HANOI, VIET NAM

URBAN TRANSPORT PROFILE

December 2024

Asian Transport Observatory

Summary

Hanoi's urban transport landscape is undergoing a significant transformation. The city's rapid growth, with a population of 5 million in 2020 and a density of 5,000 persons per sqkm, necessitates efficient and sustainable transport solutions. While private modes of transport currently dominate, accounting for 91% of trips according to recent data, Hanoi is actively investing in public transport infrastructure, particularly its metro system. With 36 kilometers of rapid transit lines operational by 2023, comprising a mix of metro and BRT, the city aims to shift towards a more balanced modal split. Hanoi's ambitious target is to increase the share of public transport to 40% by 2030, reducing reliance on private vehicles and mitigating the environmental impact of transport.

Despite progress in expanding its public transport network, Hanoi faces challenges in achieving its ambitious goals. The existing bus network, with 1,582 operational buses in 2016, suffers from low ridership, accounting for only 1% of trips. This highlights the need for improvements in service quality, route optimization, and integration with other modes of transport. Furthermore, Hanoi's rapid motorization, with 5.7 million registered vehicles in 2016, poses a significant challenge to sustainable transport development. Addressing traffic congestion and promoting modal shift require a comprehensive approach that combines infrastructure development with policies to discourage private vehicle use and incentivize public transport adoption.

Looking ahead to 2030, Hanoi's urban transport vision focuses on expanding its rapid transit network, improving bus services, and promoting sustainable modes like walking and cycling. With at least 12 kilometers of MRT under construction or planned, the city aims to enhance connectivity and accessibility. Efforts are also underway to improve the bus network, with a target of 6,700-6,800 buses by 2030 and a goal of ensuring 80-90% of residents in the city center have easy access to bus services within 500 meters of their residence. Moreover, Hanoi is actively promoting electric vehicle sharing for last-mile connectivity, demonstrating its commitment to innovative and sustainable urban transport solutions. Achieving these targets will be crucial for Hanoi to create a more efficient, accessible, and environmentally friendly transport system that supports its continued growth and development.

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
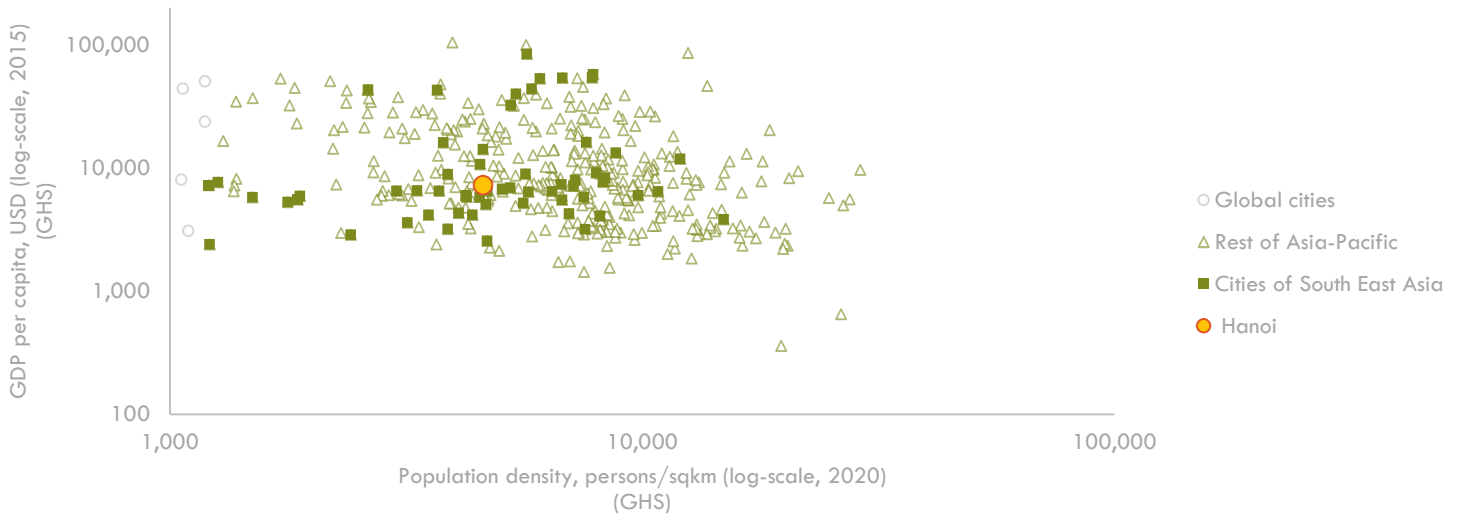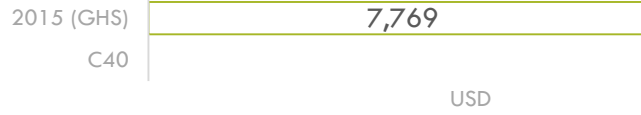
General

Population 5.0 million
(2020) (GHS)

Land area 1,095 sqkm
(2015) (GHS)

Population density 5 thousand per sqkm
(2020) (GHS)

