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Global dialogue for better transport

Policy Options to Decarbonise Urban Passenger Transport

Results of expert opinion survey

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OECD

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INTRODUCTION

- **The expert survey is part of the ITF Decarbonising Transport project's thematic work stream on urban passenger transport, aiming to**
  - Identify policy priorities, megatrends and pressing issues in this sector
  - Gather initial evidence on the effectiveness of new urban mobility options and emerging technologies
- **The survey was sent to experts from the government, industry, civil society and academia etc.**
  - 116 experts replied, around 65% completed fully the questionnaire
  - 85% of respondents European based, 15% are non-European based

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URBAN TRANSPORT CHALLENGES

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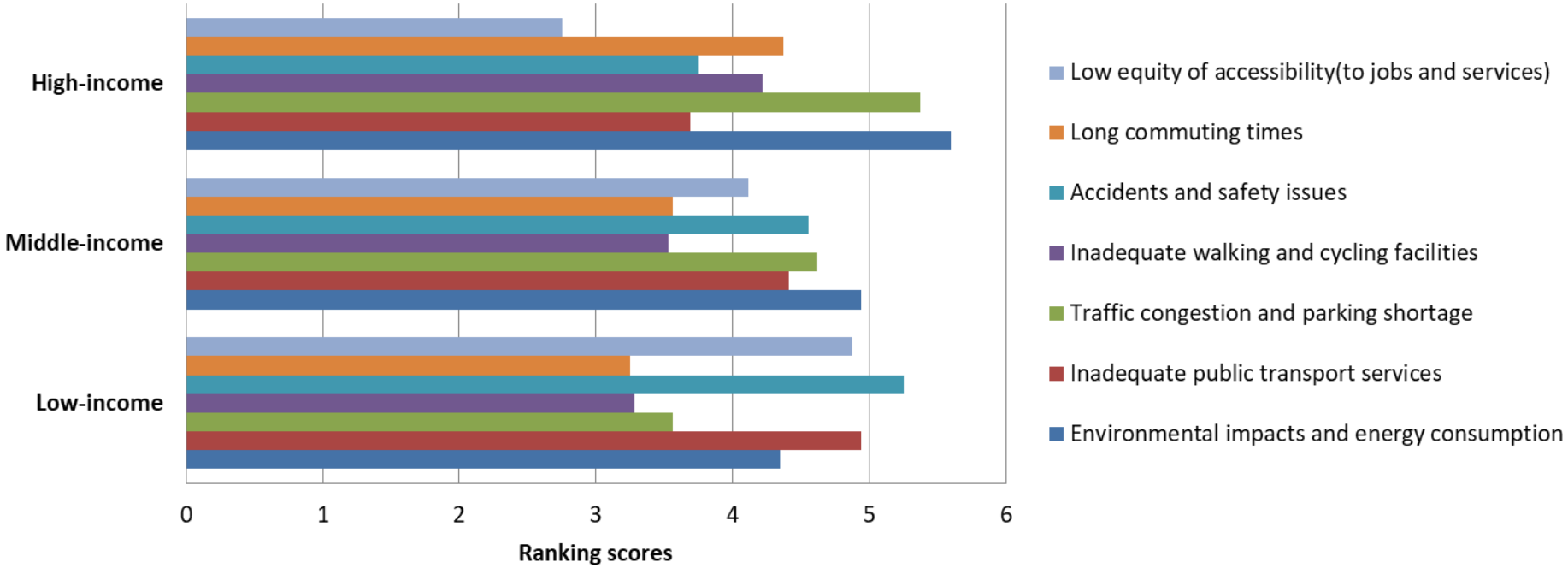
URBAN TRANSPORT CHALLENGES

❑ Pressing urban challenges differ based on the level of development



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URBAN TRANSPORT CHALLENGES

- **Environmental issues are the most pressing challenges in the middle- and high-income countries**

	Low-income	Middle-income	High-income
1	Accidents and safety issues	Environmental impacts and energy consumption	Environmental impacts and energy consumption
2	Low equity of accessibility	Traffic congestion and parking shortage	Traffic congestion and parking shortage
3	Inadequate public transport services	Accidents and safety issues	Long commuting times

