LAHORE, PAKISTAN

URBAN TRANSPORT PROFILE

December 2024

Asian Transport Observatory

Summary

Lahore, with a population of 13.5 million (2020), is a rapidly growing city with a high population density of 14,000 persons per sqkm. The city's GDP per capita has grown significantly, rising from $3,000 in 2000 to $4,000 in 2015. Lahore's built-up area has expanded from 166 sqkm in 2000 to 228 sqkm in 2020, but its built-up area per capita has decreased from 21 sqkm to 17 sqkm, indicating denser urban development. Compared to the Central and West Asia average of 33 sqkm per capita, Lahore's figure suggests a more compact urban form. The city also exhibits a higher density of blocks and intersections per sqkm than the national average, pointing to a potentially more complex road network.

Regarding transport infrastructure, Lahore has approximately 1 kilometer of road per thousand per capita, similar to the national average. The city's rapid transit system, composed of BRT, grew from 0 kilometers in 2010 to 27 kilometers in 2023. Although this development is notable, Lahore still lags behind other cities in the region, such as Peshawar, which boasts 12 kilometers of rapid transit per million population. Currently, no metro, LRT, or BRT lines are under construction or planned for the city, indicating a potential gap in future public transport development.

Lahore's average vehicle-kilometer activity in 2022 was 1,966 kilometers per capita, exceeding the national average. However, the city's modal split reveals a heavy reliance on private transport, with 92% of trips made using private modes. This dependence on private vehicles contributes to traffic congestion and air pollution. While Lahore has made strides in developing its BRT system, a greater focus on expanding public transport options and promoting sustainable modes like walking and cycling is crucial for improving urban mobility and mitigating transport-related externalities.

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

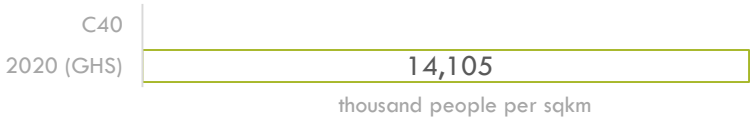
Population 13.5 million
(2020) (GHS)

Land area 955 sqkm
(2015) (GHS)

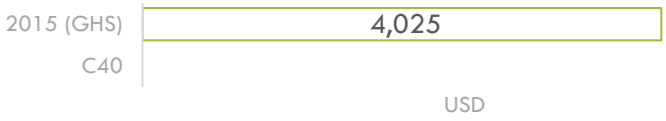
Population density 14 thousand per sqkm
(2020) (GHS)

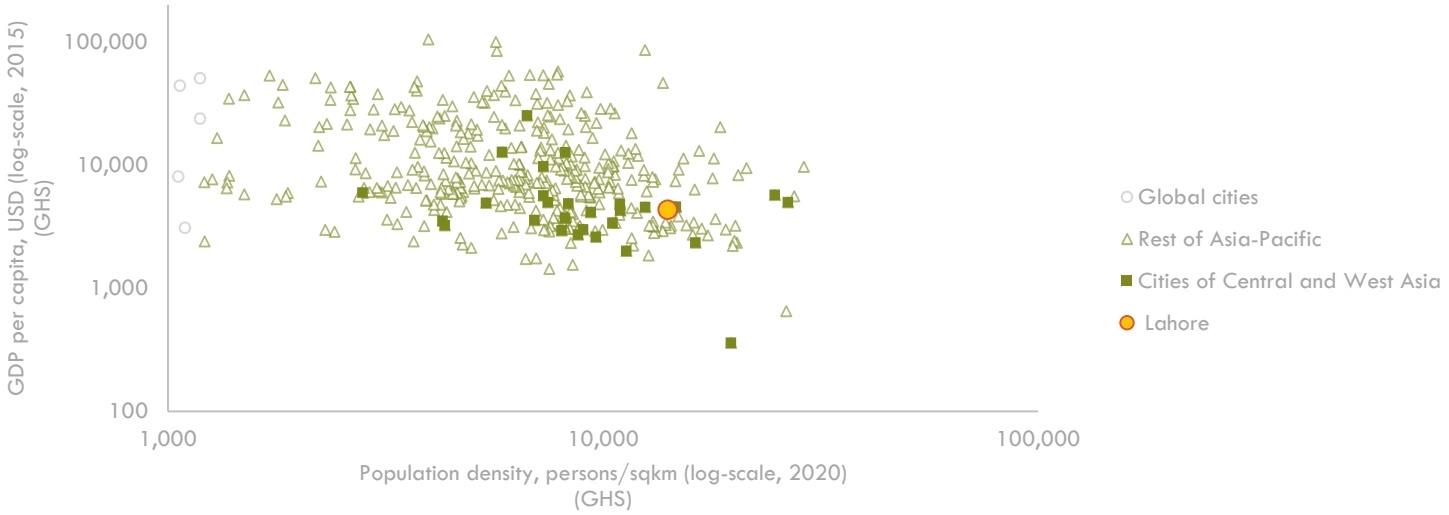
GDP per capita 4 thousand USD
(2015) (GHS)