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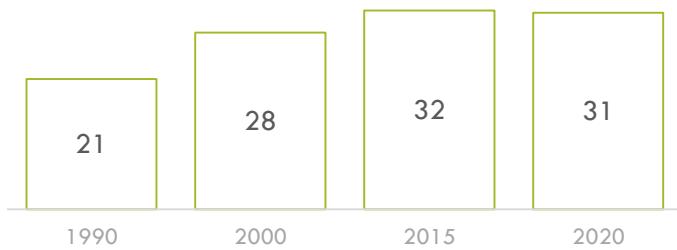(2015) (GHS)

Population density

C40	
2020 (GHS)	4,609

thousand people per sqkm

GDP per capita

2015 (GHS)	7,769
C40	

USD

Urban Form and Structure

Builtup area per capita
sqm per capita (GHS)

1990	2000	2015	2020
21	28	32	31

Builtup area per capita
(GHS)

Mean block density
blocks per sqkm (2020) (ITDP)
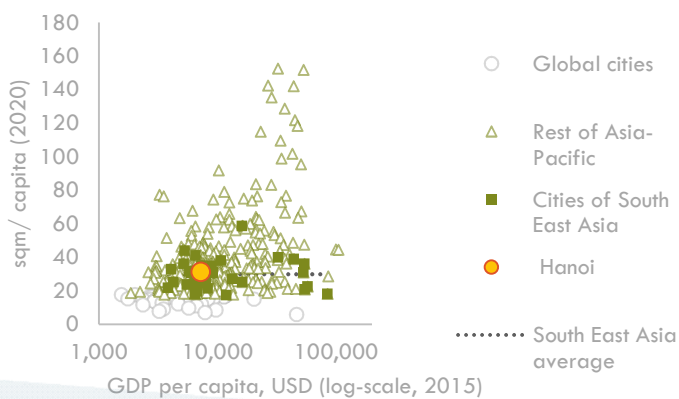
Intersection density
(Oke et.al. (2019) (OSM))

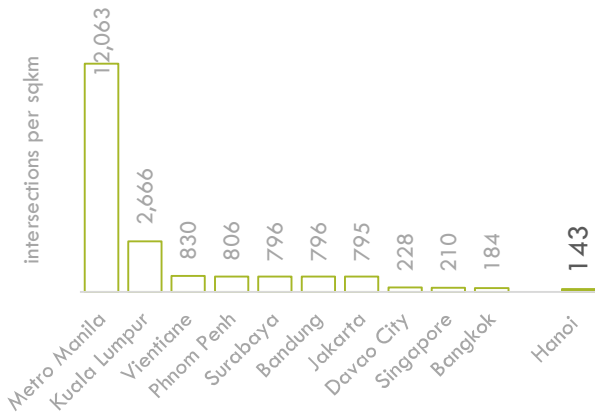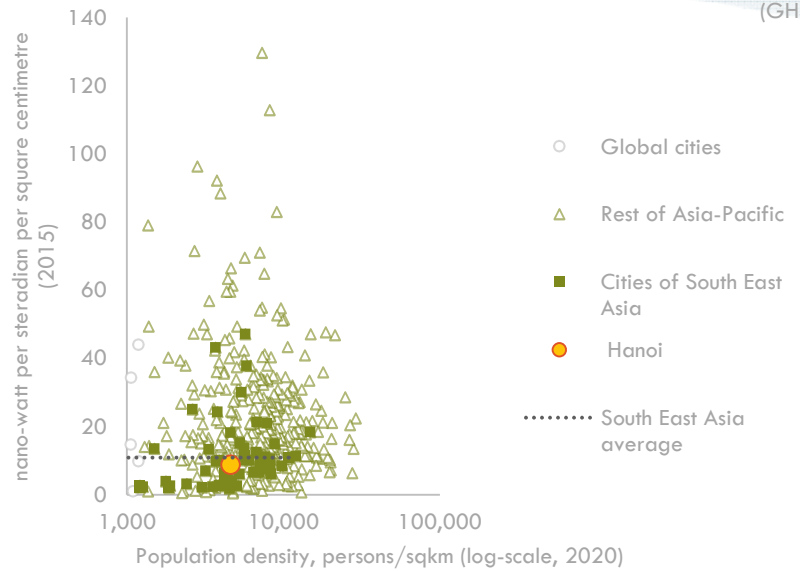*(a) Night time light intensity studies illustrate urban forms and patterns by mapping human activity, infrastructure, and connectivity, offering insights into urban sprawl, density variations, and transport network*

Night time light intensity (a)
(GHS)

Urban Transport Infrastructure

Road availability
kilometers per thousand population (2019) (Oke et.al. (OSM) and GHS)
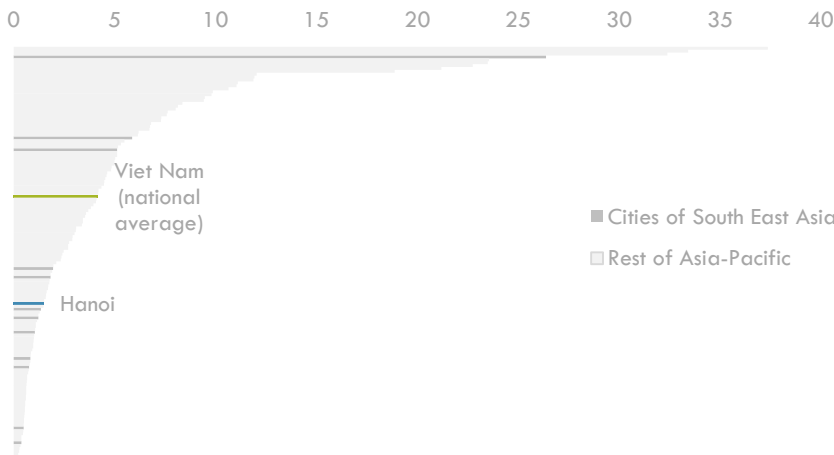
Road kilometers 2,052 kilometers
(2016) (Primary data)

