

# Transport culture and curriculum: What's stopping walking and cycling from being mainstream?

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Two types of research:

## 1. Current generation

86 LinkedIn profiles of 'heads of transport' in Local Authorities used to identify:

- Who's in charge
- Background / training
- Perceived kudos of skills – major highways, walking, cycling design, etc.

## 2. Next generation

Equipped with right skills for sustainable design? Comparison Transport MSc syllabi\*

\*level of academic requirements for CEng was changed from a Bachelor's degree to a Master's degree in 1997

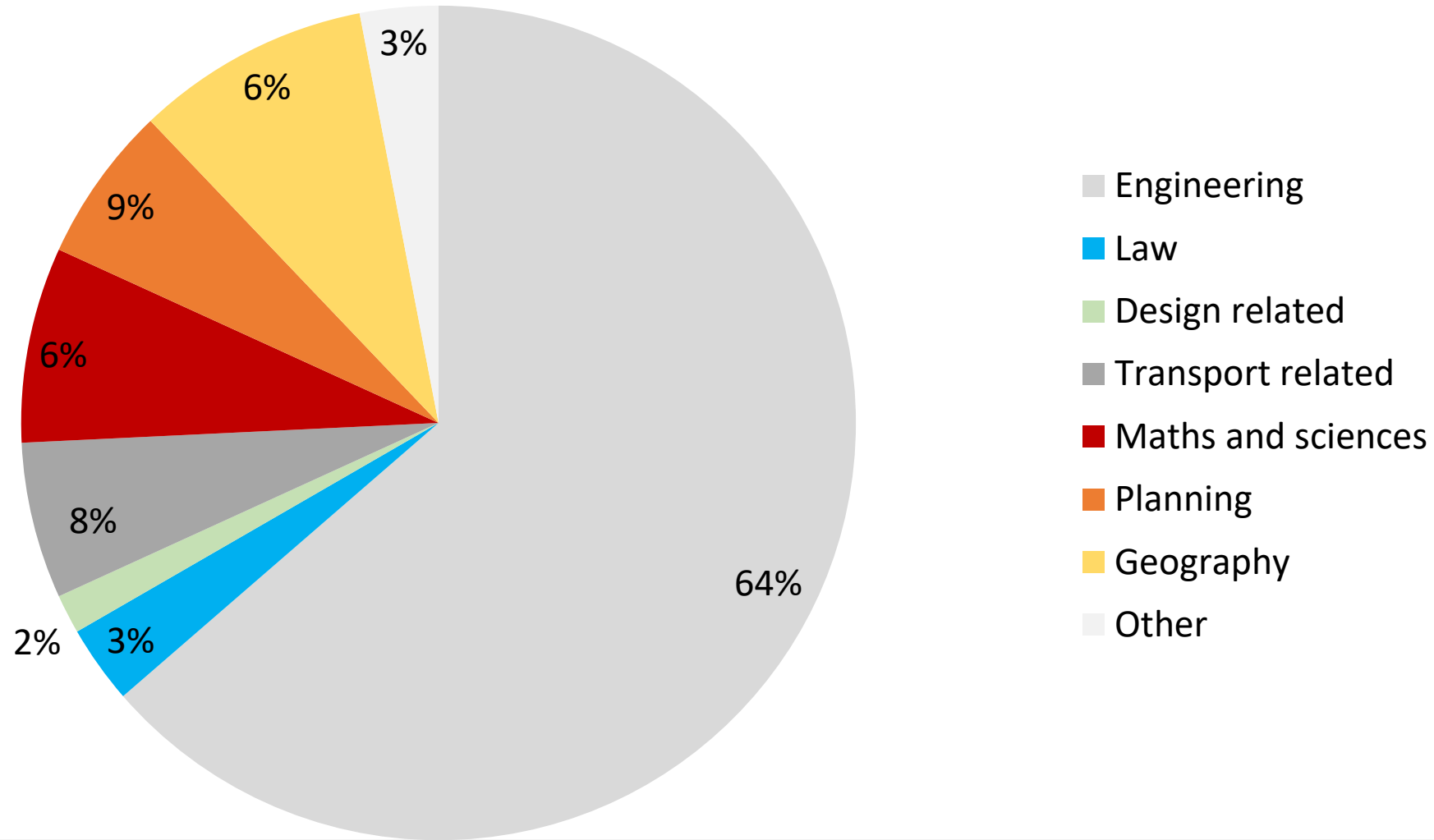
Engineers are more likely to apply to do Transport MSc