Population density



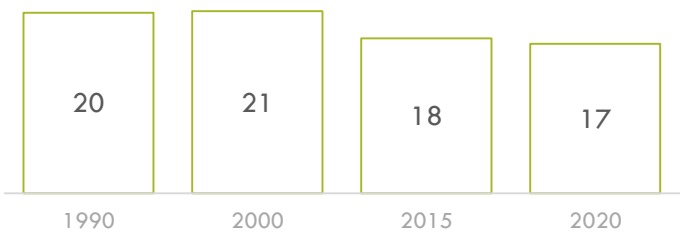
GDP per capita



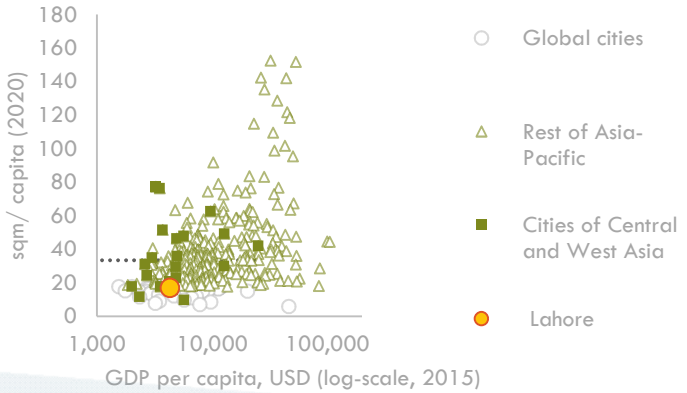


Urban Form and Structure

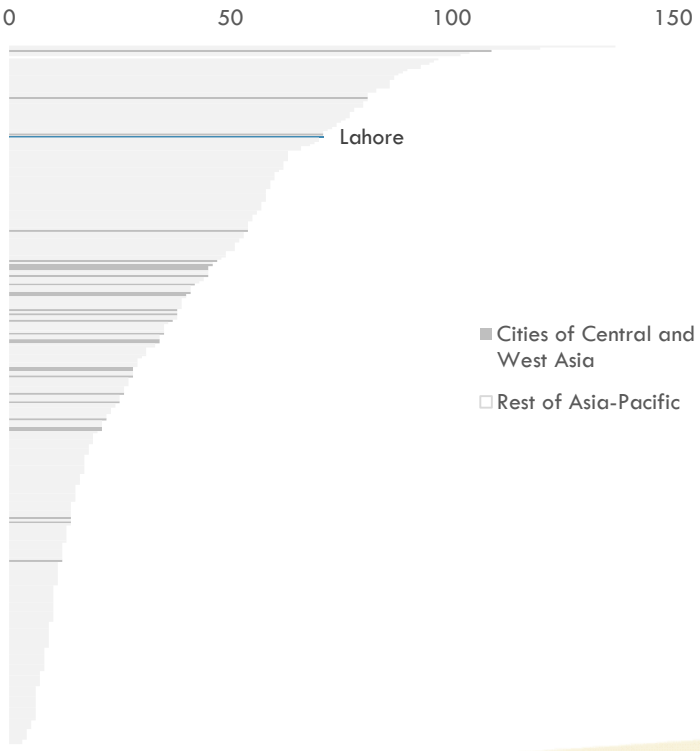
Builtup area per capita
sqm per capita (GHS)



Builtup area per capita
(GHS)

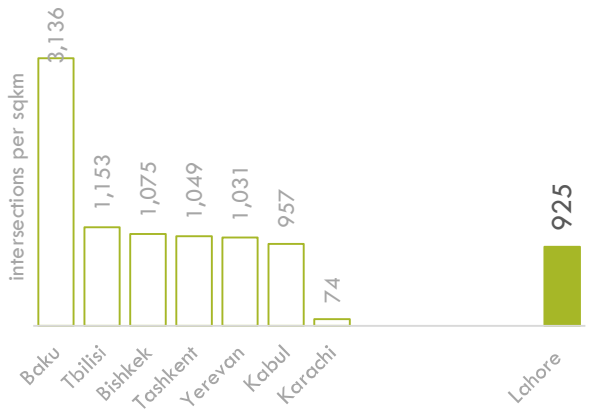


Mean block density
blocks per sqkm (2020) (ITDP)



Intersection density

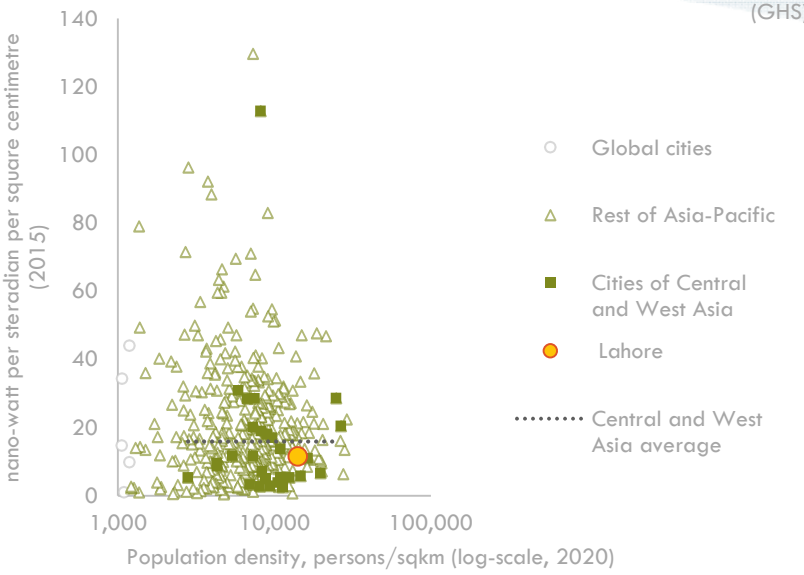
(Oke et.al. (2019) (OSM))



(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

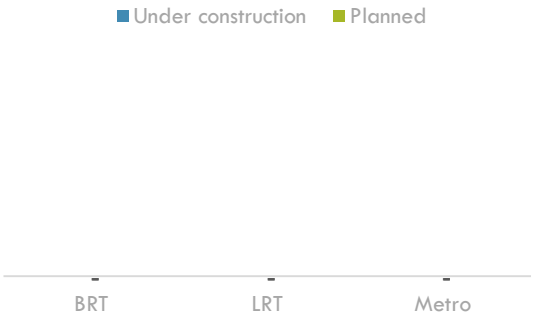
Road availability

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

Road kilometers n.d.