Rapid transit infrastructure
(2024) (TE)

Rapid transit infrastructure
kilometers (ITDP, Primary data)
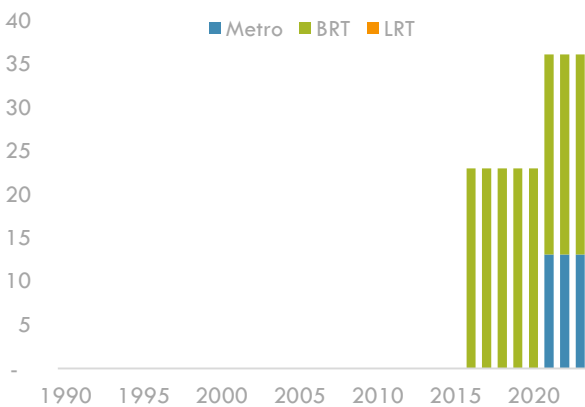
BRT 23 kilometers
LRT none
Metro 13 kilometers
Total 36 kilometers

(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)

GDP per capita, USD (log-scale, 2015)

Trips Mode share (b)

Share, %

■ Walking and cycling   ■ Private   ■ Public transport (bus, ferry, informal public transit, etc)

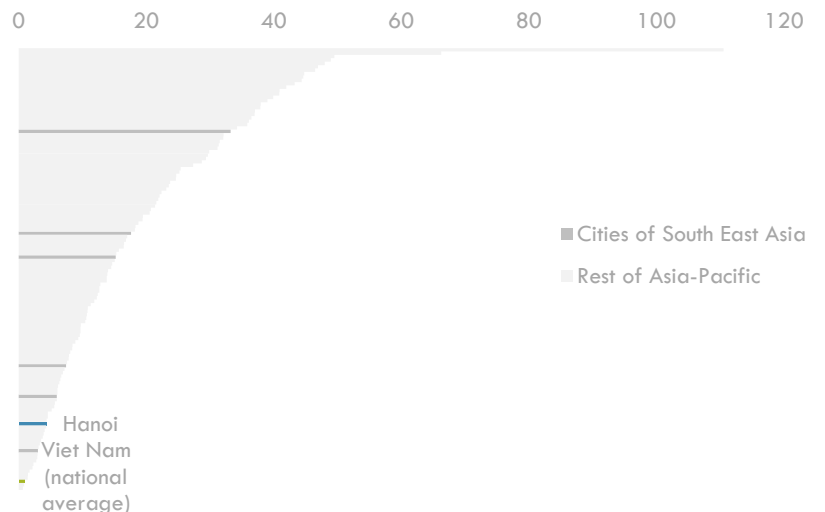|			
Google Evironmental Insights Explorer (2023)	8%	91%	1%
Primary data (2013)	20%	72%	8%
Oke, et al. (2017)	50%	10%	40%
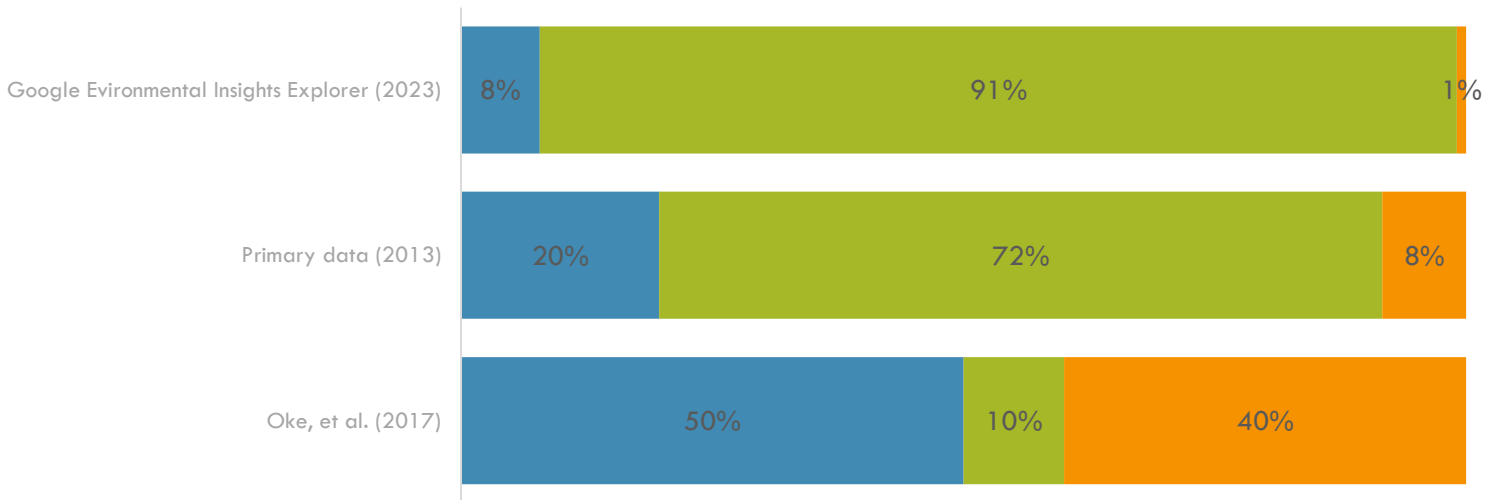
(b) The methodologies used for mode share assessments vary across different studies, making direct comparison of results inadvisable. Specifically, the Google Environmental Insights Explorer derives its assessments from mobile data analysis, while primary data studies typically rely on survey-based approaches. In contrast, the study by Oke et al. utilizes a combination of secondary data sources.

