



Analysis area

MOBILITY ANALYSIS

EMERGING ASPIRING TOP PERFORMER GLOBAL LEADER



Performance and resilience

Congestion	■	■	■	■	■
Public transport reliability	■	■	■	■	■
Transport safety	■	■	■	■	■
Integrated and shared mobility	■	■	■	■	■
Air quality	■	■	■	■	■



Vision and leadership

Vision and strategy	■	■	■	■	■
Investment	■	■	■	■	■
Innovation	■	■	■	■	■
Regulatory environment	■	■	■	■	■
Environmental sustainability initiatives	■	■	■	■	■



Service and inclusion

Public transit supply	■	■	■	■	■
Transport affordability	■	■	■	■	■
Versatility	■	■	■	■	■
Customer satisfaction	■	■	■	■	■
Accessibility	■	■	■	■	■

KEY MOBILITY STATISTICS

Public transport options*
Metro, commuter train, bus, tram

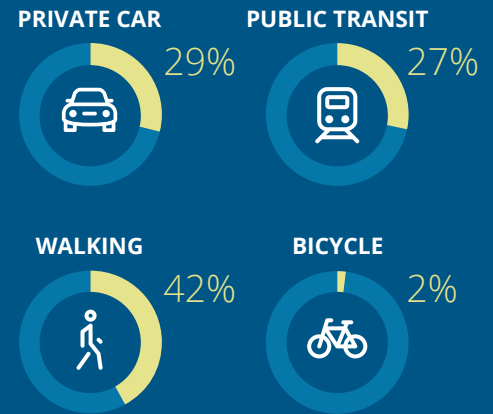
Monthly public transport pass
US\$66

GDP
US\$138 billion (2016)

Principal transport authorities
Autoritat del Transport Metropolita (Àrea de Barcelona), Government of Catalonia

*Regulated, licensed, and monitored by principal transport authorities.

JOURNEY MODAL SPLIT



FUTURE OF MOBILITY CAPABILITY



STRENGTHS

- Continuous improvement of the integrated fare system, which covers all public transport modes and areas
- Bus system has good geographic coverage of routes with sufficiently sized fleet
- Focus on creating more space for pedestrians via efforts such as Superblocks, which restrict car use to a few roads

CHALLENGES

- Identifying routes and plans to test compact self-driving vehicles suitable for dense urban layout
- Maintaining investment in traffic management technologies to reduce congestion and facilitate Superblocks
- Developing a unified transport mobile app to cover public transport, bikesharing, carsharing, ridesharing, and smart parking

Key focus areas to improve city mobility and realize the Future of Mobility:



MOBILITY ANALYSIS FURTHER DETAILS:

 **Performance and resilience**

Barcelona has made improvements in road safety and shared mobility. But it faces persistent air and noise pollution, despite the high use of public transport and active modes.

- In 2017, Barcelona City Council installed a new collision avoidance system in buses, which has reduced fatalities. Plans are in place to implement it in more than 3,200 municipal vehicles.
- The integrated fare system allows commuters to make four journeys across all public transport modes using a single ticket within the region's 253 municipalities. The system now enables payment via near-field communication.
- To reduce air and noise pollution, urban planners introduced Superblocks, which restrict the use of cars to arterial roads and free up streets for active transport and new green spaces. Measures are also in place to reduce road traffic in nearby areas.

 **Vision and leadership**

To support the Superblock program and its restrictions, the city has endeavored to install bicycle docks and lanes closer to 95 percent of residents.

- In 2016, Barcelona agreed to invest more than US\$37 million on tripling the bicycle lanes to 300 km by 2019, and increase the number of bicycle parking lots.
- Under its smart city strategy, Barcelona introduced space-vacancy sensors and automated fare collection in car parking lots, which has increased revenue by US\$50 million per year by optimizing the use of parking spaces.
- The city's Electric Mobility Strategy 2018–2024 outlines plans to convert 80 percent of the bus fleet to electric and triple the number of public charging points at underground public parking spaces.

 **Service and inclusion**

With increasing numbers of passengers using Barcelona's public transport, authorities have used technology to improve accessibility for the disabled.

- Barcelona City Council is collaborating with Transports Metropolitans de Barcelona (TMB) to redesign the bus network. By fall 2018, 95 percent of the population will have access to buses within 300 meters of their homes.
- Passengers using public transport report high levels of customer satisfaction, evidenced by a 3.2 percent increase in 2016–2017, to 15 million passengers.
- Over 90 percent of metro stations and buses are fully adapted for people with reduced mobility. TMB has developed unique solutions such as mobile applications for the visually impaired and mobility scooters on public transport.

SUMMARY

Barcelona's transportation system performs well, with good coverage, high-quality service, and an impressive integrated fare system. Consistently ranked as one of the most advanced smart cities, Barcelona already has smart parking and high accessibility for disabled groups. In addition, innovative urban solutions such as Superblocks may reduce car trips by more than 20 percent and increase space for bicycles and pedestrians. Self-driving technologies will be a challenge given the dense urban quarters, and the city will need to maintain its pace of investment to capture the full benefits from new mobility solutions.

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About the Deloitte City Mobility Index

The Deloitte City Mobility Index reviews major cities on key aspects of mobility and the resulting relationship to economic performance. Drawing on publicly available data, client conversations, and bespoke Deloitte analyses, we assess each city's ability to transport its citizens both now and in the future and therefore its potential to bring prosperity to the city.

As we receive feedback, we will update and expand the analysis, which may mean the results shown in this document may change.

For the full interactive index, visit the Deloitte City Mobility Index at deloitte.com/insights/mobility-index.

For Deloitte's insights on the Future of Mobility, visit deloitte.com/insights/future-of-mobility.

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