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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Contents

- Trends
- Worldwide experience
- Statistics
- SWOT Analysis
- Questions and Concerns
- RSI's Role in Greece and next steps

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

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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: <u>https://transportgeography.org/?page_id=4621</u>



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)

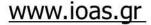
 Shared e-scooters were first allowed onto streets on July–only 200 of them. After a trial period, that number will double

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



Worldwide experience



Woman warns others after electric scooter crash sends brother to ICU

POSTED 10:56 PM, JUNE 29, 2018, BY KRISTEN SHANAHAN, UPDATED AT 17:40PM, JUNE 29, 2018



CALIFORNIA

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



ADV	ERT	SEM	ENT

LATEST CALIFORNIA >

CALIFORNIA

The biggest wildfires currently burning in California Sep. 12, 2019

CALIFORNIA

A ban on marijuana use on party buses wins approval from California lawmakers Sep. 12, 2019

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
 Jast mile ride





- >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

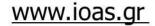
Lack of regulatory frame

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



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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









Thank You!

