
**Hellenic Research and Educational Institute
for the Road Safety and the Prevention
& Reduction of Traffic Accidents "Panos Mylonas"**



**Micromobility and e-scooters
The future and the Road Safety Challenges**

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Trends

- **Urbanization** and **digital evolution**
- Citizens' **life quality** in urban areas
- **Sustainability** and "smart" cities
- New technologies for "**smart**" **transportation** (electric vehicles, autonomous driving, e-scooters)
- **Multi modality** in urban transportation leading to efficient use of resources

Trends: the urban mobility landscape

- **54%** of the world's population resides in urban areas
- By 2050, cities are expected to receive another **2.5 billion**
- Cities struggle to meet the growing transportation needs
 - Congestion and parking
 - By the 21st century, drivers would spend about 3 times more time in congestion
 - Looking for a parking ("cruising") can take 20 minutes
 - Longer commutes
 - commuters are trading time for housing affordability
 - Inadequate public transportation
 - Public transit systems are either over or under used.

Source: https://transportgeography.org/?page_id=4621

E-scooters: The new trend

- Micro-mobility became a trend
 - First in China and the US
 - During the last 2 years in Europe
- Fast emergence of the shared electric scooters (e-scooter)
 - Personal Light Electric Vehicles (PLEV)
- Extremely attractive to the big cities' inhabitants
 - 70% of users are very positive
 - Agreeable and suitable solution to avoid traffic congestion and stress connected to it



Statistics

USA

- Since the appearance of 10 companies in California, e-scooters have popped up in **over 100 cities worldwide**

France (Paris)

- **40,000** scooters estimated by end of 2019 - **2,500** dedicated parking spaces for scooters.

Portugal (Lisbon)

- **6,000** scooters operating at the moment.
- around **13,000 trips a day**: locals (57%), tourists (43%).

Sweden

- Founded in 2018, VOI e-scooters are already available in **18 cities in 9 European countries**
- **Two million rides** in eight months
- **Expansion** into Germany, Belgium, Poland and Italy this summer

Germany (Muenster)

- Shared e-scooters were first allowed onto streets on July—**only 200** of them. After a trial period, **that number will double**

Spain (Madrid)

- Madrid alone has authorized **18 different operators of e-scooters**

UK (London)

- Although e-scooters are currently banned, **the city is reviewing their status**

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Worldwide experience

Death of expert who fell off e-scooter at East Coast Park a misadventure: Coroner



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Los Angeles Times

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Column: Bird scooters — so much fun, so damn dangerous



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Lifestyle adviser, with a large YouTube following, was killed in collision in south London

Special report: the rise of the the city e-scooter

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Woman warns others after electric scooter crash sends brother to ICU

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Woman warns others after electric scooter crash sends brother to ICU

E-scooters: Road crashes

USA

More than 1,540 road accidents where e-scooters were involved since 2017

249 patients presented to the emergency dept. with injuries associated with electric scooter use during a 1 year period with 10.8% of patients younger than 18 years and only 4,4 % of riders documented to be wearing a helmet. The most common injuries were fractures 31,7%, head injuries 40.2% and soft tissue injuries 27.7% Source: UCLA

UK

Emily Hartridge, a famed YouTuber, passed on July 12, 2019, in a crash between an electric scooter and a truck in London

FRANCE

A 25 year old male lost his life when his e-scooter crashed with a van.

SWEDEN

A 22 year old e-scooter user lost his life when hit by car.

SPAIN

A 90 year old woman lost her life while hit by an e-scooter used by two teenagers with speed of 30 km

SINGAPORE

A 22 year old e-scooter enthusiast perished when fell off his vehicle and hit his head.

E-scooters SWOT Analysis: Strengths

- Their **convenience** and compatibility to 'smart' cities model
- Easy to **ride**
- Easy to **park**
- Emissions free
- Multimodal transportation
 - **last mile ride**



E-scooters SWOT Analysis: Weaknesses

- **Not addressing** all age groups
- **Not easy for family** rides (adults and babies)
- **Speed** range exceeds pedestrians by 4-5 times
- Rapid expansion **not allowing users time to adapt** and comply to safety on the road
- **Vulnerable** road users
- Short life cycle leads to its battery disposal and **environmental burden.**

E-scooters SWOT Analysis: Opportunities

- **"Smart cities"** that will involve all road users
- **Sustainable** goals
- Life **quality**
- **Friendly** cities



E-scooters SWOT Analysis: Threats

- Lack of **regulatory frame**
- **Transition period** for cities' infrastructure to adopt a new transportation model
- Increased risk of **non trained e-scooters' users**
- Another transportation means in a **congested traffic system**
- **Lack of use of safety equipment** for the users



E-scooters: Questions & Concerns

- Most big cities are not friendly to their inhabitants
 - especially to the vulnerable road users (kids, pedestrians, handicap, cyclists, older people)
- Is current infrastructure appropriate for this new type of transportation?
 - Can cities today follow the pace of this new phenomenon?
- Traffic congestion is enormous
 - Is there space for more transportation means?
- Questions arise about how safe e-scooters are
 - For the users themselves and the other users of the road
- Lack of regulatory framework and rules for basic yet important issues
 - Where should e-scooters go? On the road? On the pavement? At the cycling lane?
 - What is the maximum speed allowed?
 - How old should the user be?
 - Should the user have a driving license?
 - Should the use of helmet be mandatory? And, is this enough?

RSI's role in Greece and next steps

- A **desktop research** has been performed for the issue globally and nationwide
- Participation of **RSI experts team in Governmental Bodies** (Ministry of Transport), to form legislative framework for Greece
- Coordination with involved **stakeholders** (Technical Chamber Engineers' Association, Traffic Police, private and public entities)
- Preparation of **educational and training module**
- **Video campaign** to promote safety rules on the ride



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