Metro ridership n.d.

Congestion ranking n.d.

Congestion level

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

■ Other cities

Vehicle motorization

Vehicles per thousand population (Primary data)

- ■ Hanoi
- ■ Cities in South East Asia
- ■ Rest of Asia-Pacific

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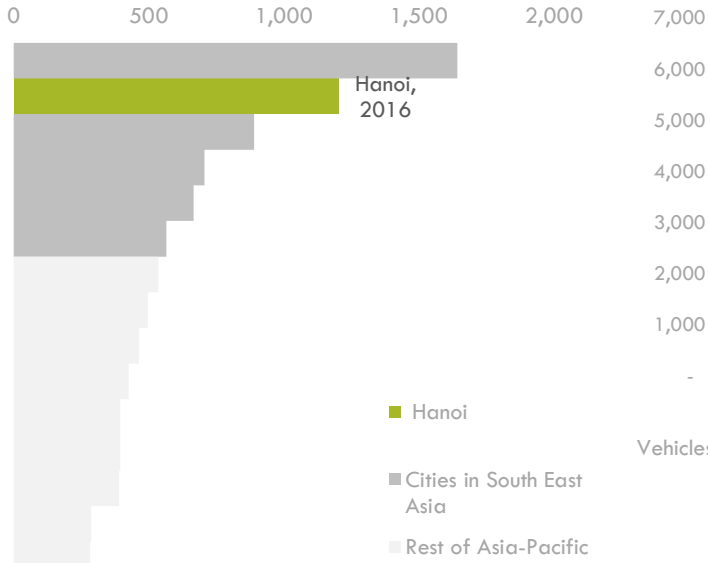
Vehicles registered (c)

Thousand vehicles (Primary data)

Vehicles considered: Car, 2W, Bus, Freight vehicles, Others
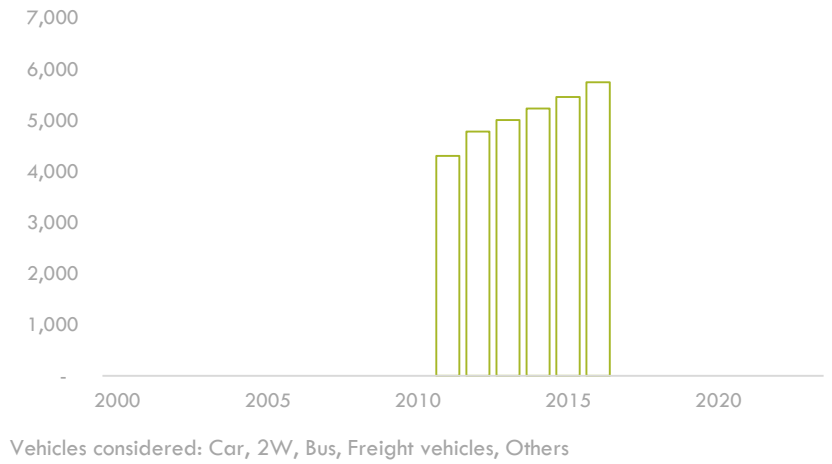
Bus fleet (operational)

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)

- ○ Global cities
- △ Rest of Asia-Pacific
- ■ Cities of South East Asia
- ⋯ South East Asia average
- ● Hanoi

GDP per capita, USD (log-scale, 2015)
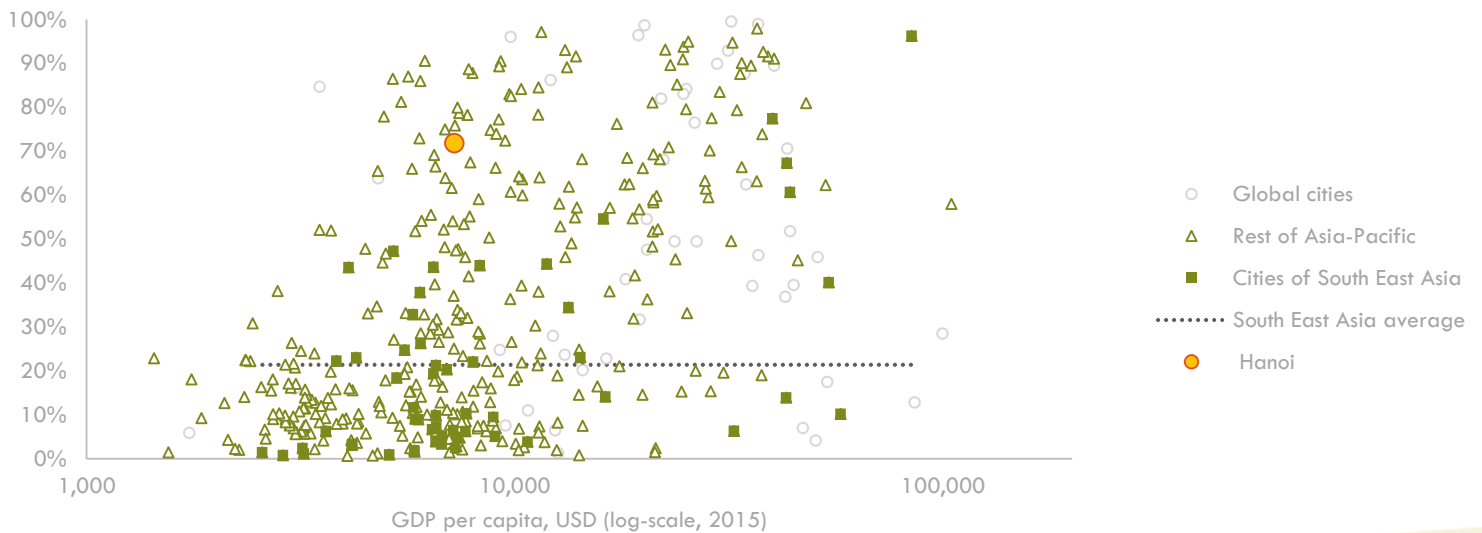
Access to urban public transport (d) - by source

