DUSHANBE, TAJIKISTAN

URBAN TRANSPORT PROFILE

December 2024

Asian Transport Observatory

Summary

Dushanbe, the capital of Tajikistan, is experiencing rapid urbanization with a population of 1.3 million and a density of 9,000 persons per sqkm in 2020. This growth has led to an increase in built-up area, from 34 sqkm in 2000 to 45 sqkm in 2020. However, road infrastructure remains underdeveloped. Public transport infrastructure is also limited, with no rapid transit systems in operation and a reliance on minibuses and fixed-route taxis, which contribute to traffic congestion. Despite these challenges, Dushanbe has seen a significant increase in GDP per capita, rising from $900 in 2000 to $3,000 in 2015, indicating economic growth that could be leveraged to improve urban transport.

A key issue in Dushanbe is the heavy reliance on private transport, with 73% of trips made by private modes. This contributes to traffic congestion, exacerbated by the lack of parking spaces and the use of road lanes for temporary parking. While initiatives like the "Development of Public Transport in Dushanbe" program have led to improvements in trolleybus infrastructure and the introduction of new buses, public transport usage remains low at only 1%. This highlights the need for further investment in public transport, including expanding the network, improving service reliability, and implementing integrated fare systems. The ongoing World Bank project to improve urban mobility and the Master Transport Development Plan offer potential for addressing these challenges.

Dushanbe faces environmental challenges related to transport, with significant CO2 emissions and high levels of PM2.5 pollution. While the city has taken steps to implement a GPS-based bus dispatching system and electronic information boards, further efforts are needed to promote sustainable transport. This could include promoting walking and cycling, expanding green spaces, and implementing stricter vehicle emission standards. The "Safe City" project, with its traffic management and surveillance systems, can play a role in improving traffic flow and road safety. However, data on road safety indicators is currently lacking, hindering a comprehensive assessment of transport 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.

General

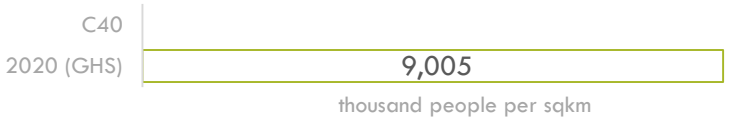
Population 1.3 million
(2020) (GHS)

Land area 144 sqkm
(2015) (GHS)

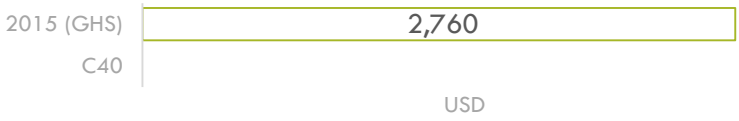
Population density 9 thousand per sqkm
(2020) (GHS)

GDP per capita 3 thousand USD
(2015) (GHS)

Population density

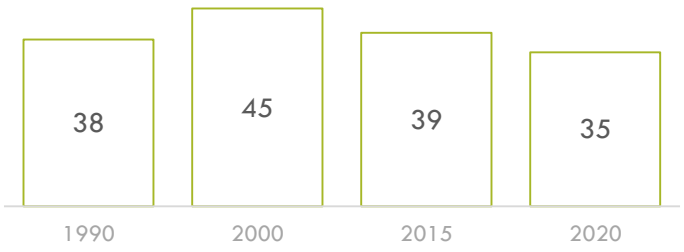


GDP per capita

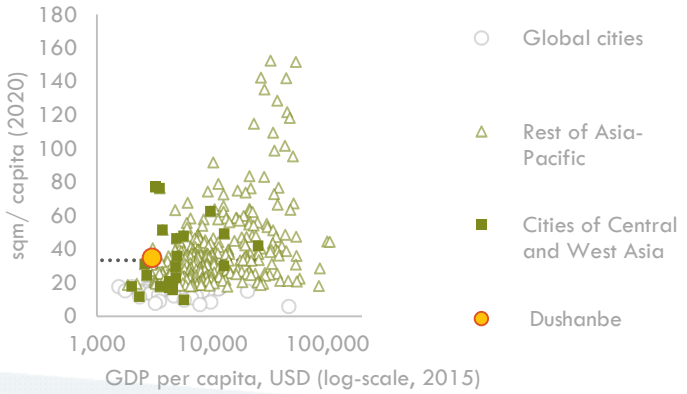


Urban Form and Structure

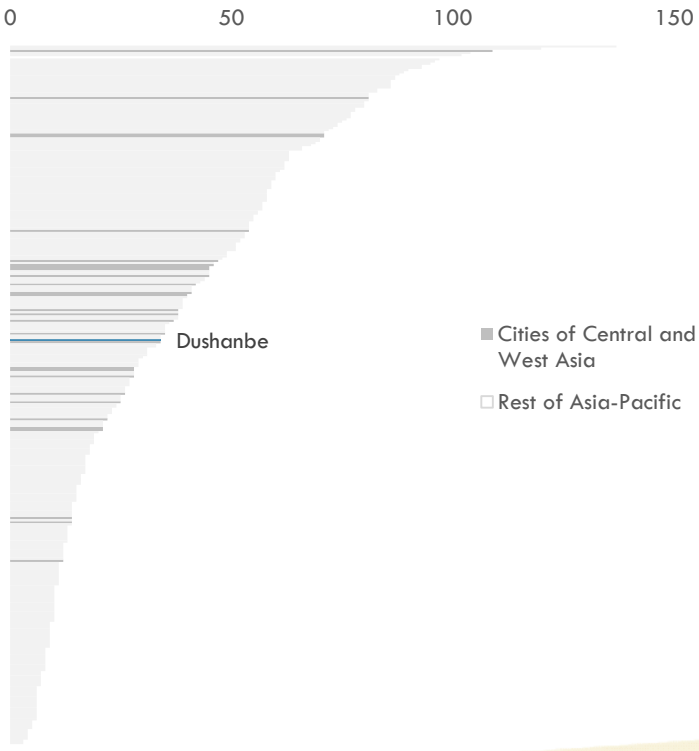
Builtup area per capita
sqm per capita (GHS)