# Anonymised profile 'Head of Transport', London Council. Data derived from LinkedIn, 2016

## Head of Highway Infrastructure: London Borough Council

<b>Summary:</b>	<p>A chartered civil engineer with over twenty-five years' experience in London's highways and transport industry.</p> <p>Recently involved in change management , borough transport and highways service integration programme between London Boroughs and helping to shape the future direction of the transport and highways services.</p> <p>A dedicated and focused manager with a track record for delivery of a broad range of projects and programmes.</p>
<b>Current Role</b>	Head of Service responsible for: Highway Capital Projects, Maintenance, Bridges, Street Lighting, Traffic Design, Traffic Orders, Parking Projects
<b>Previous Roles:</b>	<ul style="list-style-type: none"><li>• Deputy Head of Highways</li><li>• Team Leader Traffic Infrastructure</li><li>• Group Manager–Engineering Projects</li><li>• Principal Engineer</li><li>• Project Engineer</li></ul>
<b>Self-selected skills:</b>	Project Planning, Public Sector, Rail, Public Sector, Bridge, Highway Design, Project Delivery, Infrastructure, Feasibility Studies, Management, Road Traffic, Policy, Stakeholder Engagement, Construction Management, Cost Management
<b>Education:</b>	Civil Engineering B.E (1982–1986)

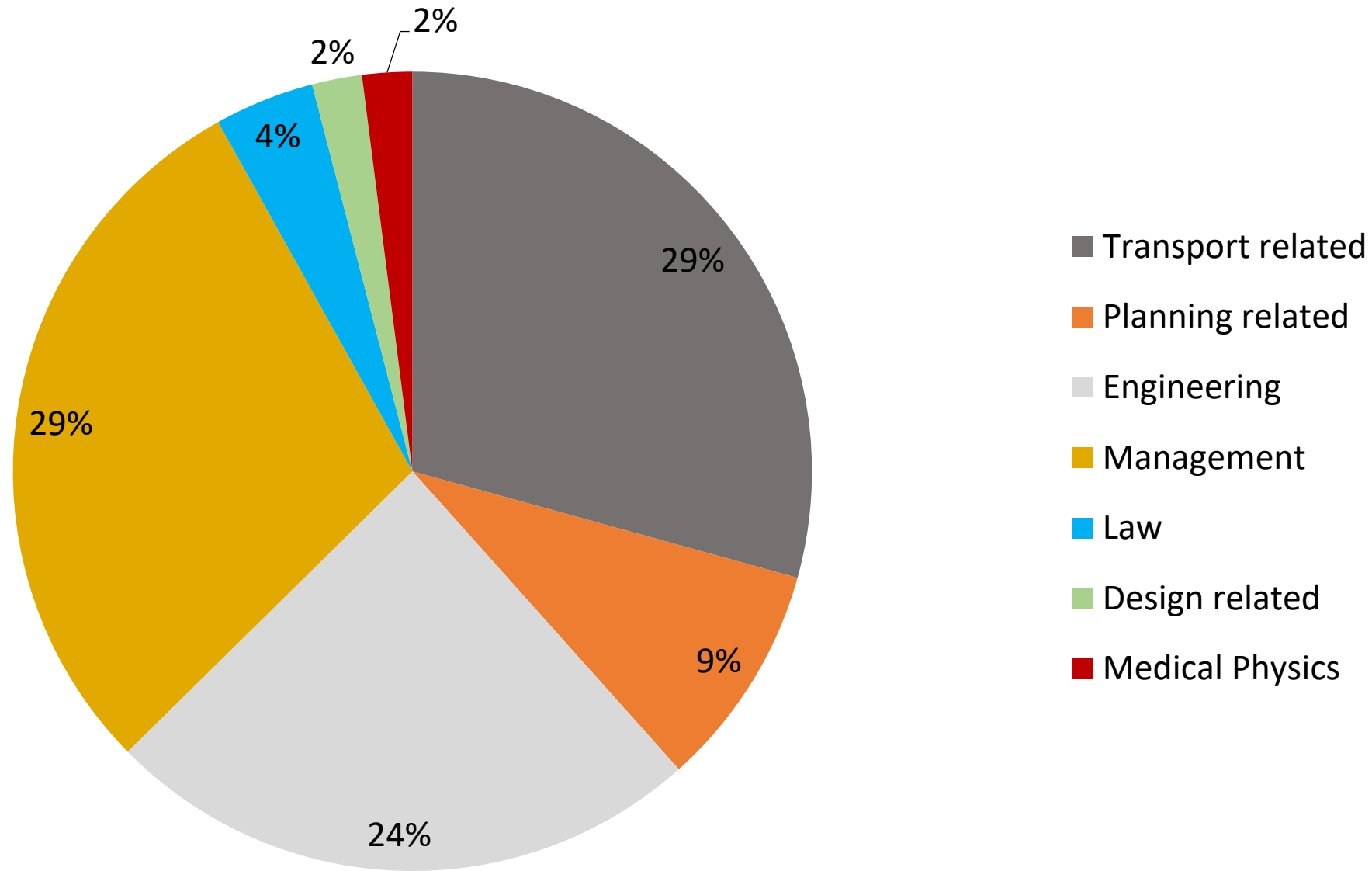
# Bachelor's degrees by subject held by Heads of Transport in local authorities. Derived from LinkedIn sample, 2016