Share of population with convenient access to public transport

2017-2019 (UNESCAP - SUTI)	
2020 (UN Habitat)	**69%**
2023 (CIESIN)	**72%**

(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 i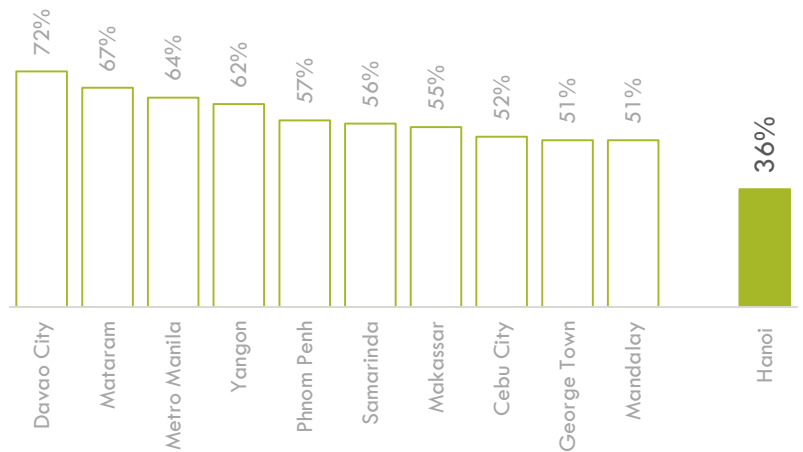n the analysis which may include both formal and informal stops. Many cities (mostly in the developing countries) have informal public transport systems which are not fully mapped - meaning that they may record higher levels of access to public transport than reported in this dataset.

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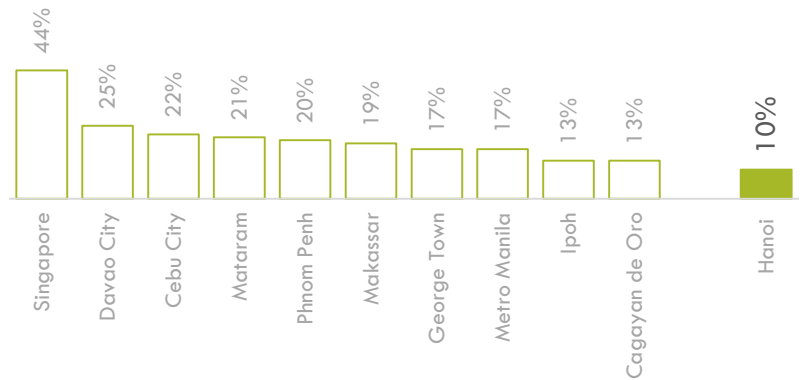
People near services (both healthcare and schools) (e)

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

City	Share
Davao City	72%
Mataram	67%
Metro Manila	64%
Yangon	62%
Phnom Penh	57%
Samarinda	56%
Makassar	55%
Cebu City	52%
George Town	51%
Mandalay	51%
Hanoi	36%

People near car-free places (f)

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

City	Share
Singapore	44%
Davao City	25%
Cebu City	22%
Mataram	21%
Phnom Penh	20%
Makassar	19%
George Town	17%
Metro Manila	17%
Ipoh	13%
Cagayan de Oro	13%
Hanoi	10%

People near open public space

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

City	Share
Singapore	70%
George Town	70%
Bukit Mertajam	53%
Ipoh	51%
Kuala Lumpur	46%
Pekalongan	41%
Cebu City	40%
Semarang	39%
Davao City	34%
Samarinda	32%
Hanoi	
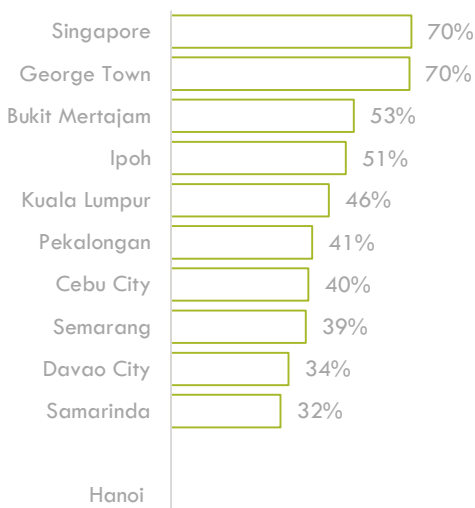
People near protected bikelanes