Builtup area per capita
(GHS)

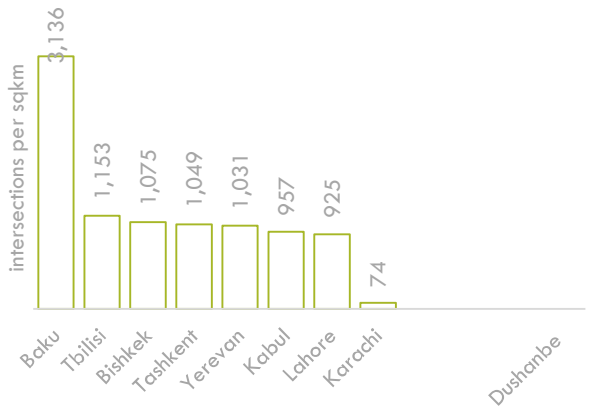


Mean block density
blocks per sqkm (2020) (ITDP)



Intersection density

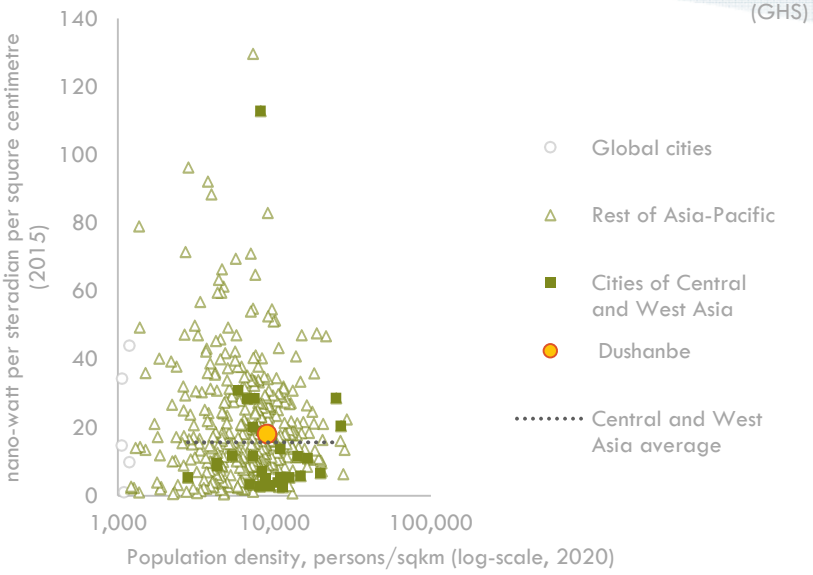
(Oke et.al. (2019) (OSM))



(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

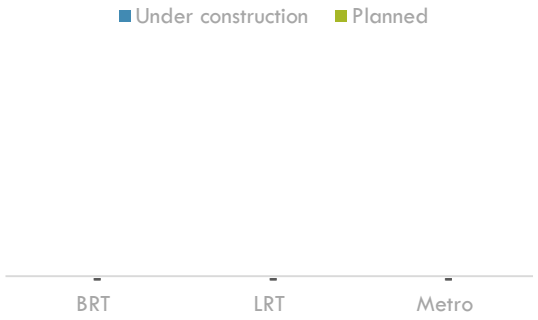
Road availability

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

Road kilometers n.d.

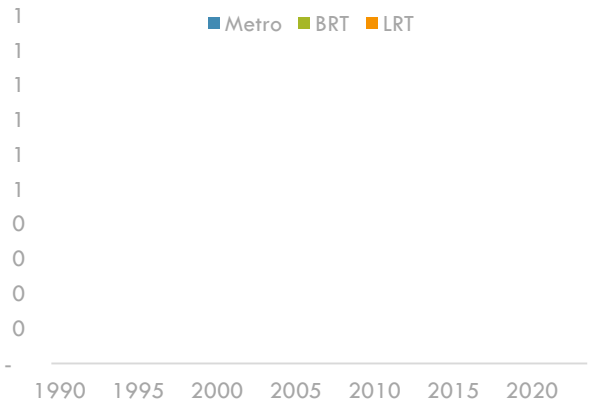
Rapid transit infrastructure

(2024) (TE)



Rapid transit infrastructure

kilometers (ITDP, Primary data)