69% had engineering qualification ( HNC, HND, Bachelors)

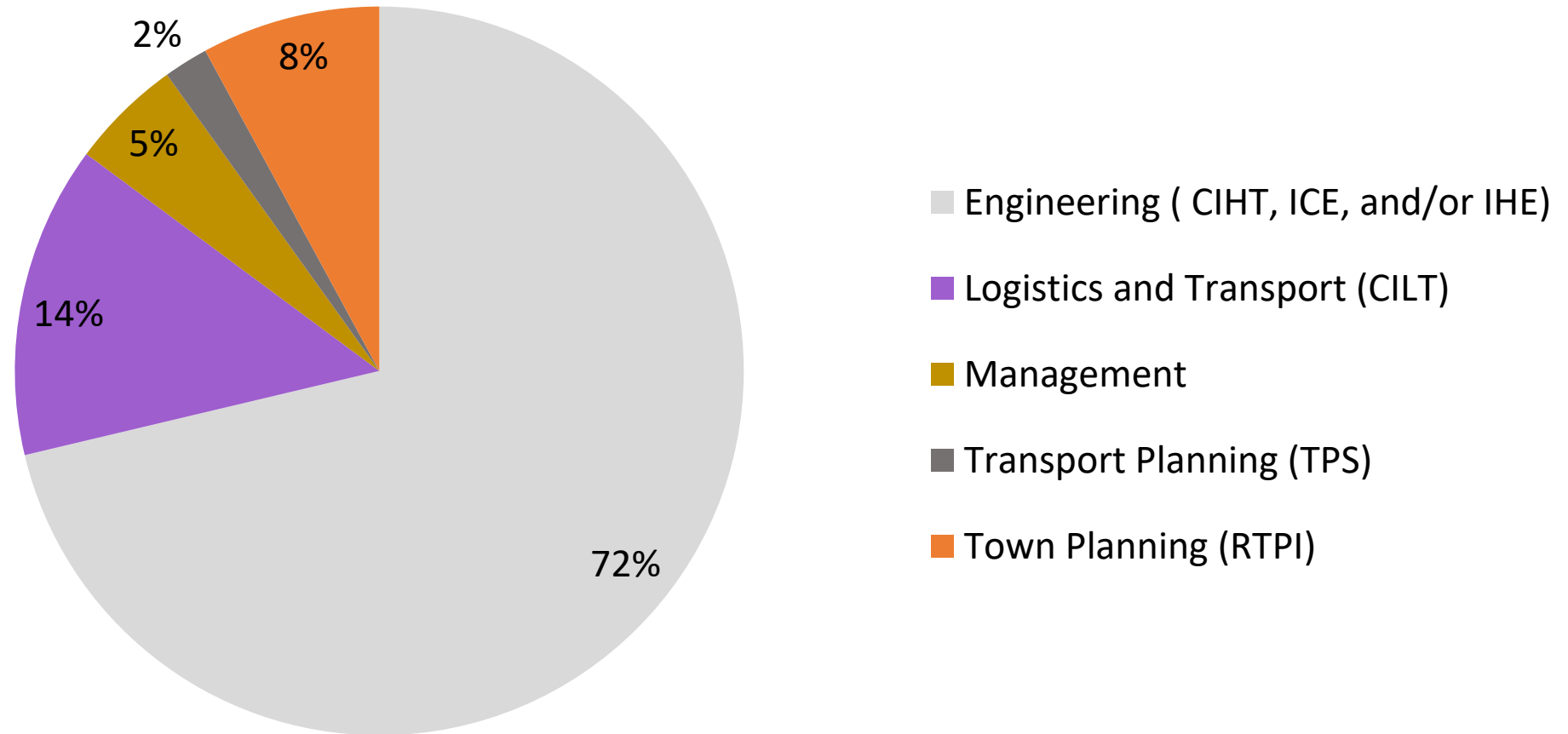
# Master's degrees held by Heads of Transport of local authorities