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URBAN POLICY PRIORITY

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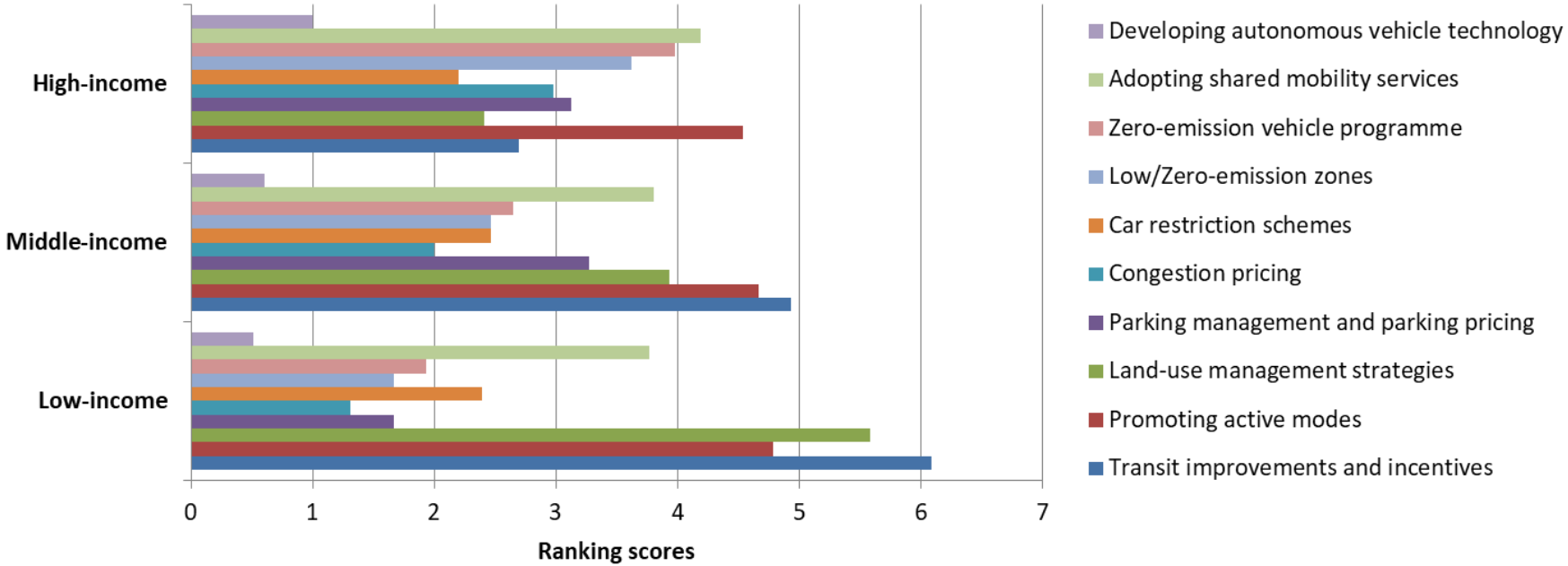
POLICY PRIORITY

❑ Policy priorities for each country group vary significantly

- Promoting active modes and shared mobility are consistent among all groups



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POLICY PRIORITY

	Low-income	Middle-income	High-income
1	Transit improvements and incentives	Transit improvements and incentives	Promoting active modes
2	Land-use management strategies	Promoting active modes	Adopting shared mobility services
3	Promoting active modes	Land-use management strategies	Zero-emission vehicle programme
4	Adopting shared mobility services	Adopting shared mobility services	Low/Zero-emission zones

COST-EFFECTIVENESS OF MEASURES

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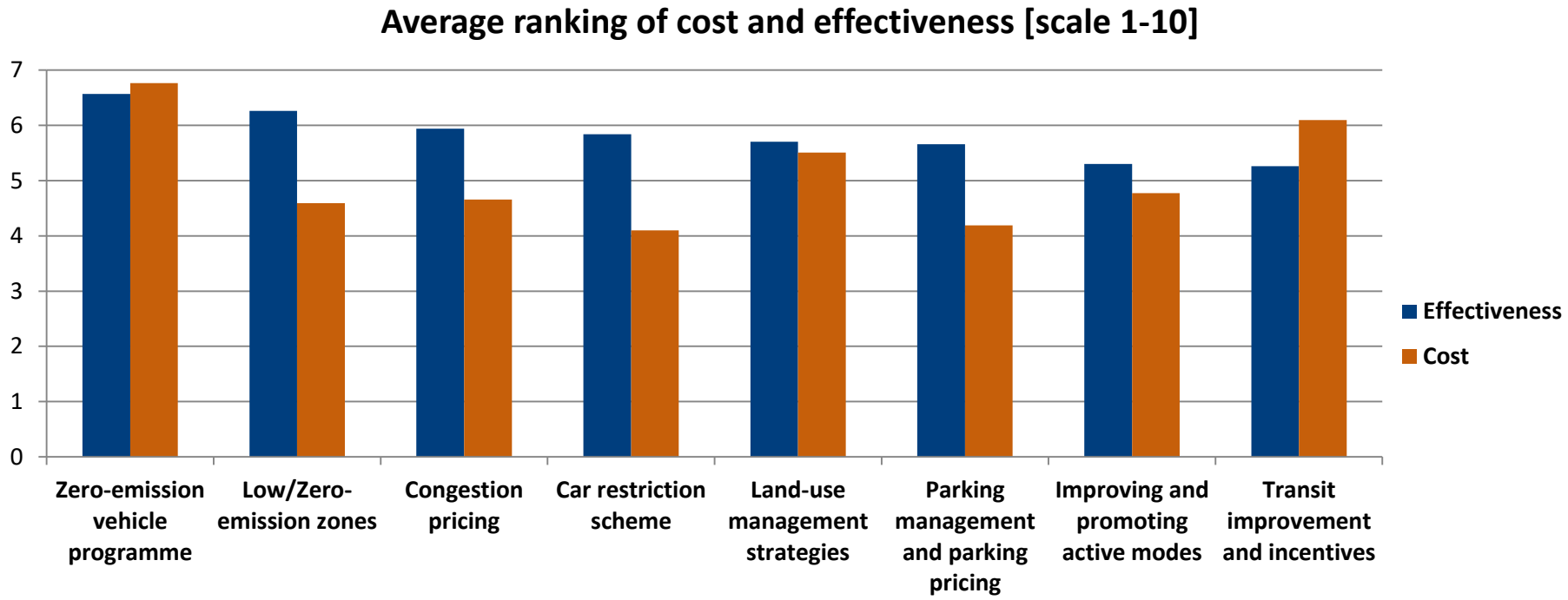
COST-EFFECTIVENESS OF MEASURES
- in reducing CO_2 emissions