BRT none

LRT none

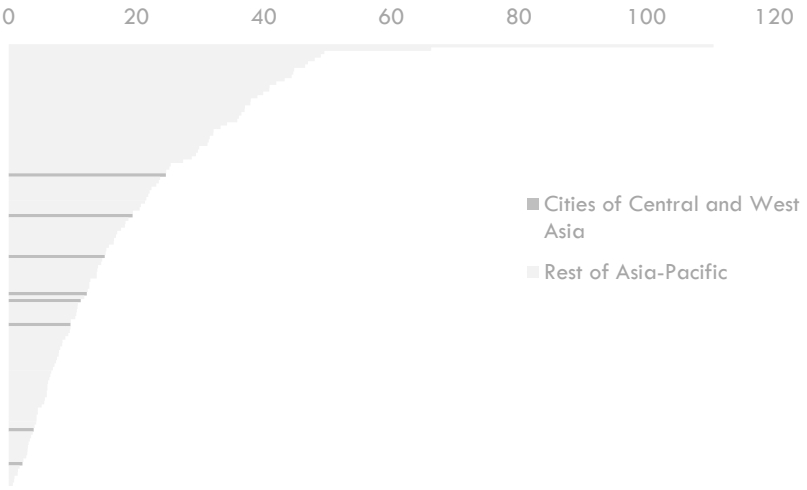
Metro none

Total none

(2023) (ITDP)

Rapid transit availability

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

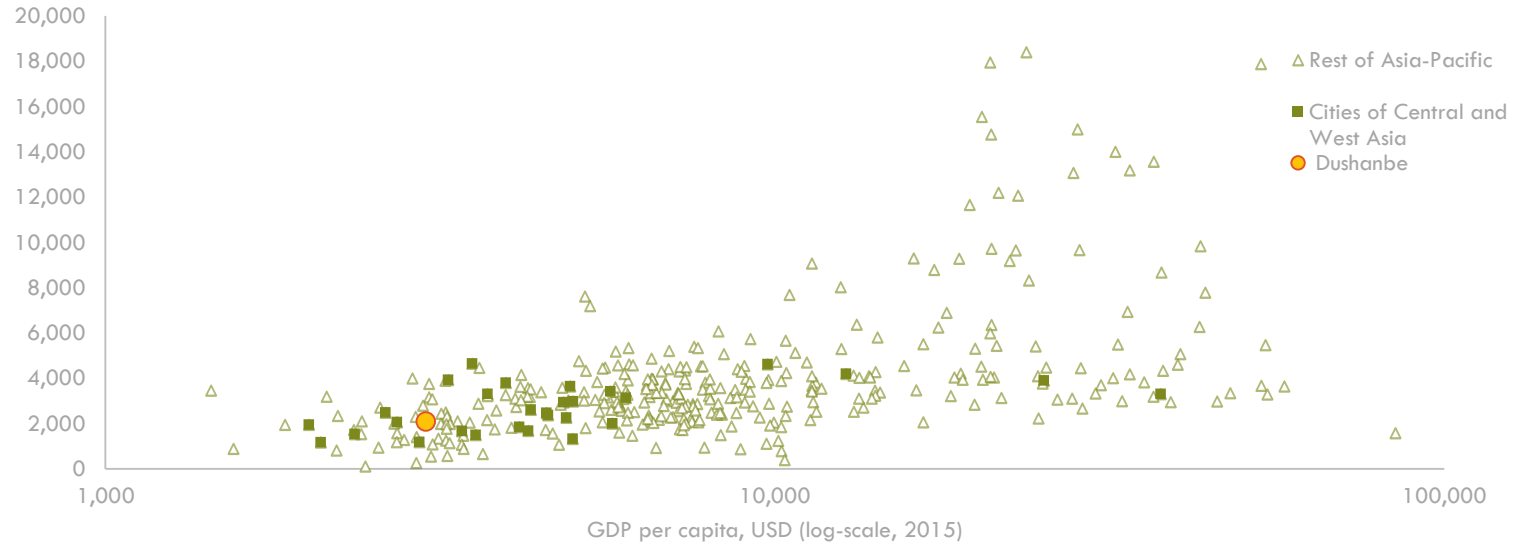


Approximate transit coverage n.d.