Derived from LinkedIn sample, 2016



# Professional institutions to which Heads of Transport cite affiliations

## Derived from LinkedIn sample, 2016

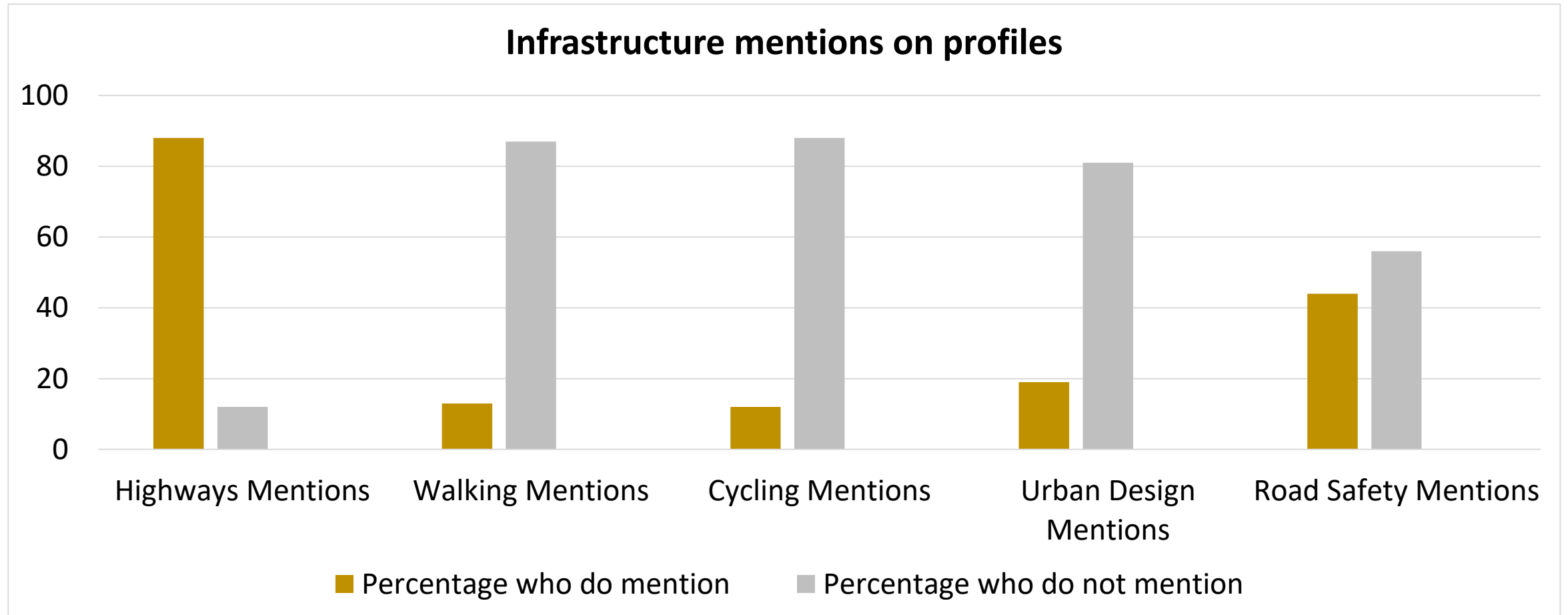


11% of MScs were transport related

Only 2% of the stated affiliations were with the Transport Planning Society (TPS)

Not so well-regarded? Newer Institute (TPS since 1997, CIHT founded 1930)