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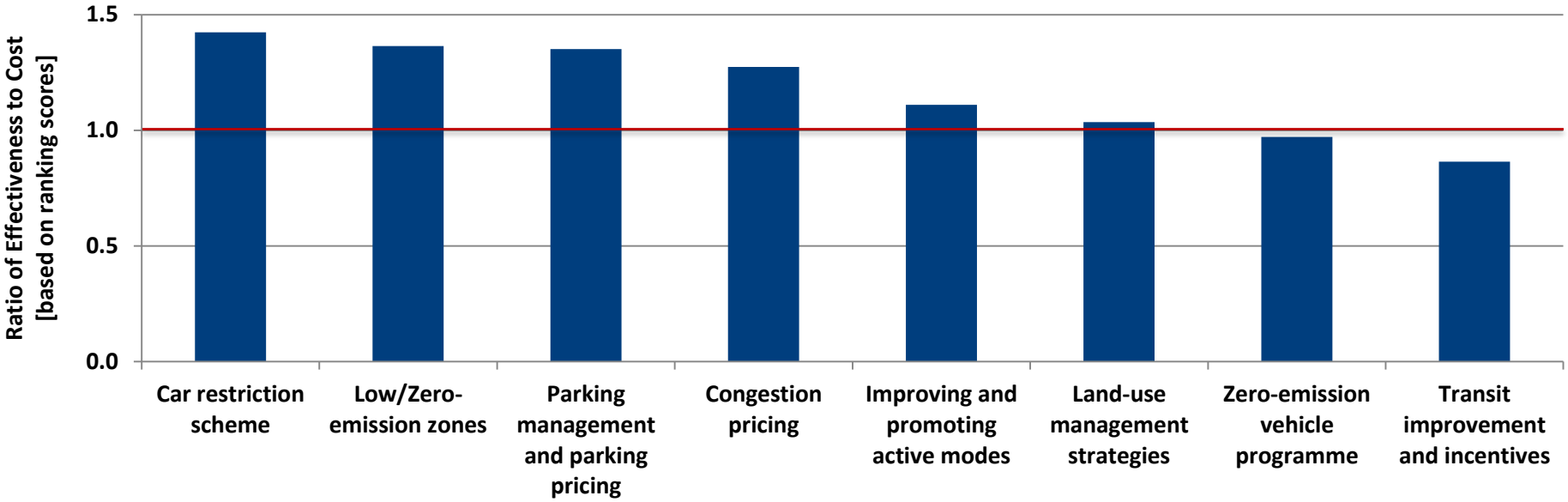
COST-EFFECTIVENESS OF MEASURES
- in reducing CO_2 emissions

- Car restriction scheme is considered to be the most cost-effective



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ZERO-EMISSION VEHICLE, ZONES

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ZERO-EMISSION VEHICLES

- On average, ZEV will take up less than 50% of the passenger car fleet by 2050

Expected penetration rate of ZEV

	Low-income	Middle-income	High-income
2030	Less than 10%	Between 10% and 30%	Between 20% and 40%
2050	Between 10% and 30%	Between 30% and 50%	Between 50% and 70%