Transport Activity and Services

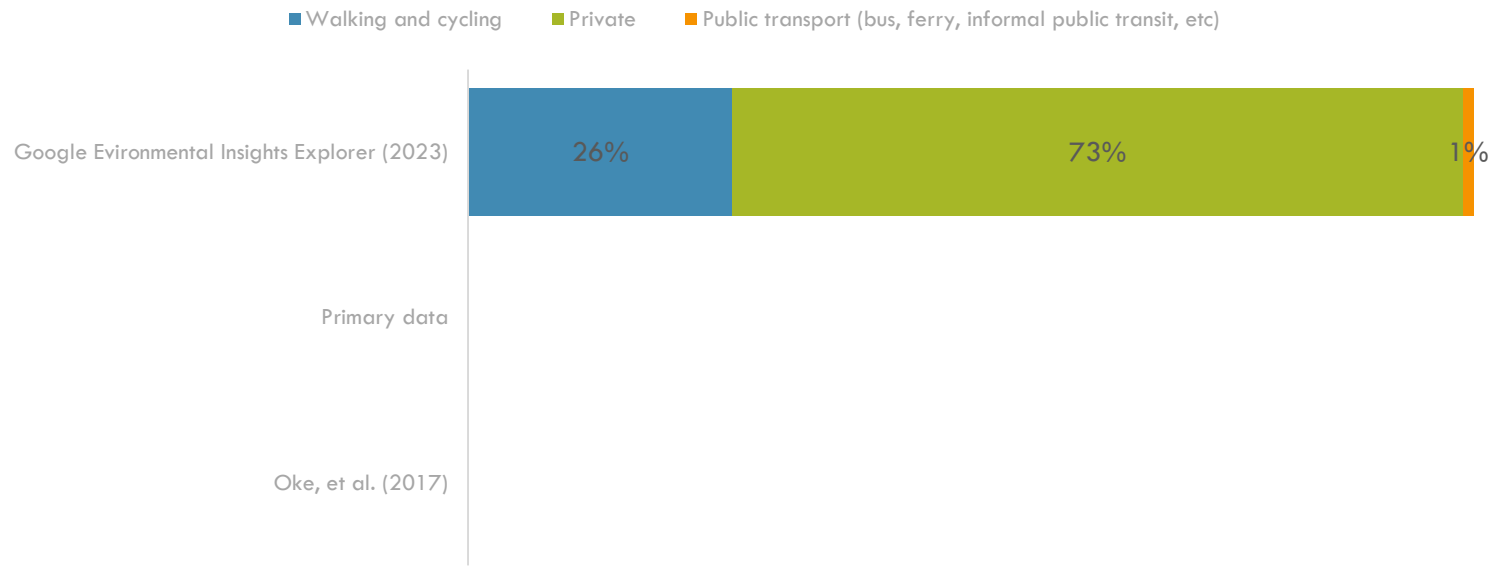
VKT per capita

Vehicle-kilometer per capita (2022) (ClimateTrace)



Trips Mode share (b)

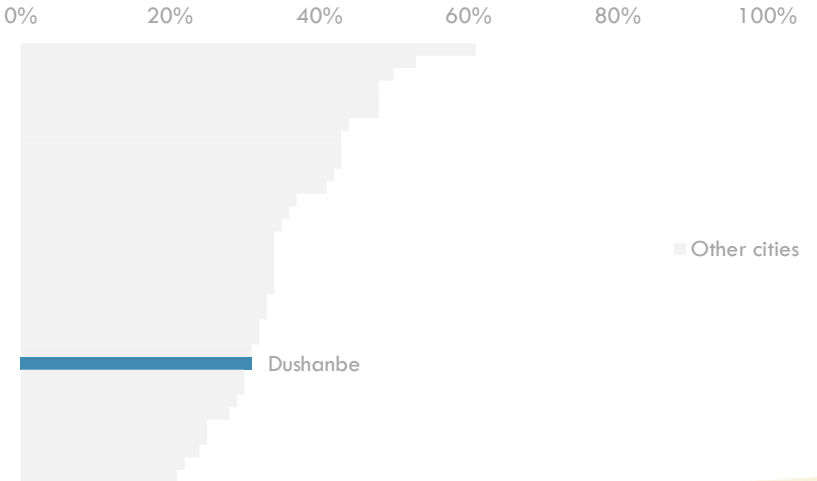
Share, %



(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)

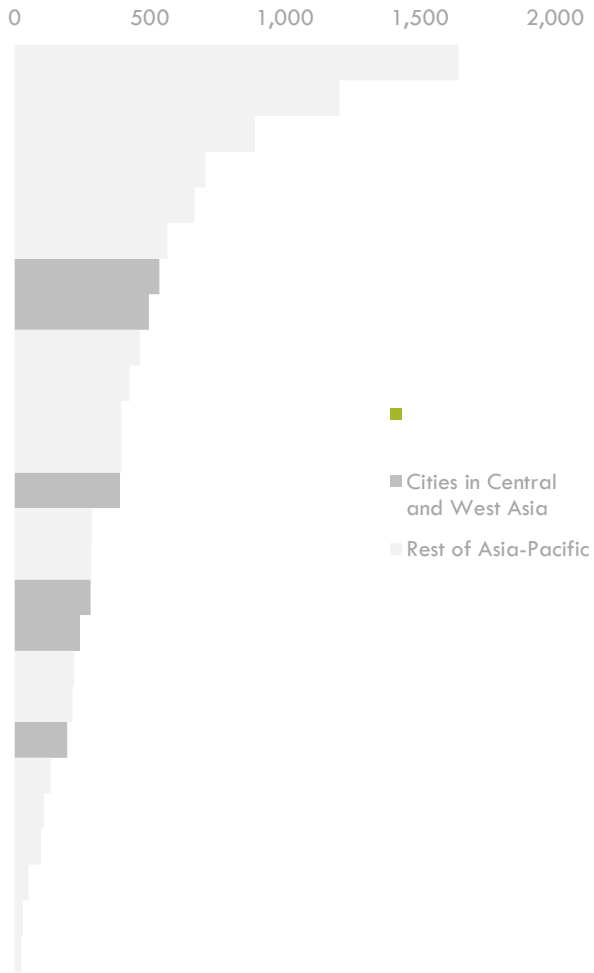


Metro ridership n.d.

Congestion ranking n.d.