# Infrastructure mentions among Heads of Transport in Local Authorities. Derived from LinkedIn sample, 2016



Designing for car held in higher regard than walking/cycling/urban design

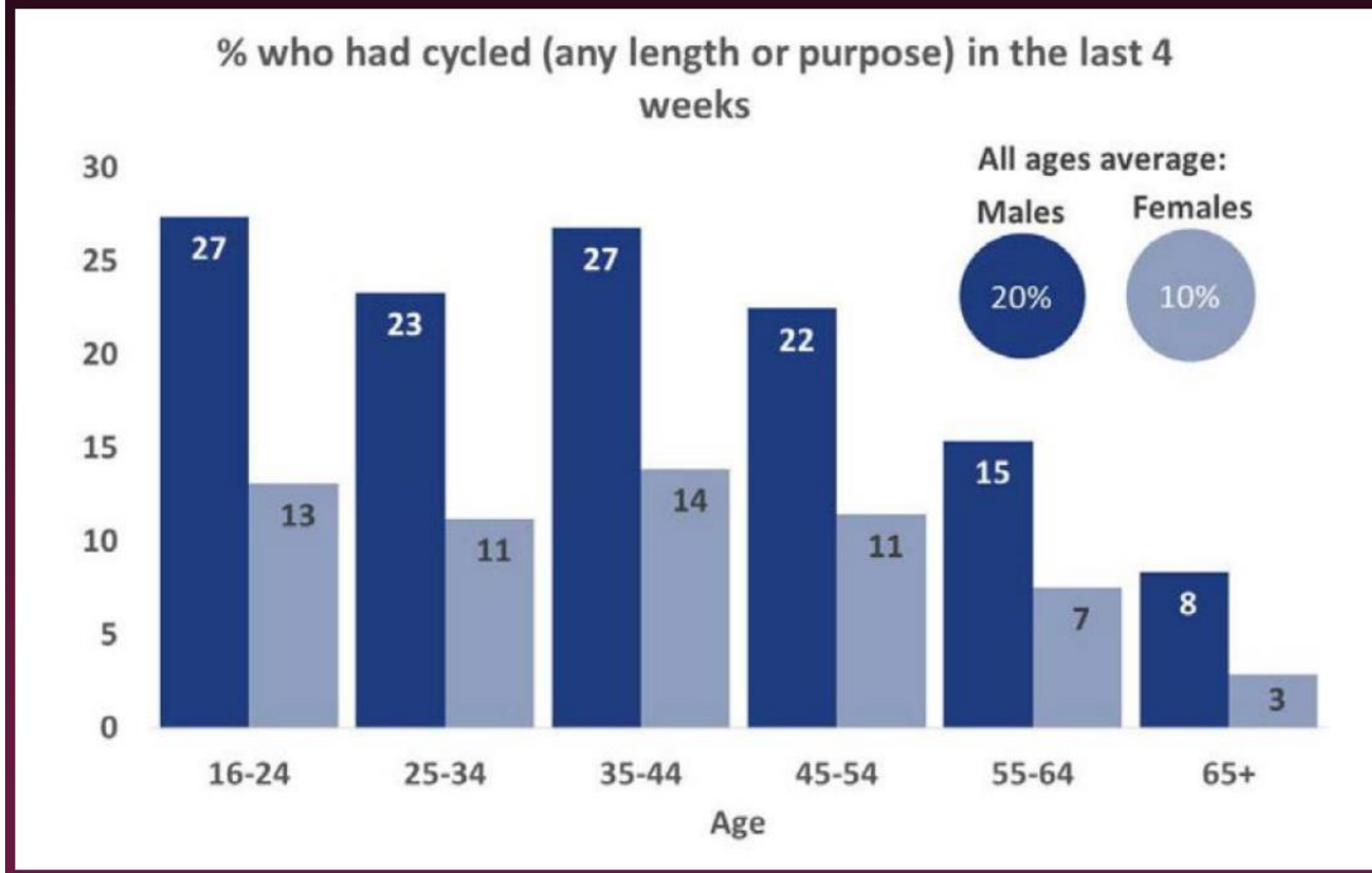
Road safety was more likely to be mentioned than walking/cycling/urban design combined