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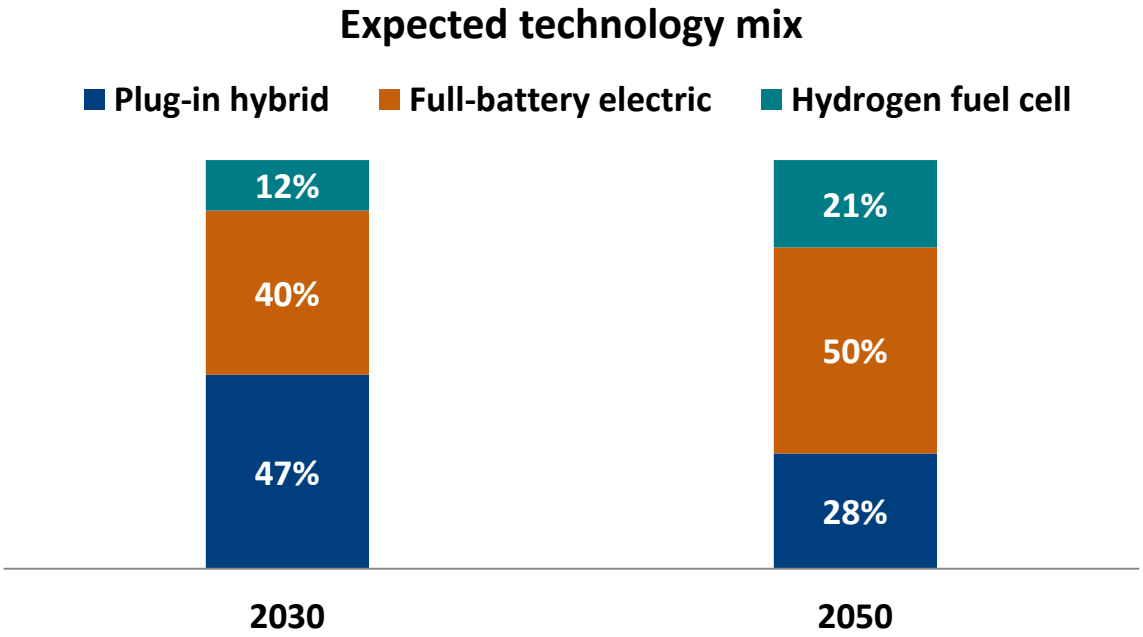
ZERO-EMISSION VEHICLES

- **Full-battery electric cars will take the highest share among the electric car fleet by 2050**



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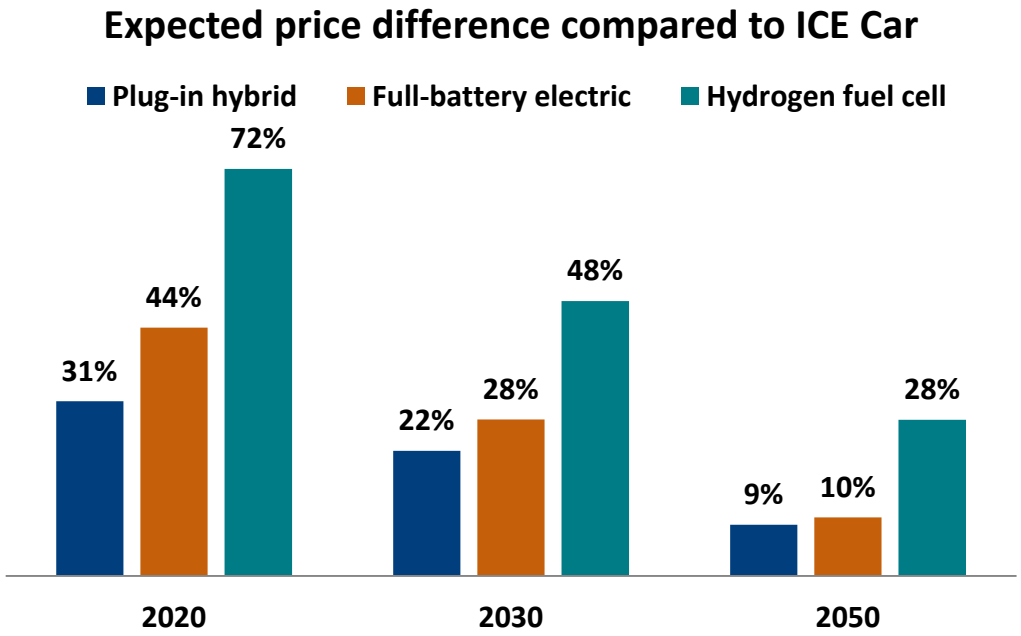
ZERO-EMISSION VEHICLES

❑Average price difference between an electric car and an internal combustion engine (ICE) car?



- Prices of electric cars are expected to remain higher than ICE cars by 2050, despite the price gaps being reduced over time.

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ZERO-EMISSION VEHICLES

- **Cost, charging facilities and vehicle performance are the top three barriers for the uptake of ZEVs**

24%	Vehicle purchase cost
23%	Vehicle recharge time
20%	Availability of charging facilities
17%	Vehicle range
10%	Lack of strict emission regulations
7%	Consumer knowledge and awareness

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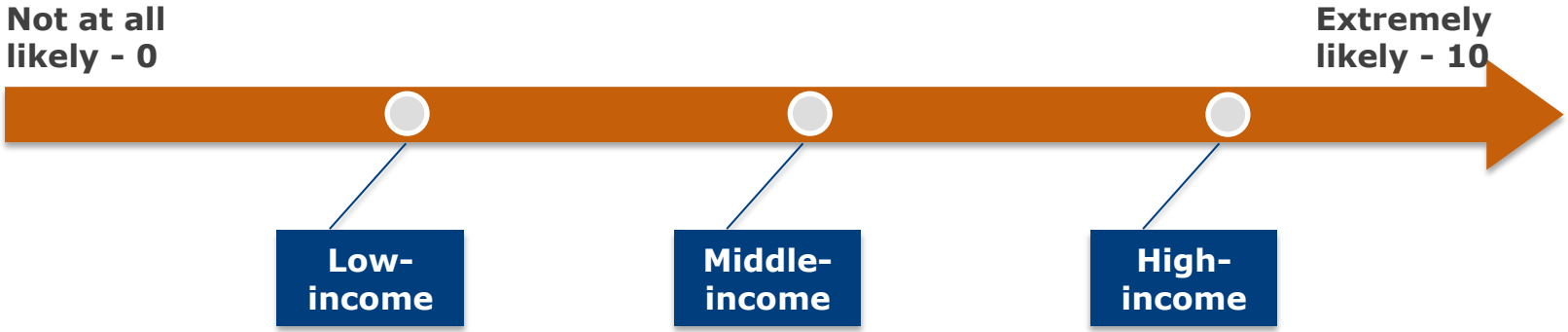
ZERO-EMISSION ZONE

