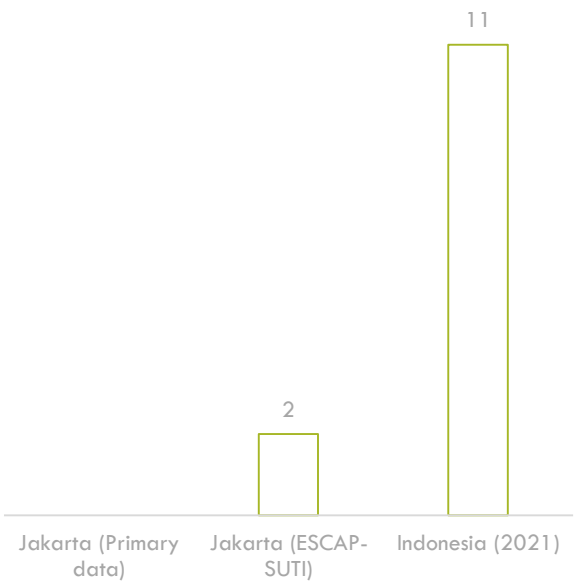
PM 2.5 concentration

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



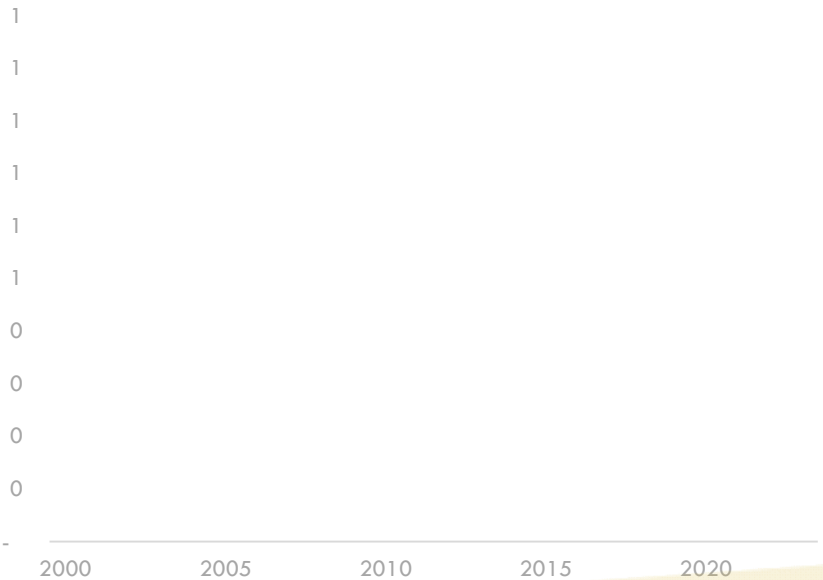
Road crash fatality rate

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)

Jakarta 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

Jakarta 81st out of 183 cities

(2024) (IESE)

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

Jakarta 0.06/1.00

(2020) (GHS)

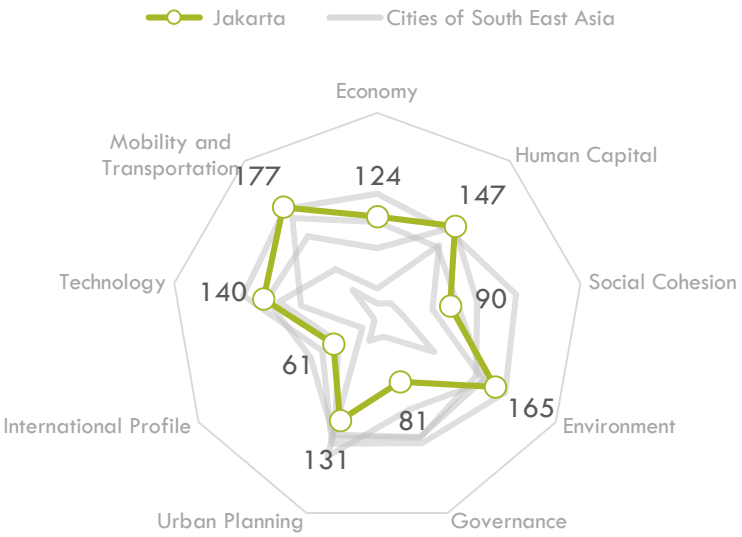
SUTI Geometric Mean

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

Jakarta n.d.

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	Jakarta 2025: Regional Long Term Development Plan
2011	Final Report on Project for Master Plan Study
2011	Final Report on Project for Master Plan Study on Port Development and Logistics in Greater
2012	2030 Regional Spatial Plan
2013	The Project for Capacity Development of
2015	JABODETABEK Transportation Master Plan (RITJ)
2019	JABODETABEK Urban Transportation Master Plan
2019	JABODETABEK Urban Transportation Policy Integration Project Phase 2 in the Republic of
2019	24-06-12-analisis-Buku Survei Evaluasi Layanan Transportasi Terintegrasi Jak Lingko 2019
2020	Emission Inventory of Pollutants (CO, SO 2 , PM 2.5 , and NO X) In Jakarta Indonesia
2020	Toward Clean Air Jakarta
2020	Long-term strategy to achieve DKI Jakarta's Low Carbon Society 2050
2021	Sustainability Assessment of Urban Transport System in Greater Jakarta
2021	Jakarta Climate Resilient City
2021	Jakarta Climate Action Plan 2021-2050
2021	Examining Jakarta's Investment Climate
2022	Jakarta Transportation Transformation
2023	Statistik Transportasi Provinsi DKI Jakarta 2022
2023	Strategic Plan 2023 - 2026
2023	Regional Government Work Plan Year 2024
2023	Final Report: DKI Jakarta Province Air Quality Monitoring Activities in 2023
n.d.	Toward a Better Jakarta Transportation
n.d.	Local Action Plan for Greenhouse Gas Emission Reductions in DKI Jakarta
n.d.	Commitment and Achievement Greenhouse Gas Emission Reduction in DKI Jakarta Province
n.d.	Deep Dive City: Jakarta, Indonesia
n.d.	One Data Jakarta
n.d.	Central Statistics Agency
n.d.	Transjakarta Long Term Corporate Plan 2020-2030
n.d.	Jakarta Regional Secretary Instruction No. 01/2021 on Regional Strategic Activities
n.d.	Jakarta Governor Regulation No. 03/2020 on Vehicle Ownership Transfer
n.d.	Jakarta Governor Instruction No. 66/2019 on Air Quality Control

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Oke et al. — Oke et al. (2019). A novel global urban typology framework for sustainable mobility futures. https://iopscience.iop.org/article/10.1088/1748-9326/ab22c7#erlab22c7s3

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

TE — Transport Politic. (n.d.). Transit Explorer Global Data. https://www.thetransportpolitic.com/transit-explorer/transit-explorer-data-and-sources/

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