## Gender imbalance among Heads of Transport (and MSc course leaders)

- Heads of Transport = 91% male, 9% female
- More skewed than the gender imbalance among Chief Executives of Local Authorities: 23% women and 77% men (Wilkes, 2013)
- Equal representation of women in transport could help promote walking and cycling



## Cycling by gender and age



Statistical Release 29 April 2014

Local Area Walking and Cycling  
Statistics: England 2012/13

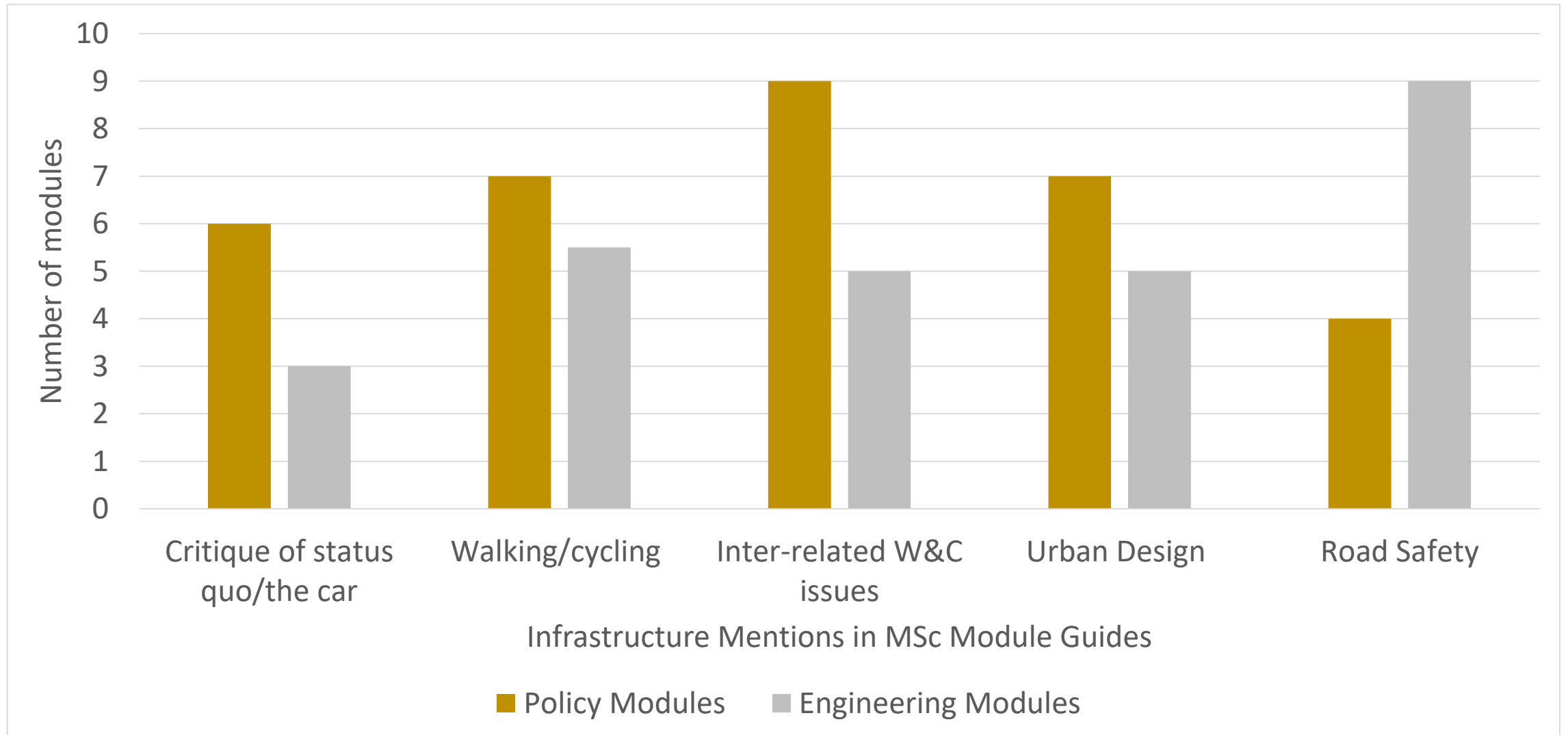
# Do today's Transport MScs teach how to design for people walking and cycling?

Nine MSc courses selected for analysis :

- Cardiff University
- Edinburgh Napier
- Imperial College /University College London
- University of Leeds
- Newcastle University
- Salford University
- Southampton University
- University of Westminster
- University of West of England

# Policy modules vs Engineering modules, 2013–16

Proportion of module guides which mention (explicitly or implicitly) different types of infrastructure



## Road Safety:

- Routine
- As in LinkedIn profiles – engineers mention road safety more than walking / cycling
- studied in isolation from pedestrian and cycle traffic
- Conceptual split problematic - walking and cycling excluded from mainstream highways engineering.