- Cities in high-income countries are highly likely to implement ZEZ by 2050, whereas very unlikely for low-income cities



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SHARED MOBILITY SERVICES

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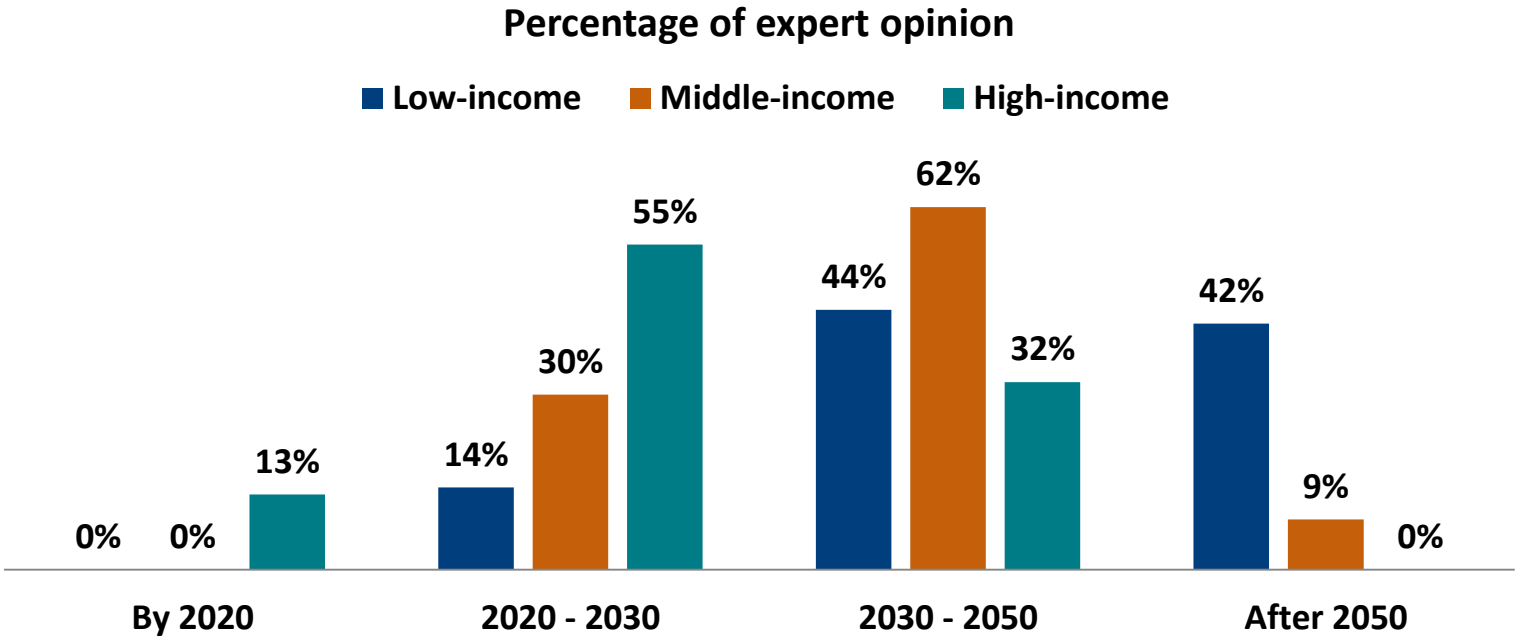
SHARED MOBILITY SERVICES

- **When will shared mobility services have a significant mode share in cities? (e.g. > 10%)**