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

City	Share
Singapore	40%
George Town	9%
Bangkok	2%
Kuala Lumpur	1%
Kota Kinabalu	1%
Angeles (San Fernando)	1%
Metro Manila	1%
Phnom Penh	1%
Davao City	1%
Jakarta	0%
Hanoi	1%
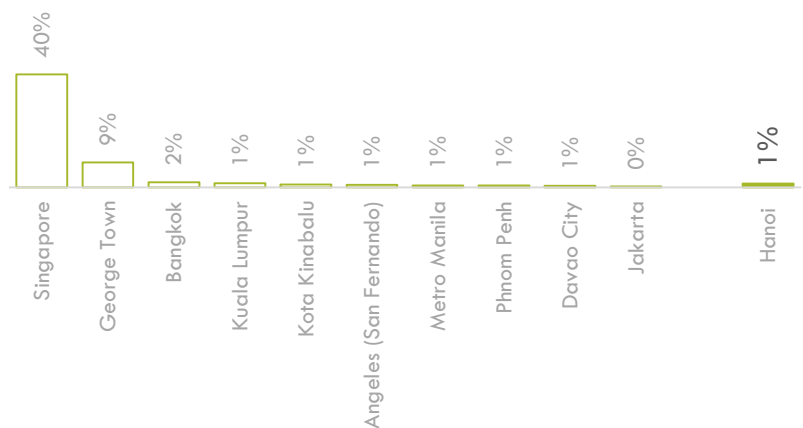
Transport externalities

Road transport - CO2 emissions

Thousand tonnes (2022) (ClimateTrace)

△ Rest of Asia-Pacific
■ Cities of South East Asia
● Hanoi

Road transport - N2O emissions

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

City	Value
Hanoi	108
Jakarta	596
Bangkok	345
Kuala Lumpur	182
Yogyakarta	174
Surabaya	170
Ho Chi Minh City	159
Bandung	96
Medan	85
Yangon	68
Semarang	67
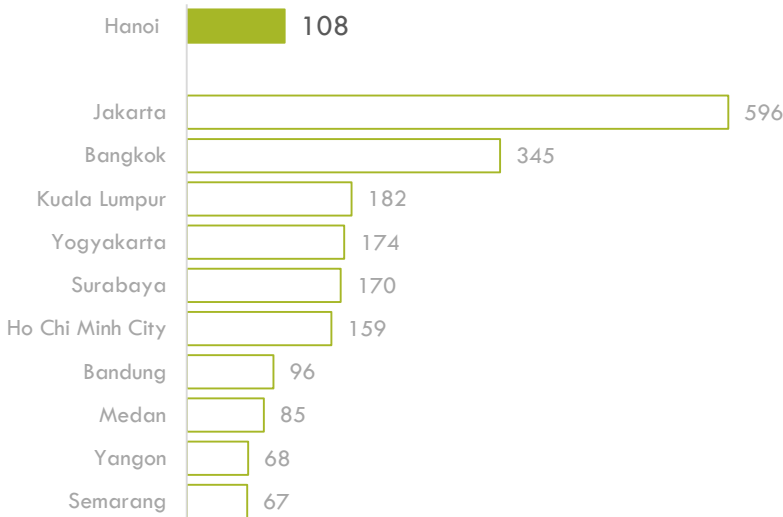
Population exposure to disasters

Share of population (2015) (GHS)

41% Exposed to floods — Exposed to storm surges
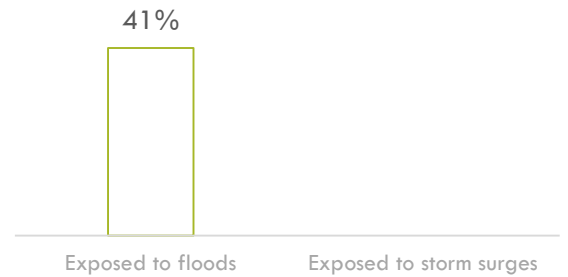
Road transport - CH4 emissions

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

City	Value
Hanoi	653
Jakarta	4,565
Bangkok	2,090
Yogyakarta	1,329
Surabaya	1,299
Kuala Lumpur	1,023
Ho Chi Minh City	965
Bandung	733
Medan	652
Semarang	511
Yangon	451
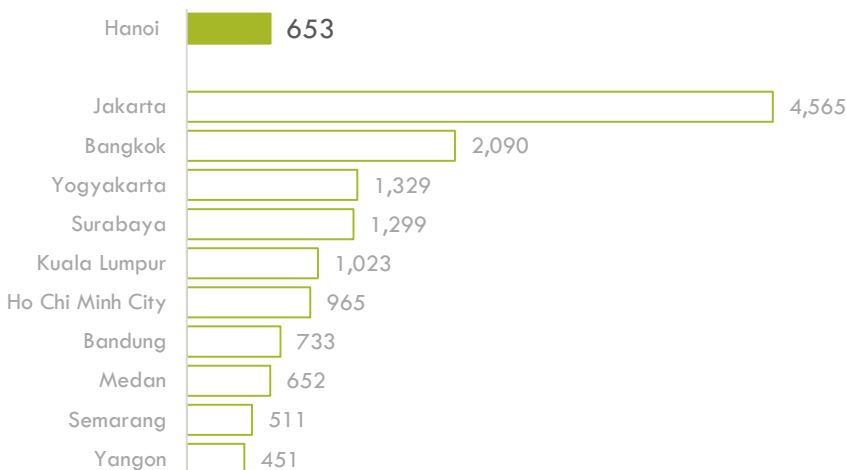
Urban built-up area exposure to disasters