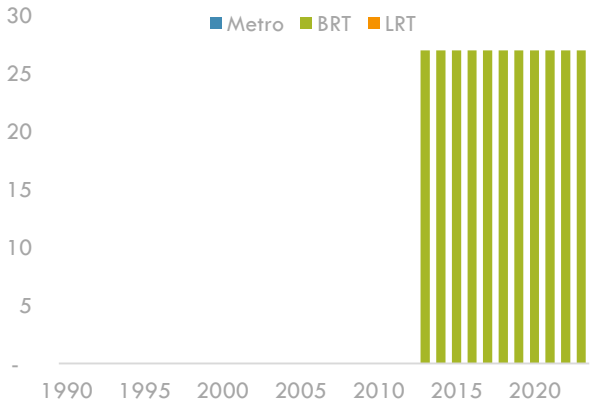
Rapid transit infrastructure

(2024) (TE)



Rapid transit infrastructure

kilometers (ITDP, Primary data)



BRT 27 kilometers

LRT none

Metro none

Total 27 kilometers

(2023) (ITDP)

Rapid transit availability

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

Approximate transit coverage 6% of land area

(2015) (ITDP and GHS)

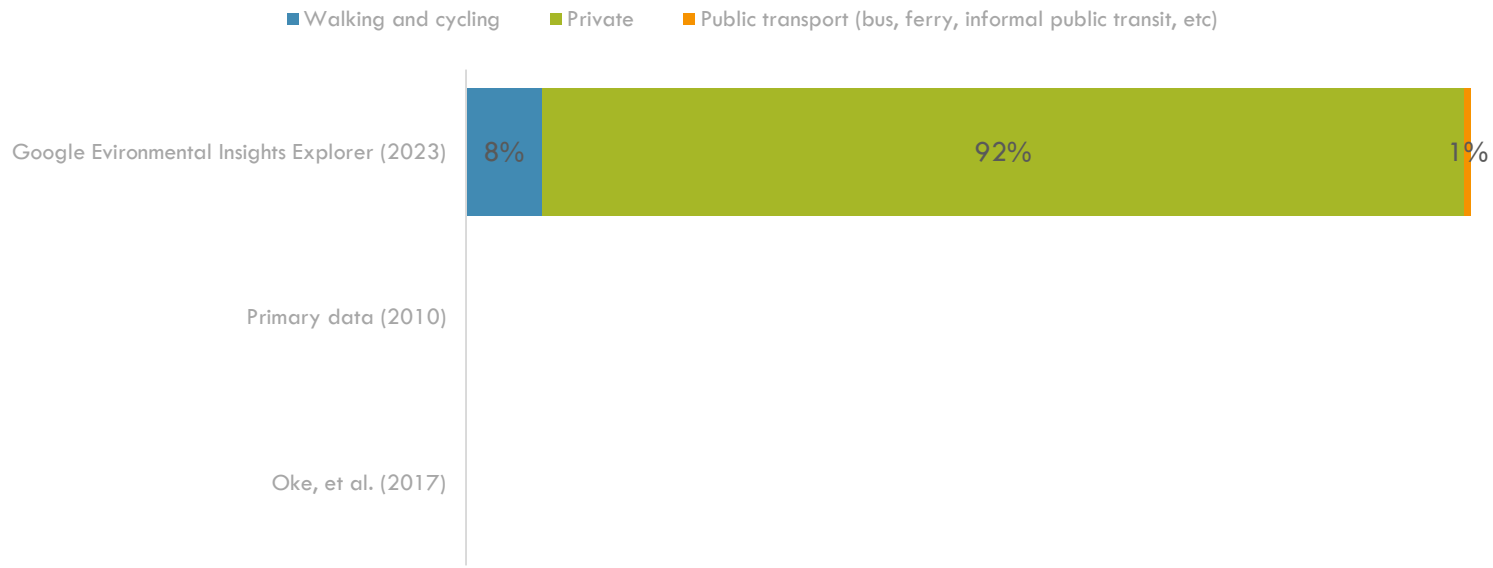
Transport Activity and Services

VKT per capita

Vehicle-kilometer per capita (2022) (ClimateTrace)

Trips Mode share (b)