Vehicle motorization

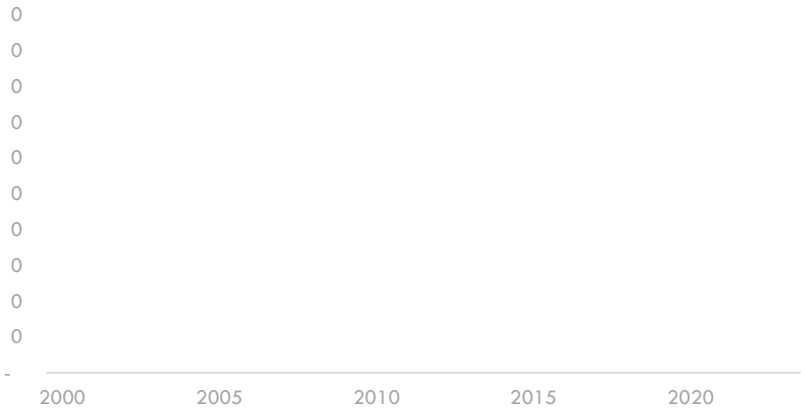
Vehicles per thousand population (Primary data)



(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)

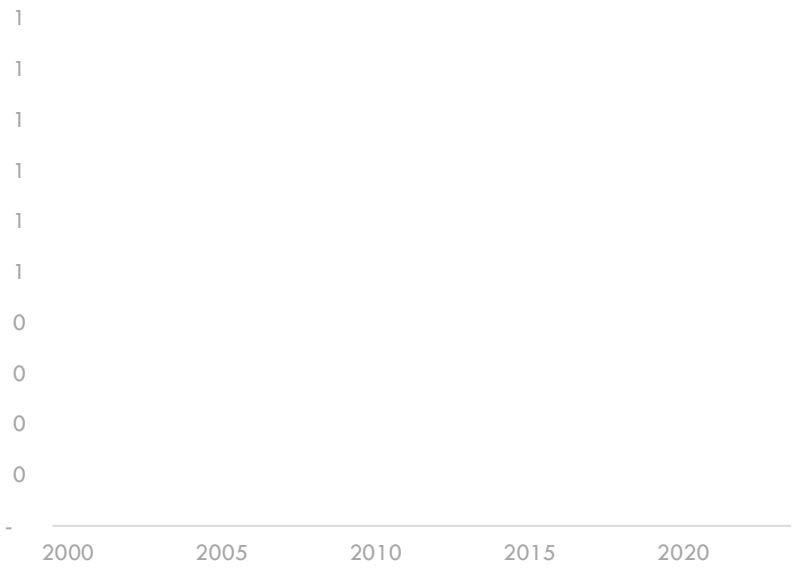
Thousand vehicles (Primary data)



Vehicles considered: no further information

Bus fleet (operational)

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



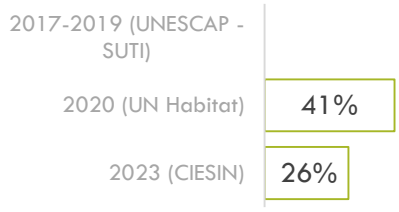
Urban Access

Access to urban public transport

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

Access to urban public transport (d) - by source

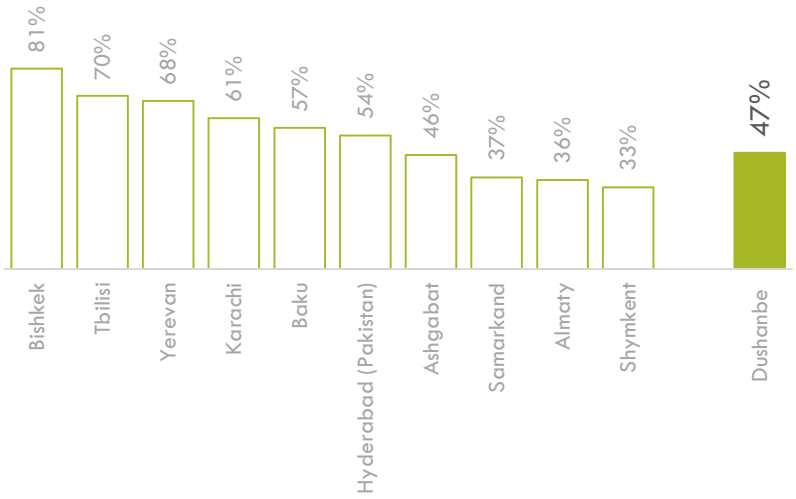
Share of population with convenient access to public transport



(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 Central and West Asia (2020) (ITDP)

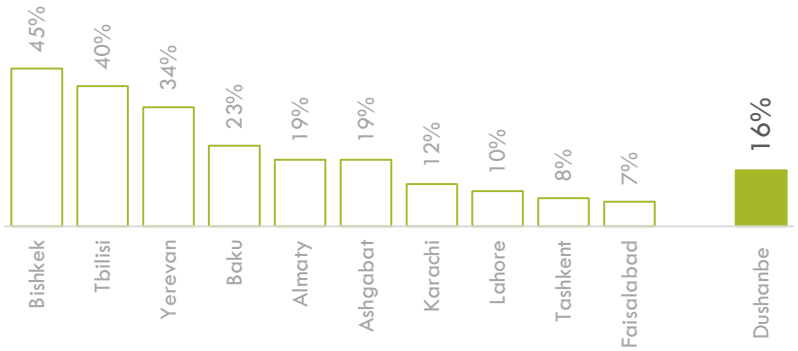


People near car-free places (f)