Share of urban area (2020) (GHS)

54% Exposed to floods — Exposed to earthquakes
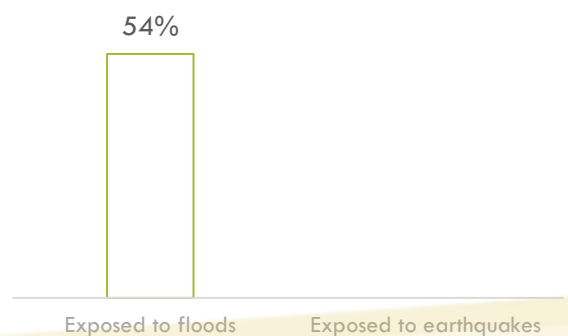
Transport PM 2.5 emissions
(GHS)

Legend: Global cities; Rest of Asia-Pacific; Cities of South East Asia; Hanoi

Y-axis: Grams per capita (log-scale, 2015)
X-axis: GDP per capita, USD (log-scale, 2015)

NO2 concentration
ug/m3 (vs. highest 5 cities in South East Asia) (WHO)

Legend: Jakarta, Bangkok, Singapore, Phnom Penh, Yangon, Hanoi

PM 2.5 concentration
ug/m3 (vs. highest 5 cities in South East Asia) (WHO)

Legend: Hanoi, Jakarta, Ho Chi Minh City, Kuala Lumpur, Haiphong, Hanoi

Road crash fatality rate
Deaths per 100,000 population

Hanoi (Primary data); Hanoi (ESCAP-SUTI) 8; Viet Nam (2021) 18
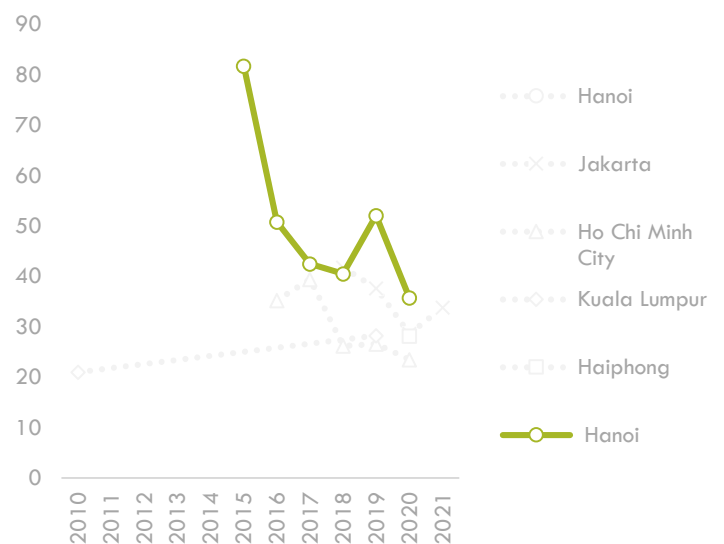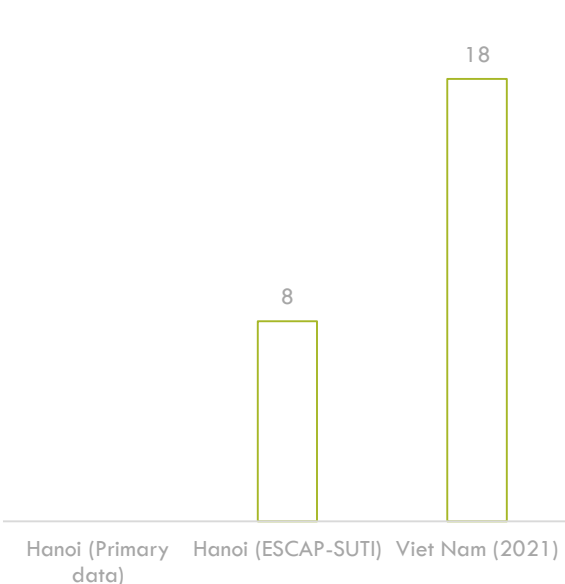
Road crash fatality rate
Deaths per 100,000 population (Primary data)
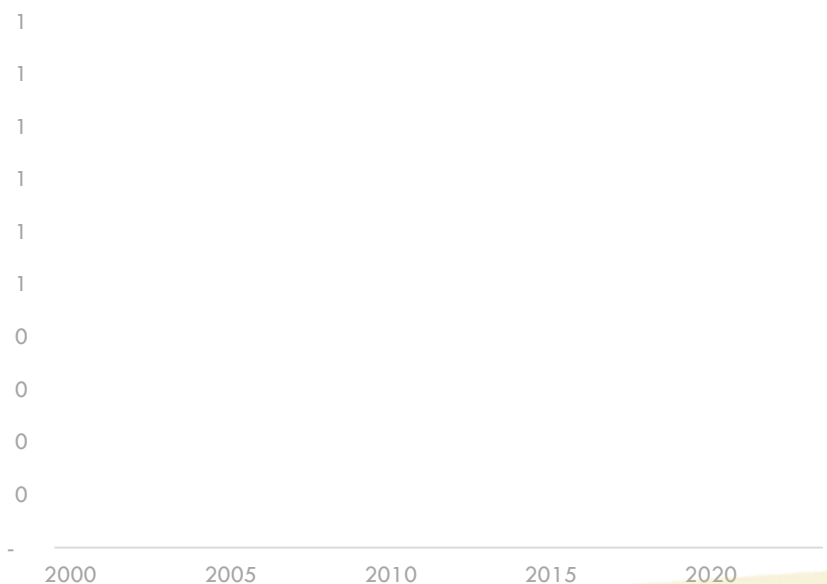
Transport related Indices