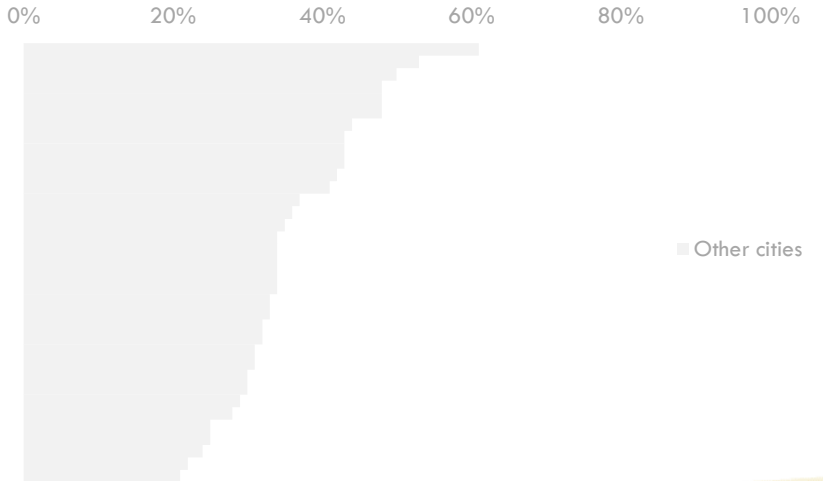
Share, %



(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)

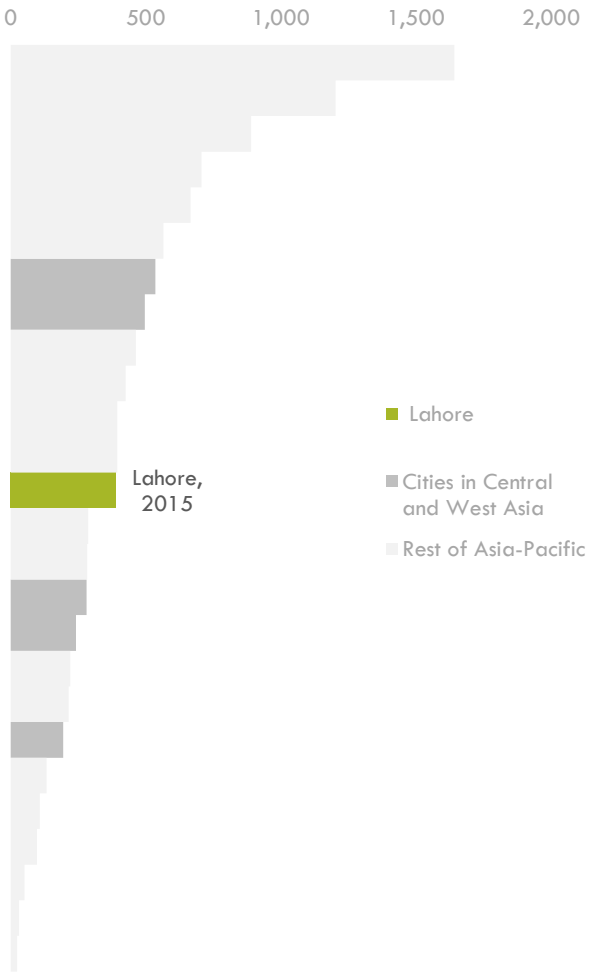


Metro ridership n.d.

Congestion ranking n.d.

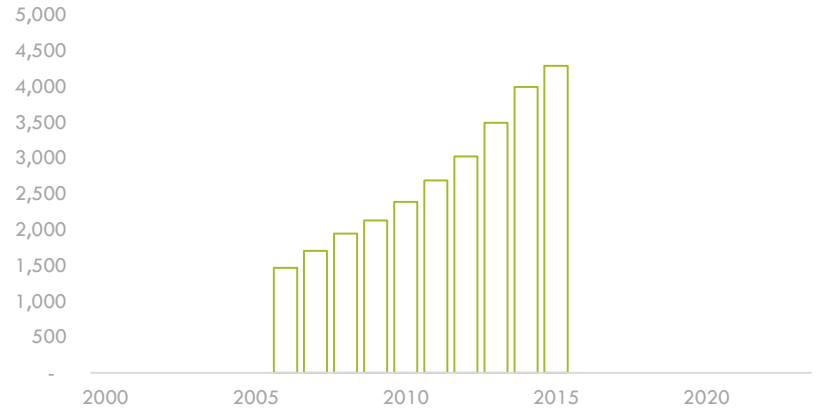
Vehicle motorization

Vehicles per thousand population (Primary data)



Vehicles registered (c)

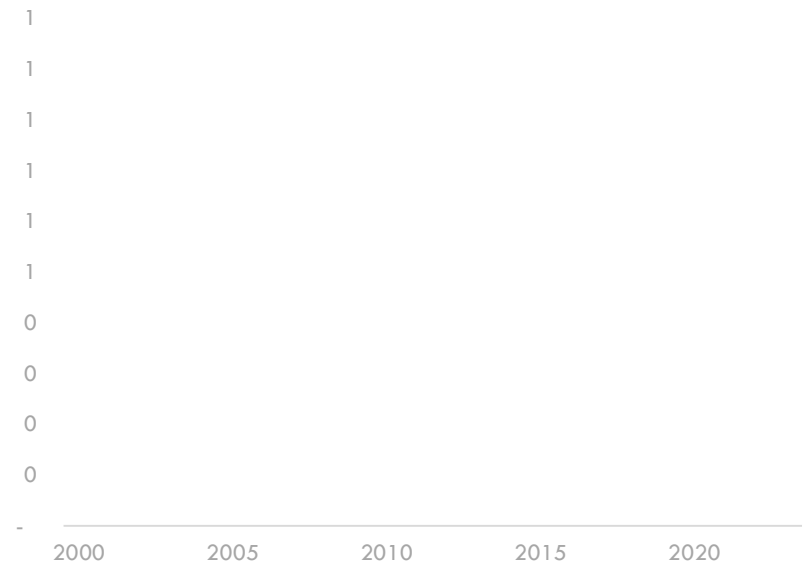
Thousand vehicles (Primary data)