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

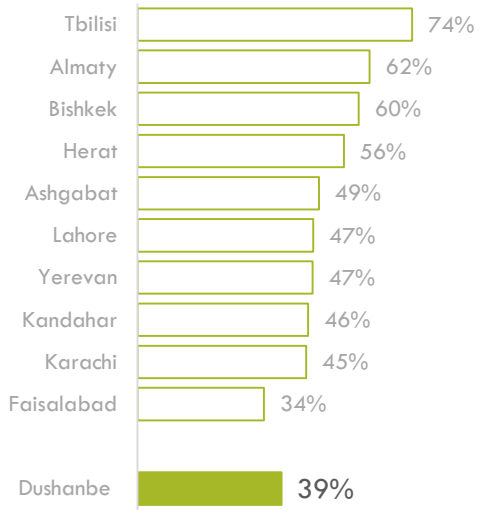
(e) People Near Services measures the percentage of the city's population living within a 1km walk of both healthcare and education. These services are especially vital for babies, toddlers, and their caregivers, who should be able to reach them on foot.

(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).



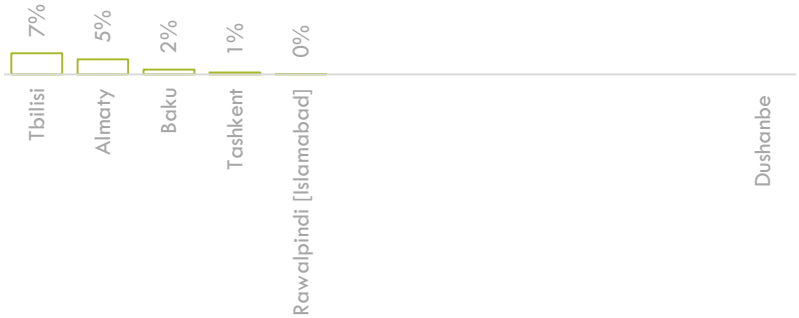
People near open public space

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



People near protected bikelanes

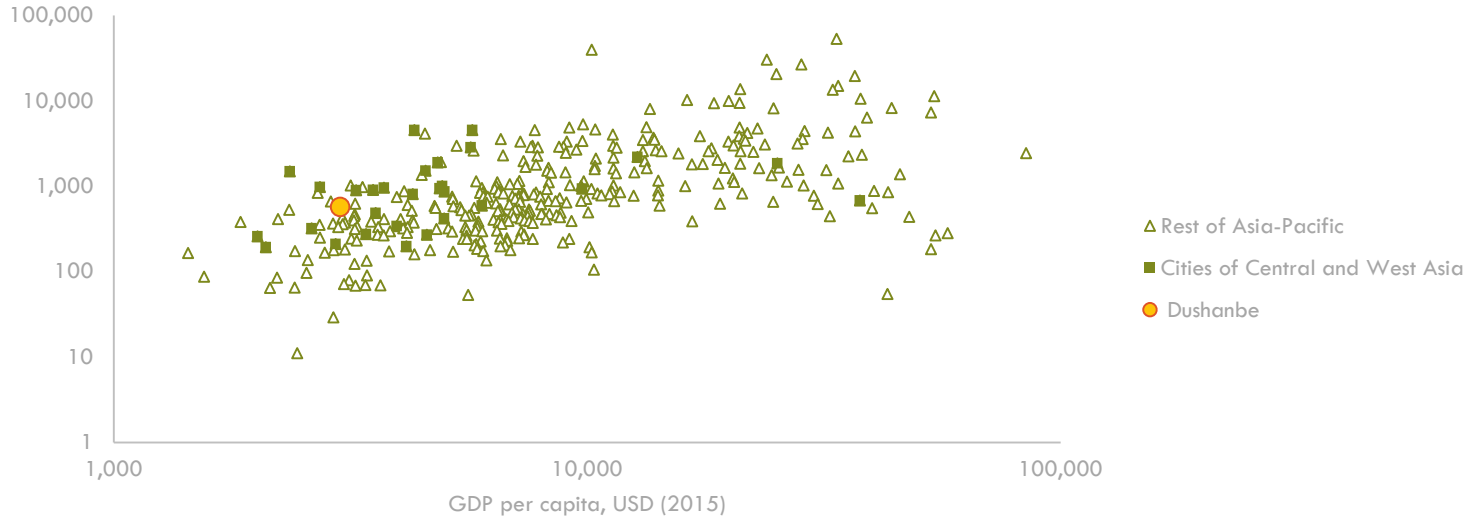
(Share of population) vs. highest 10 cities in Central and West Asia (2020) (ITDP)