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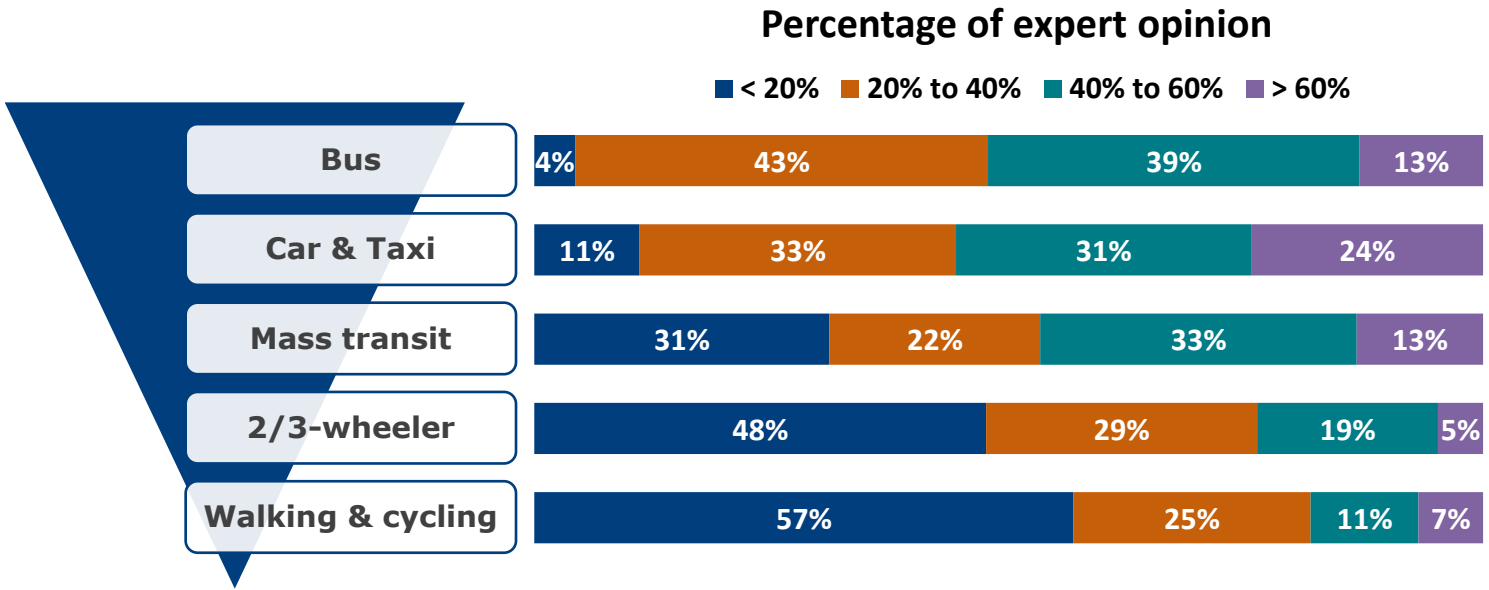
SHARED MOBILITY SERVICES

- Current Bus, Car, Taxi and Mass transit trips will be significantly replaced by shared mobility services by 2050
- Bus will be affected the most by shared mobility, while NMT the least



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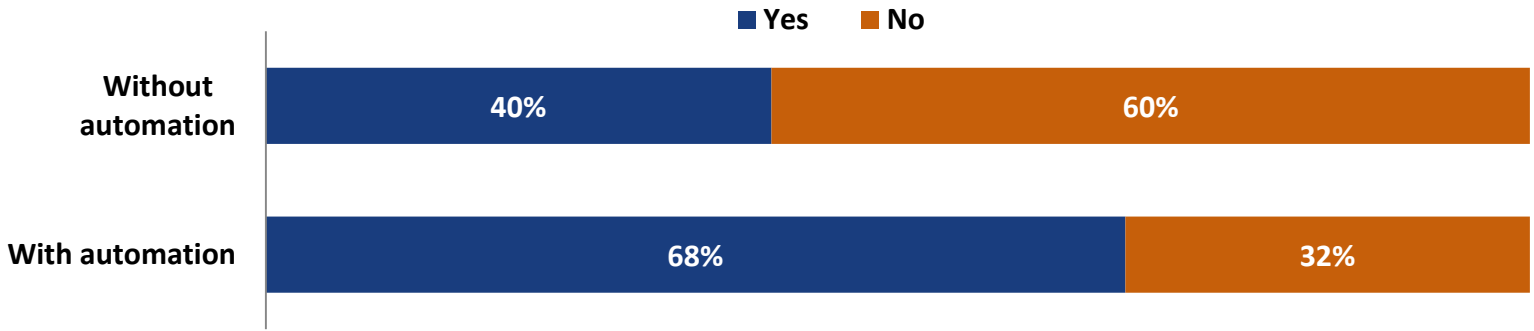
SHARED MOBILITY SERVICES

- Could average trip cost of on-demand bus services become lower than the regular bus services?



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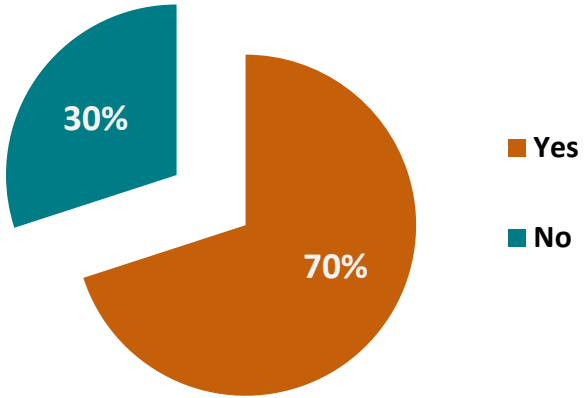
SHARED MOBILITY SERVICES

❑ Who is in the best position to lead a transition to shared mobility services?