Vehicles considered: 3W, Bus, Car, Taxi, 2W, Frieght vehicle, Others

Bus fleet (operational)

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

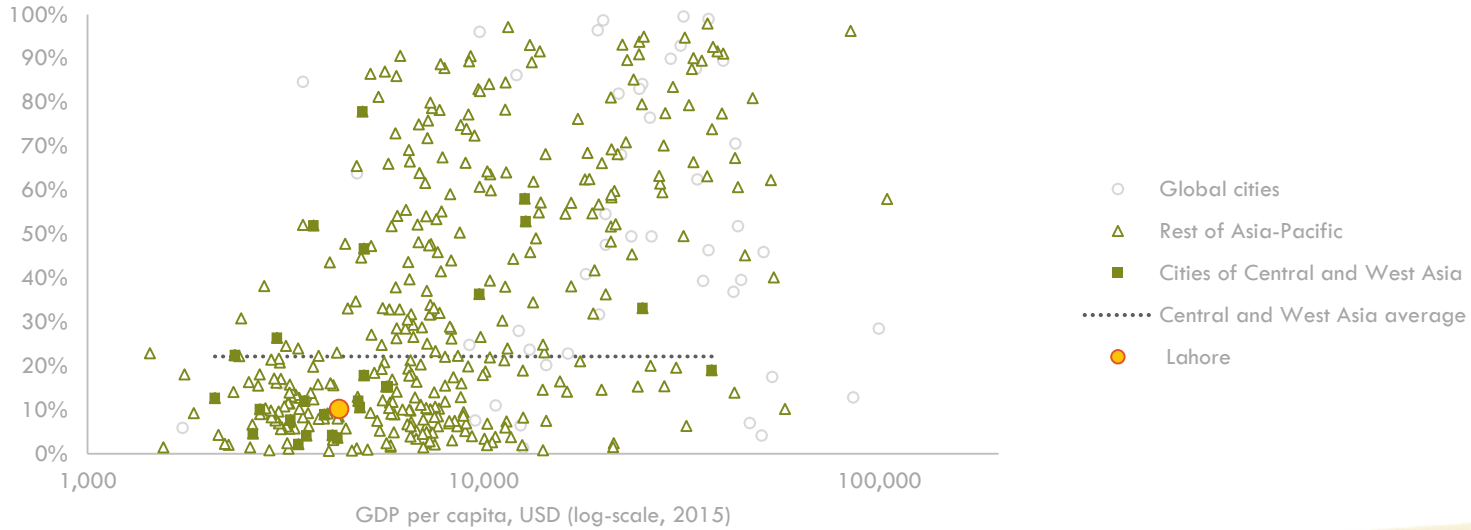


(c) It should be noted that, in most cases, scrapped vehicles are not de-registered, which may result in slightly inflated numbers.

Urban Access

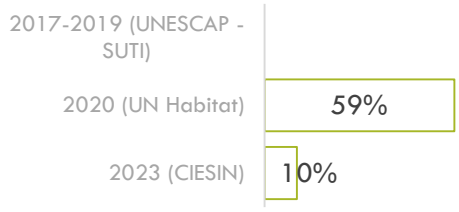
Access to urban public transport

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



Access to urban public transport (d) - by source

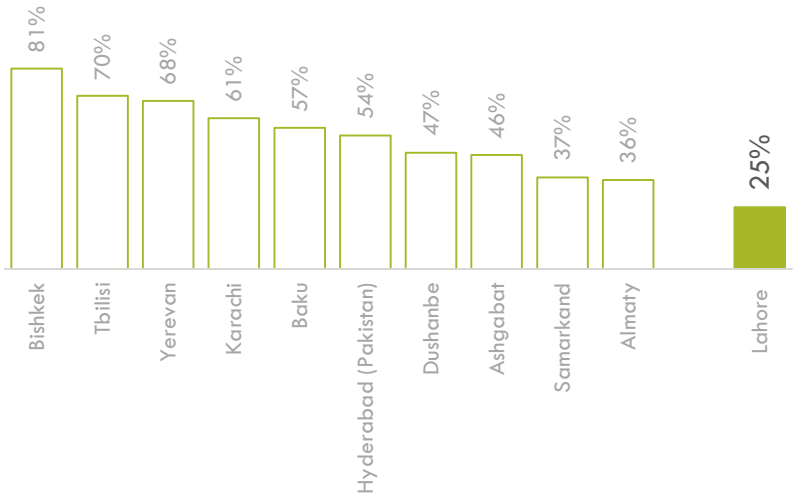
Share of population with convenient access to public transport



(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)

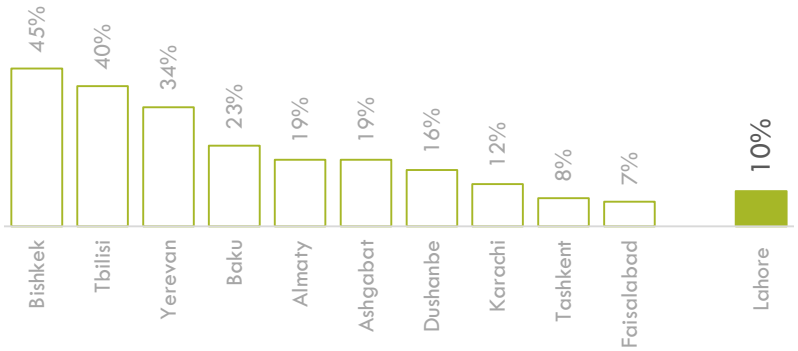
(Share of population) vs. highest 10 cities in Central and West Asia (2020) (ITDP)



(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.