Transport externalities

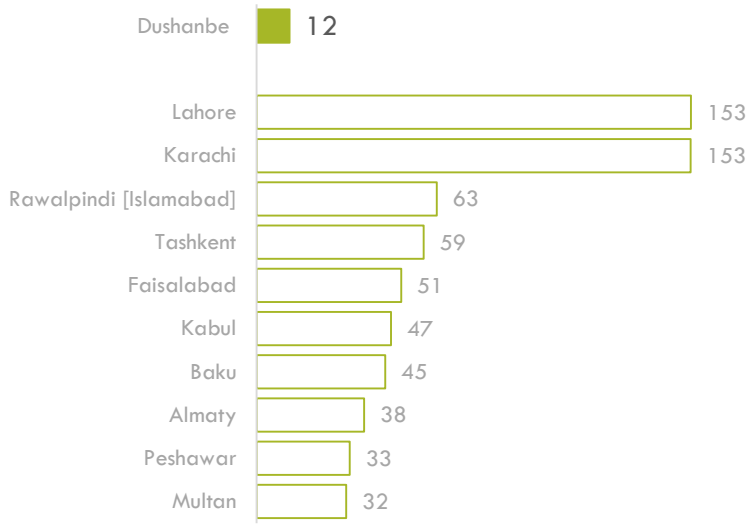
Road transport - CO2 emissions

Thousand tonnes (2022) (ClimateTrace)



Road transport - N2O emissions

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

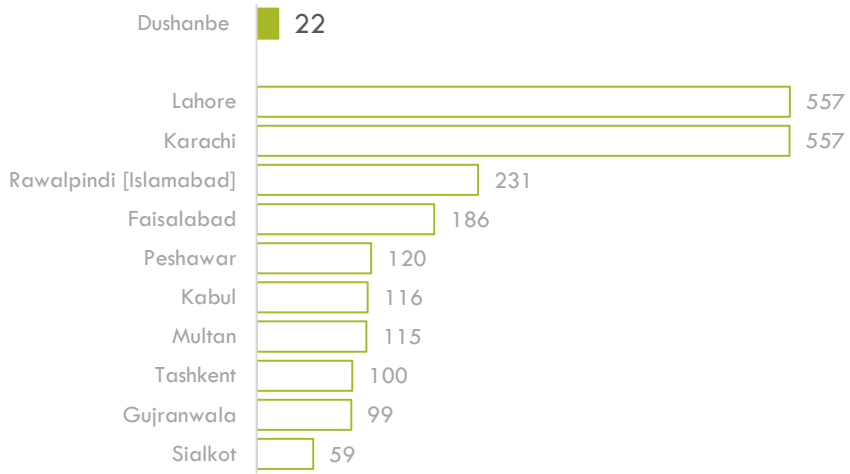


Population exposure to disasters

Share of population (2015) (GHS)

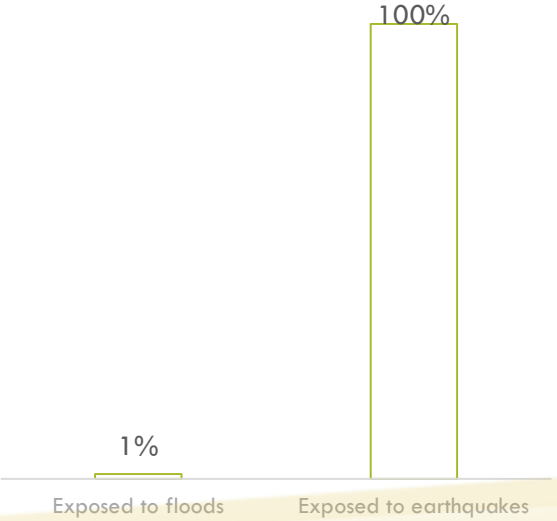
Road transport - CH4 emissions

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)

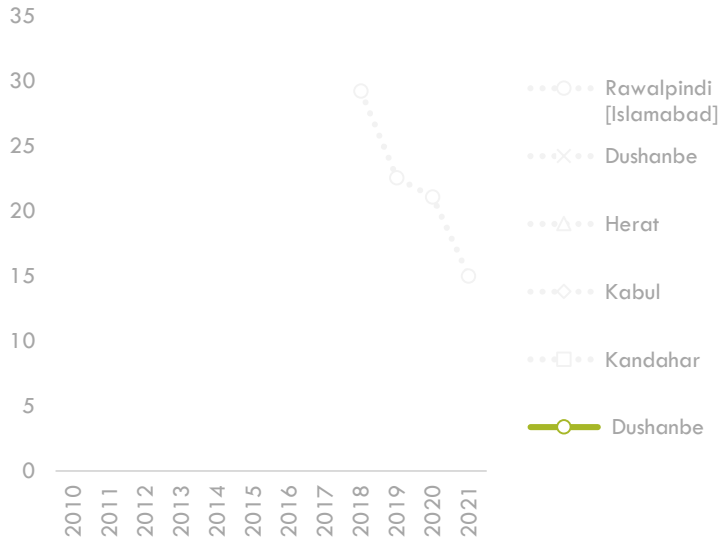


Transport PM 2.5 emissions

(GHS)