## Walking and cycling:

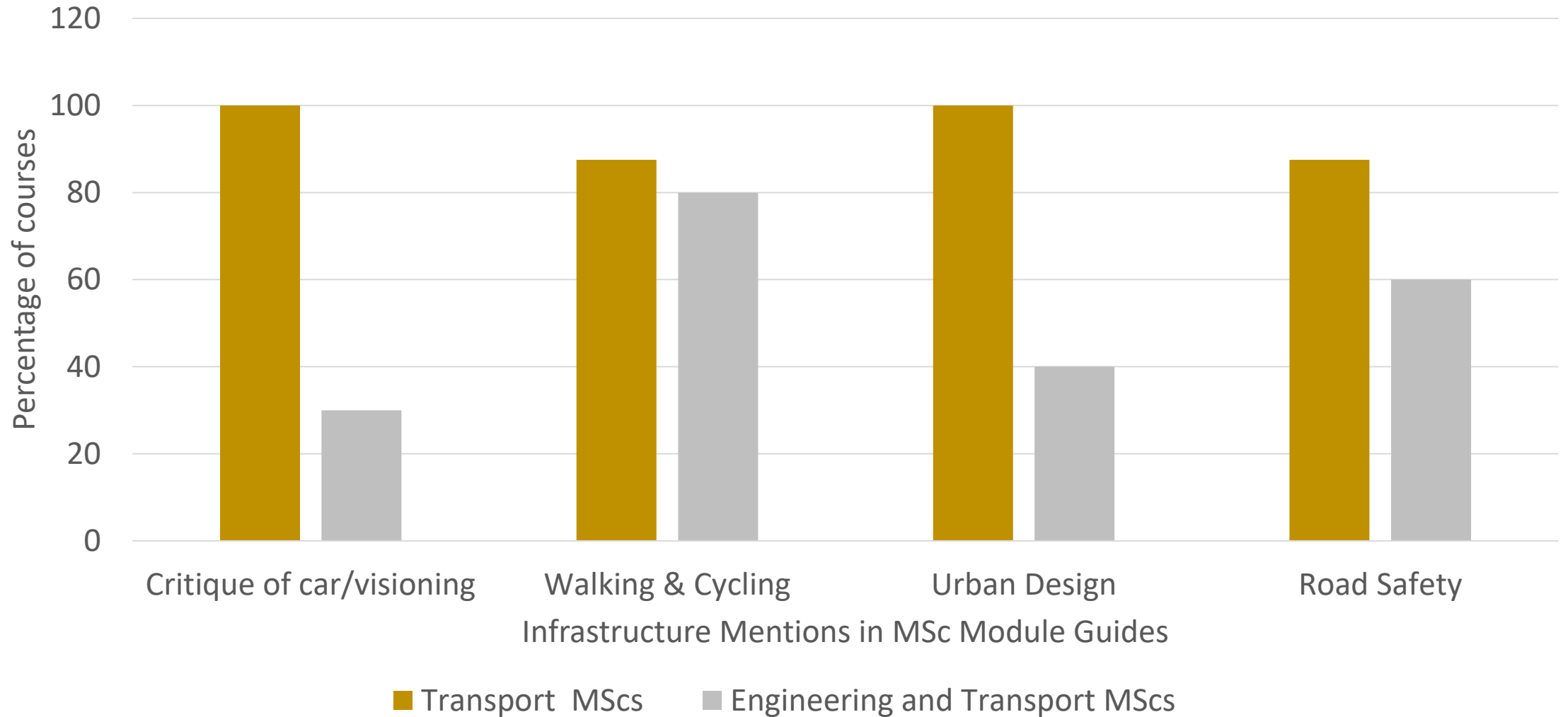
- often 'add-on' topic
- conventional highways standards covered rigorously

# Southampton syllabus 'Transportation Engineering: Analysis and Design Module'

12 elements, 1 directly covered walking and cycling:

- \* Traffic Parameters and traffic flow theory on highway links
- \* Traffic data collection, surveys and automatic detection systems
- \* Junction types and layouts
- \* Traffic analysis at road junctions: gap acceptance, capacities, queues and delays.
- \* Design and evaluation of priority junctions
- \* Design and evaluation of roundabouts
- \* Design and evaluation of traffic signals
- \* Urban Traffic Control: Principles and practice
- \* Design and evaluation of gradeseparated intersections
- \* *Designing facilities for vulnerable road users (pedestrians and cyclists) and buses*
- \* Case Study: Road junction design
- \* Designing for safety
- \* Geometric Design of Highway Links
- \* Human Factors in Transportation Engineering

# Infrastructure mentions in selected modules of MScs; a comparison of Transport MScs and Engineering & Transport MScs, 2013–16



Critiquing the car / visioning: much less common in Engineering MScs

## **Transport MSc courses**

- Need to integrate walking and cycling, esp. into engineering
- Engineering-based transport MScs need to encourage students to think of alternatives

## **Transport profession must diversify**

- Routes into transport are well sign-posted for engineers, but are less clear for those from other disciplines
- Complex challenges require more diverse skills /individuals than before.