People near car-free places (f)

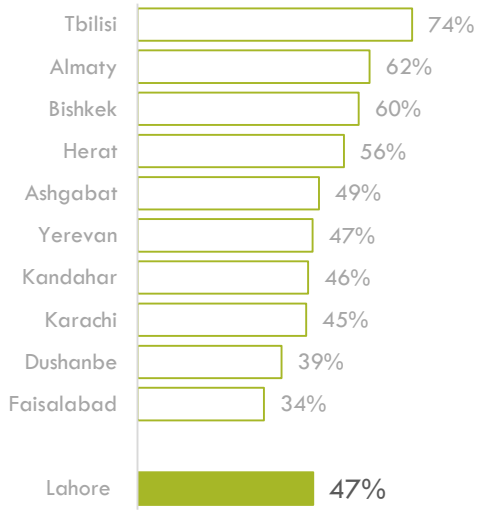
(Share of population) vs. highest 10 cities in Central and West Asia (2020) (ITDP)



(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).

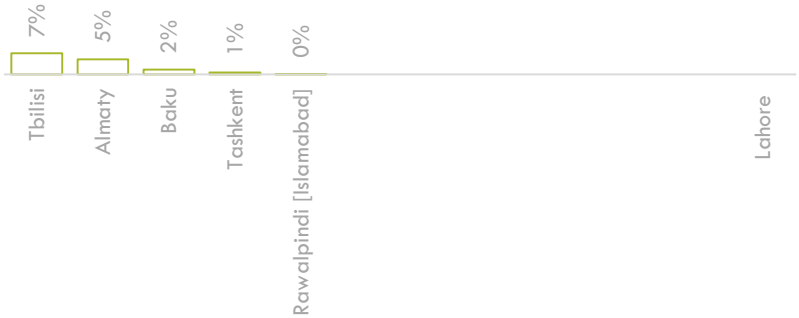
People near open public space

(Share of population) vs. highest 10 cities in Central and West Asia (2020) (UN Habitat)



People near protected bikelanes

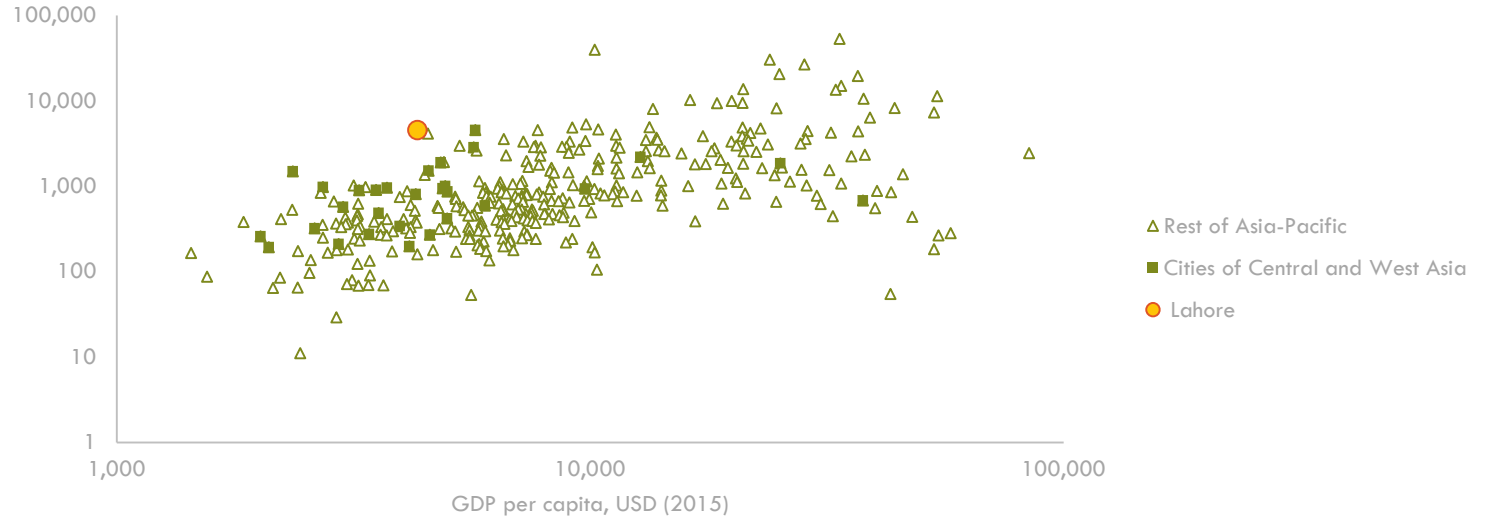
(Share of population) vs. highest 10 cities in Central and West Asia (2020) (ITDP)