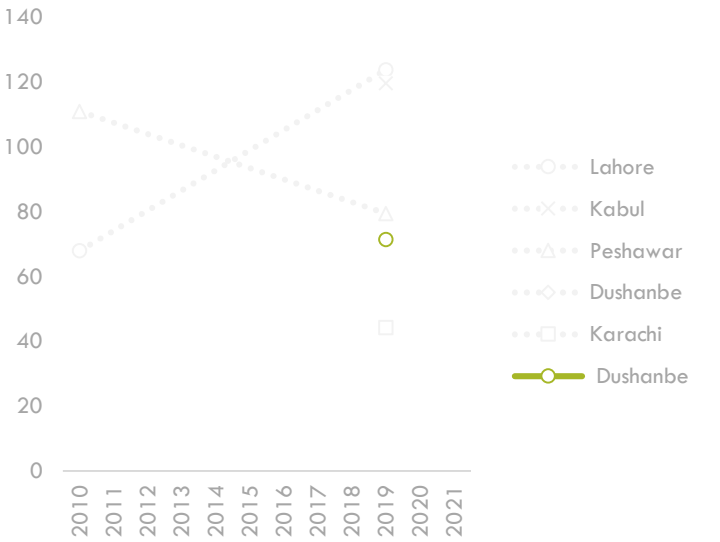
NO2 concentration

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



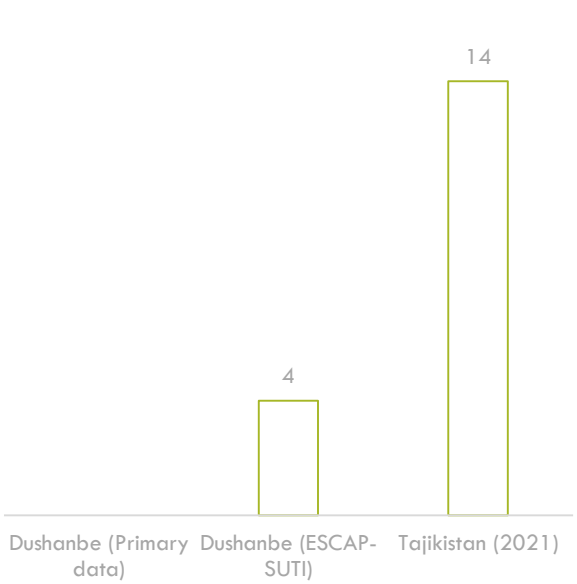
PM 2.5 concentration

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



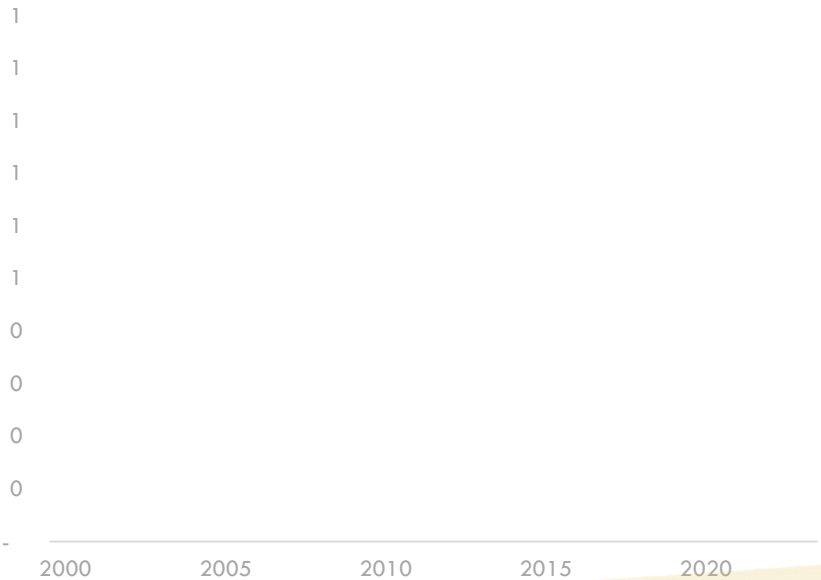
Road crash fatality rate

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)

Dushanbe 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

Dushanbe 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

Dushanbe 0.02/1.00

(2020) (GHS)

SUTI Geometric Mean

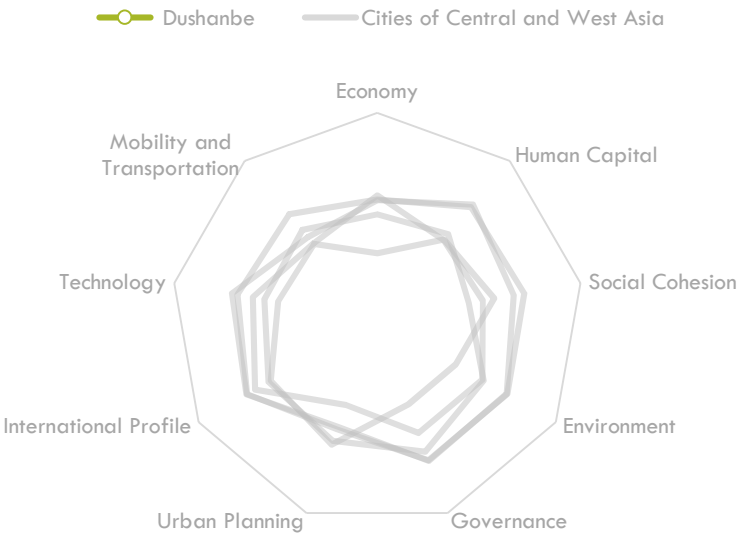
The geometric mean in the Sustainable Urban Transport Index (SUTI) by UNESCAP is a mathematical approach to aggregate scores across its 10 sub-indicators, including public transport ridership, safety, affordability, air quality, and access to transport

Dushanbe 56 score out of 100

(2024) (UNESCAP - SUTI)

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
2023	Dushanbe Sustainable Urban Development Project

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