45%	New mobility service providers
31%	Public transport operators
15%	Public-private partnership
6%	Automotive industry

❑ Should shared mobility be a public transport option managed by local transport authorities?



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SHARED MOBILITY SERVICES

- **Convenience and cultural barriers are top two barriers to the uptake of shared mobility services**

31%	Convenience and flexibility concerns compared to private vehicle ownership
30%	Cultural barriers to sharing rides with strangers
19%	Permits, standards and regulations (e.g. labour laws and regulations)
12%	Governmental or industry-level coordination and support
8%	Physical, digital and other infrastructure supply

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AUTONOMOUS CARS

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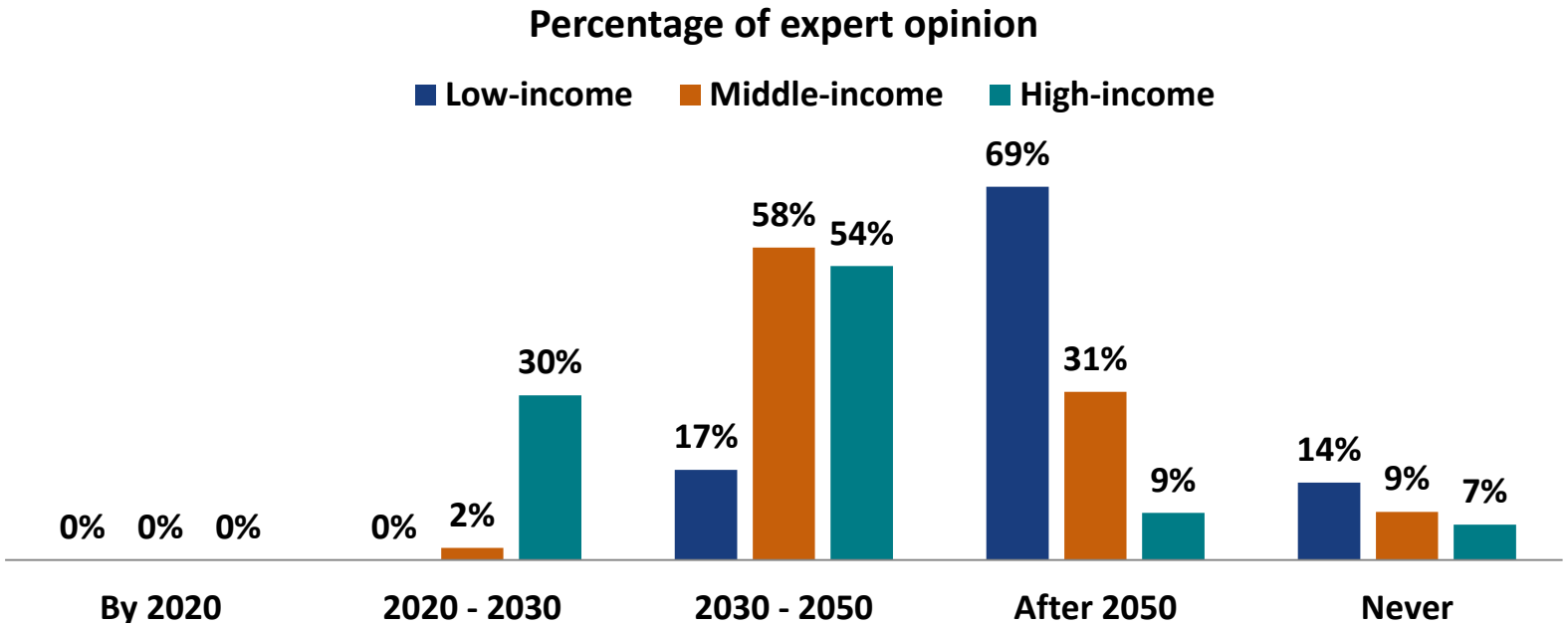
AUTONOMOUS CARS

- By when do you think the autonomous cars will take a significant share of the urban passenger car fleet? (e.g. >20%)



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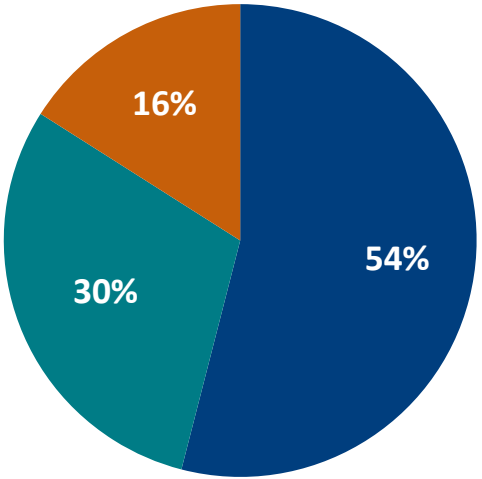
AUTONOMOUS CARS