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)

Hanoi 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

Hanoi 0.05/1.00
(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

Hanoi 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

Hanoi n.d.

Cities in Motion index ranking by subcomponent

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

Hanoi — Cities of South East Asia
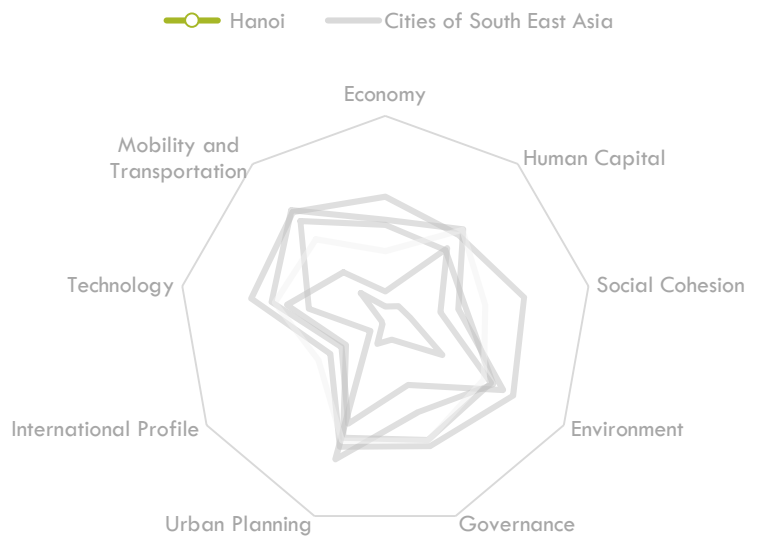
Transport relevant policy documents

Year published	Document name
2011	General planning on construction of Hanoi capital to 2030 with a vision to 2050
2016	Transportation Planning of Hanoi Capital by 2030, with a Vision to 2050
2017	Collection and Compilation of 10 SUTI Index in Hanoi City
n.d.	Hanoi City Parking Plan
n.d.	Mid-term Investment Plan of Hanoi City 2016-2020

References

ATO Urban Policy Tracker	Asian Transport Outlook (ATO). (2024). ATO Urban Policy Tracker. https://asiantransportoutlook.com/
C40	C40. (2024). Greenhouse gas emissions interactive dashboard. https://www.c40knowledgehub.org/s/article/C40-cities-greenhouse-gas-emissions-interactive-dashboard?language=en_US
CIESIN	CIESIN. (2023). SDG Indicator 11.2.1: Urban Access to Public Transport, 2023 Release. https://www.earthdata.nasa.gov/data/catalog/sedac-ciesin-sedac-sdgi-uapt-2023-2023.00
ClimateTrace	Climate Trace. (2024). Data Downloads. https://climatetrace.org/data
GHS	GHS. (2024). GHSL - Global Human Settlement Layer. https://human-settlement.emergency.copernicus.eu/ghs_ucdb_2024.php
Google Evironmental Explorer	Google. (2024). Environmental Insights Explorer. https://insights.sustainability.google/places/ChIJbTgmYNLIlzMR0HiSrNoj7V8?ty=2023&hl=en-US
IESE	IESE. (2024). IESE Cities in Motion Index. https://www.iese.edu/media/research/pdfs/ST-0649-E.pdf
ITDP	ITDP. (2024). The Atlas of Sustainable City Transport. https://itdp.org/publication/the-atlas-of-sustainable-city-transport/
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/
TomTom	Tom Tom. (2023). Traffic index Ranking. https://www.tomtom.com/traffic-index/ranking/
UITP - GUMI	UITP. (2022). Global Urban Mobility Indicators 2022. https://www.uitp.org/publications/global-urban-mobility-indicators-2022
UN Habitat	UN Habitat. (2021). Urban Indicators Database. https://data.unhabitat.org/
UNESCAP - SUTI	UNESCAP. (n.d.). Sustainable Urban Transport Index (SUTI). https://www.unescap.org/our-work/transport/suti
WHO	WHO. (2024). WHO Ambient Air quality database. https://www.who.int/data/gho/data/themes/air-pollution/who-air-quality-database
WB	WB. (2024). The Container Port Performance Index 2023. https://documents1.worldbank.org/curated/en/099060324114539683/pdf/P175833138923000871be641a5ea7b90e0e6.pdf