Transport externalities

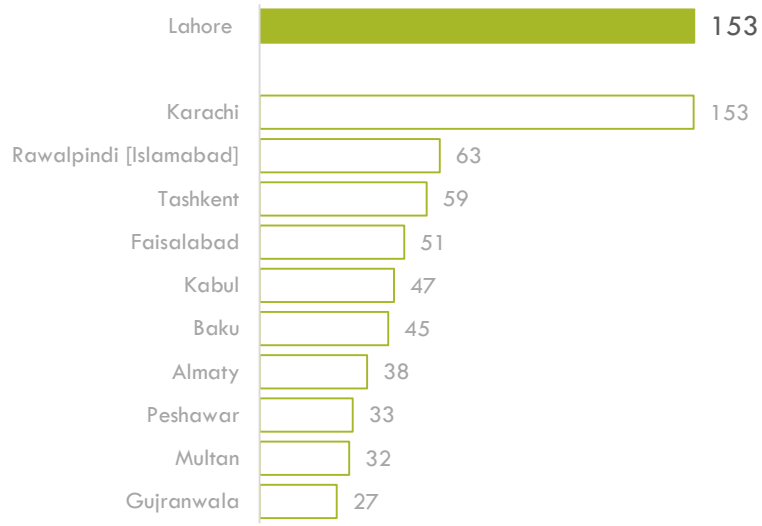
Road transport - CO2 emissions

Thousand tonnes (2022) (ClimateTrace)



Road transport - N2O emissions

Tonnes (2022) vs. highest 10 cities in Central and West Asia (ClimateTrace)

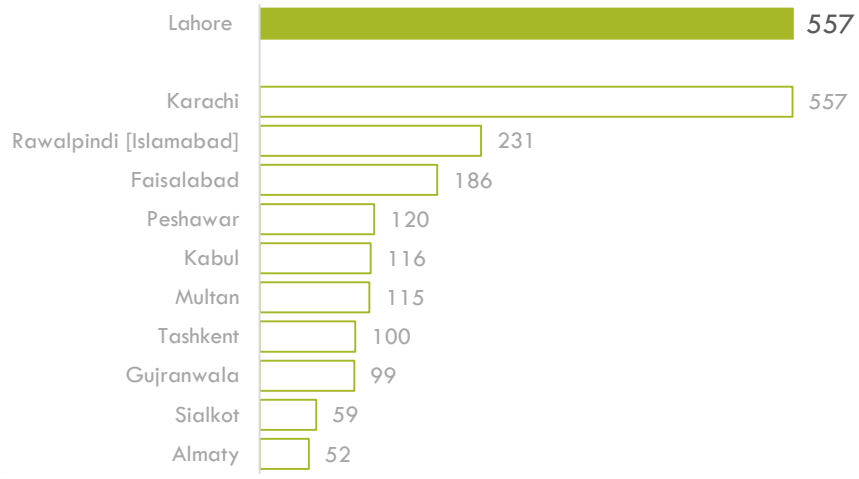


Population exposure to disasters

Share of population (2015) (GHS)

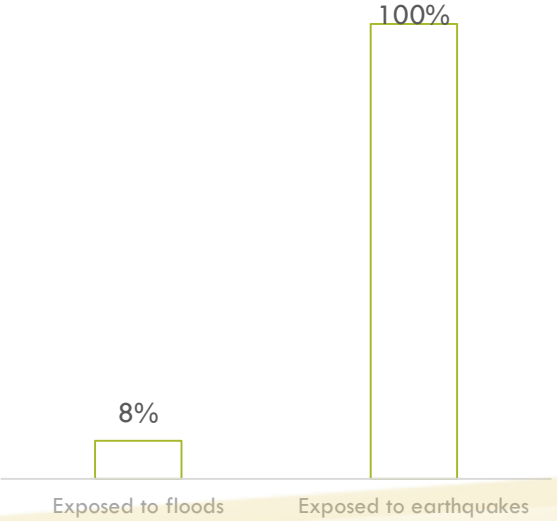
Road transport - CH4 emissions

Tonnes (2022) vs. highest 10 cities in Central and West Asia (ClimateTrace)



Urban built-up area exposure to disasters

Share of urban area (2020) (GHS)

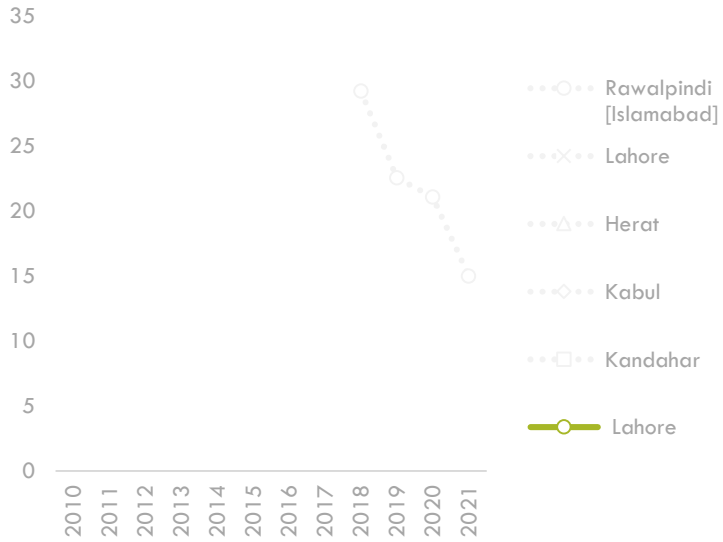


Transport PM 2.5 emissions

(GHS)