❑Majority considers that autonomous cars will increase the overall car use



- **Why do you choose increasing?**
  - **It will reduce travel and parking costs and provides improved mobility to those who are too young to drive or older people.**
- **Why do you choose decreasing?**
  - **It will reduce the car use by being more efficient at completing the tasks drivers currently perform. More car-sharing is also expected.**
- **Why do you choose no impact?**
  - **Other modes will also adopt automation technology to compete with autonomous car, thus offsets the growth potential of autonomous private car use.**

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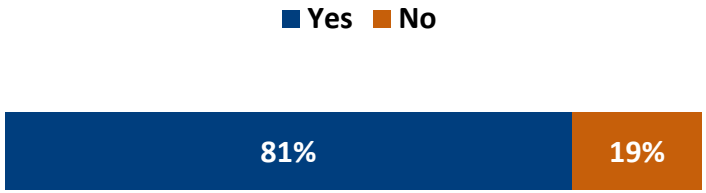
AUTONOMOUS CARS

❑ **Would you limit the increasing car use brought by autonomous car? (increase in trip distances and trip rates)**



❑ **How would you limit this effect?**

40%	Promote car sharing
31%	Increase vehicle usage cost
17%	Control urban sprawl
16%	Increase vehicle ownership cost

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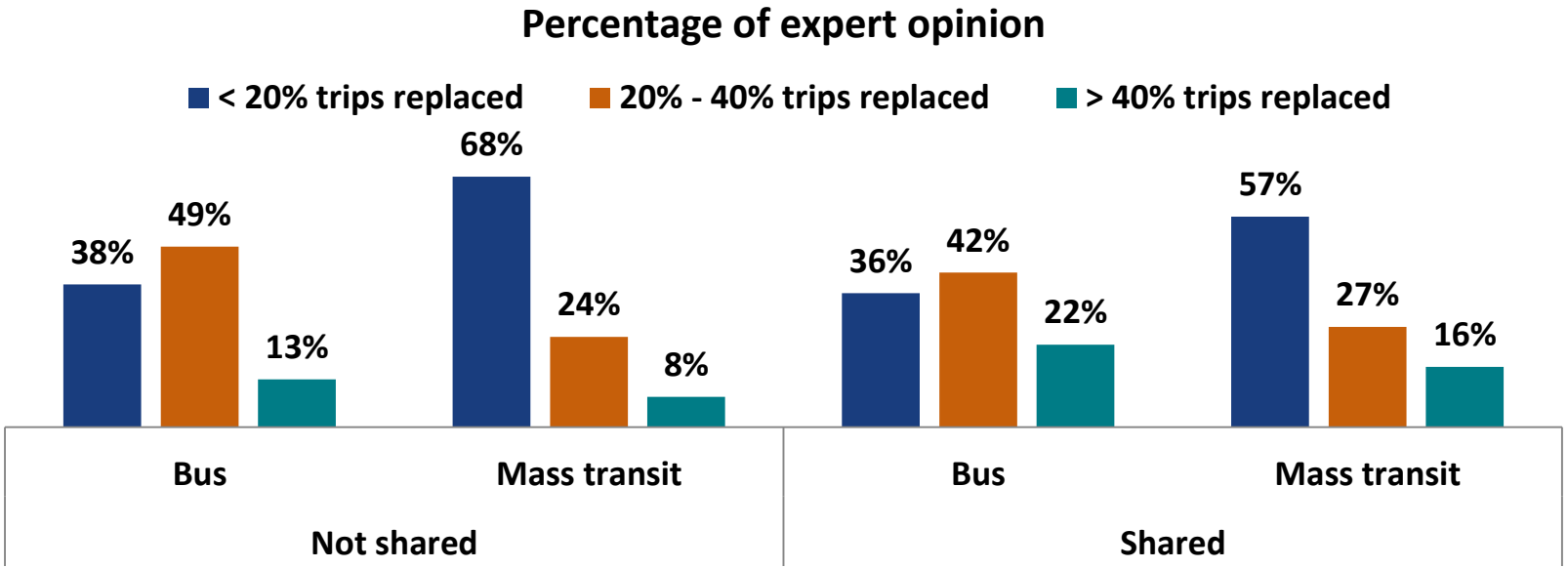
AUTONOMOUS CARS

- Autonomous cars have higher impacts on bus than on mass transit
- If autonomous cars are shared, the impacts on public transport trips will be higher



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AUTONOMOUS CARS

- **Safety and security concerns appears to be the biggest barrier for the uptake of autonomous cars**

26%	Safety and security issues
22%	Technological challenges
20%	Legislation and regulatory issues
16%	Consumer acceptance
16%	High vehicle purchase cost

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CONCLUSIONS

- **TAILOR the decarbonising pathways to the climate and development priorities of different country groups**
- **MAXIMISE the co-benefits from CO_2 mitigation strategies, especially for the low-income countries** *(safety, accessibility, equity)*
- **TRANSIT to Zero-Emission Vehicles** *(cheaper and better performance)* **to achieve the decarbonising goal**
- **INTEGRATE shared mobility into multimodal transport planning to reduce emissions from urban mobility and meet public goals**
- **TACKLE the challenges of combining realistic behavioural factors towards autonomous cars and policy options that cities might pursue**