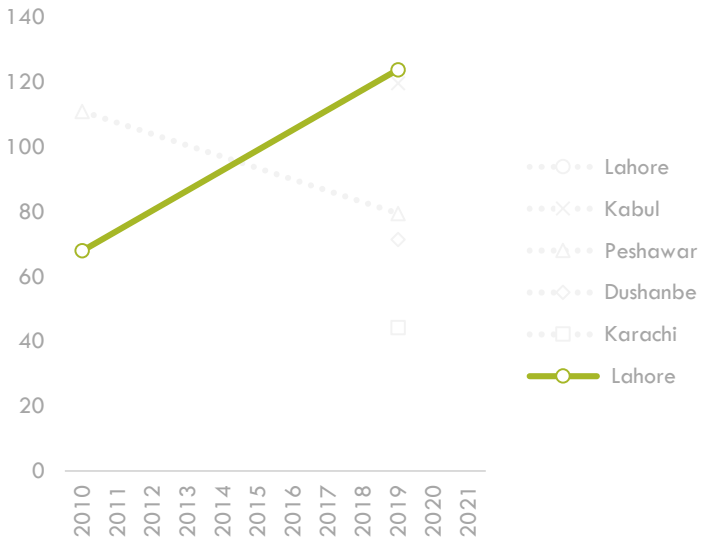
NO2 concentration

ug/m3 (vs. highest 5 cities in Central and West Asia) (WHO)



PM 2.5 concentration

ug/m3 (vs. highest 5 cities in Central and West Asia) (WHO)

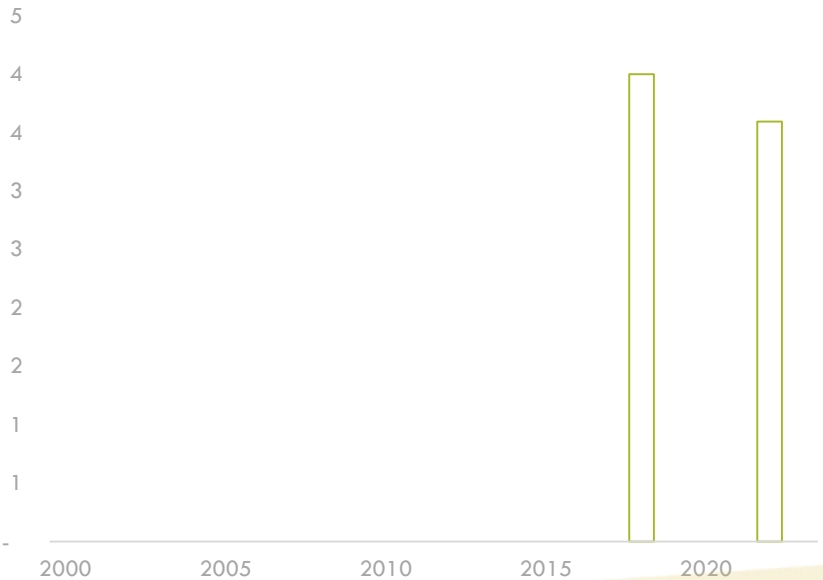


Road crash fatality rate

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)

Lahore 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

Lahore 183rd 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

Lahore 0.05/1.00

(2020) (GHS)

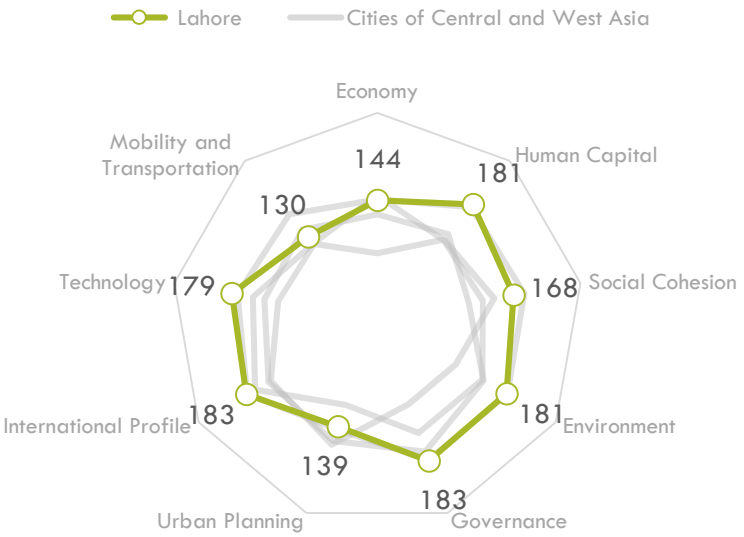
SUTI Geometric Mean

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

Lahore n.d.

Cities in Motion index ranking by subcomponent

Ranking (vs. other Cities of Central and West Asia) (2024) (IESE)



Transport relevant policy documents

Year published	Document name
1965	The Provincial Motor Vehicles Ordinance 1965
1969	Punjab Motor Vehicle Rule 1969
1975	Lahore Development Authority Act 1975
2004	Lahore Master Plan 2021
2008	Pakistan : Preparing the Lahore Rapid Mass Transit System Project
2011	Punjab Ring Road Authority Act 2011
2012	Lahore Urban Transport Master Plan
2015	The Punjab Masstransit Authority Act 2015
n.d.	Transport Department Future Plans
n.d.	Lahore Master Plan 2050

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IESE — IESE. (2024). IESE Cities in Motion Index. https://www.iese.edu/media/research/pdfs/ST-0649-E.pdf

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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/P175833138923008 71be641a5ea7b90e0e6.pdf