Effectiveness of city-wide 30 km/h speed limits

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Artificial Intelligence for Road Safety and Mobility Workshop

8th UN Global Road Safety Week

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Objectives

Two published **literature reviews**:

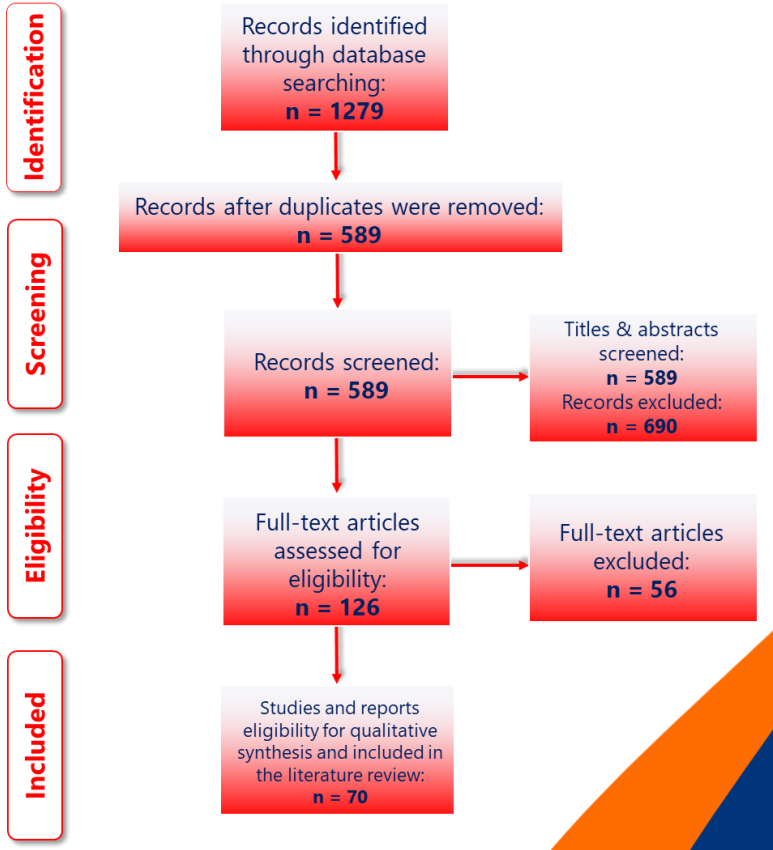
- Assessment of changes **before and after** the implementation of city-wide 30 km/h speed limits in Europe (meta-analyses of 70 studies from 17 cities)
  Yannis, G., & Michelaraki, E. (2024). Review of City-Wide 30 km/h Speed Limit Benefits in Europe Sustainability, 16(11), 4382
- Assessment of the effectiveness of 30 km/h speed limit through **simulation studies** (meta-analyses of 60 studies)
  Yannis, G., & Michelaraki, E. (2024). Effectiveness of 30 km/h speed limit - A literature review. Journal of Safety Research, Vol. 92, November 2024

Safety Emissions Energy Traffic Liveability Health

Methodology

Key search phrase	Search terms	Screened papers	Included papers
30 km/h speed limit	"30 km/h" OR "20 mph" OR "30 km/h speed limit" OR "speed limit" OR "speed limit reduction" OR "maximum speed" OR "reduced speed" AND “traffic calming” AND "mobility" AND “city-wide” AND “cities” AND “implementation modalities” AND "benefits" AND "urban areas"	589	70

- Meta-analyses of 70 studies from 17 cities were reviewed
- Systematic search of relevant scientific and grey literature, according to the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA)
- The inclusion criteria for selecting relevant studies were:
  - ✓ Search term included in title, abstract or key words
  - ✓ Studies published from 1992 and onwards
  - ✓ Studies including information with regards to 30 km/h speed limit in the title or abstract
  - ✓ Source: peer-reviewed journals before peer-reviewed conference papers before scientific papers/articles



The PRISMA flowchart

Cities with 30 km/h Speed Limit

A/A	City	Implementation Started
40	Amsterdam	December 2023
39	Wales	September 2023
38	Bologna	July 2023
37	Florence	November 2022
36	Copenhagen	June 2022
35	Lyon	March 2022
34	Den Haag	December 2021
33	Zurich	December 2021
32	Toulouse	November 2021
31	Vienna	September 2021
30	Paris	August 2021
29	Montpellier	August 2021
28	Münster	July 2021
27	Valencia	May 2021
26	Leuven	April 2021
25	Brussels	January 2021
24	Nantes	August 2020
23	Glasgow	January 2020
22	Antwerp	January 2020
21	Barcelona	December 2019

A/A	City	Implementation Started
20	Lille	August 2019
19	Helsinki	May 2019
18	Madrid	September 2018
17	Bilbao	June 2018
16	Strasbourg	February 2017
15	Dublin	January 2017
14	Berlin	January 2017
13	Edinburgh	July 2016
12	London	June 2016
11	Grenoble	January 2016
10	Ljubljana	September 2015
9	Luxembourg	August 2015
8	Ghent	April 2015
7	Bristol	2015
6	Munich	2011
5	Brighton	2010
4	Hove	2010
3	Warrington	July 2005
2	Stockholm	2004
1	Graz	September 1992

4 Countries adopted Countrywide 30km/h speed limits (in all urban areas)

30km/h Speed Limit in Cities

Yannis, G., & Michelaraki, E. (2024). Review of City-Wide 30 km/h Speed Limit Benefits in Europe Sustainability, 16(11), 4382

City-wide 30km/h speed limits led to average reduction in:
(meta-analyses of 70 studies from 17 cities)

- Fatalities by 37%
- Serious injuries by 38%
- Road crashes by 23%
- Emissions by 18%
- Noise by 2.5 db
- Fuel consumption by 7%
- Traffic congestion by 2%

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Effectiveness of 30 km/h Speed Limit

Yannis, G., & Michelaraki, E. (2024). Effectiveness of 30 km/h speed limit – A literature review. Journal of Safety Research, Vol. 92, November 2024

Road safety

- decrease average travel speed
- decrease conflicts with VRUs

Environment

- reduce air pollution
- reduce car dependency

Traffic flow

- reduce traffic volumes
- reduce congestion

Energy

- reduce fuel consumption
- promote smoother eco-driving

Sustainability

- increase Public Transport use
- increase pedestrian, cyclists and e-scooter active mobility

Setting a speed limit of 30 km/h where people and traffic mix, make streets
safer, healthier, greener and more liveable

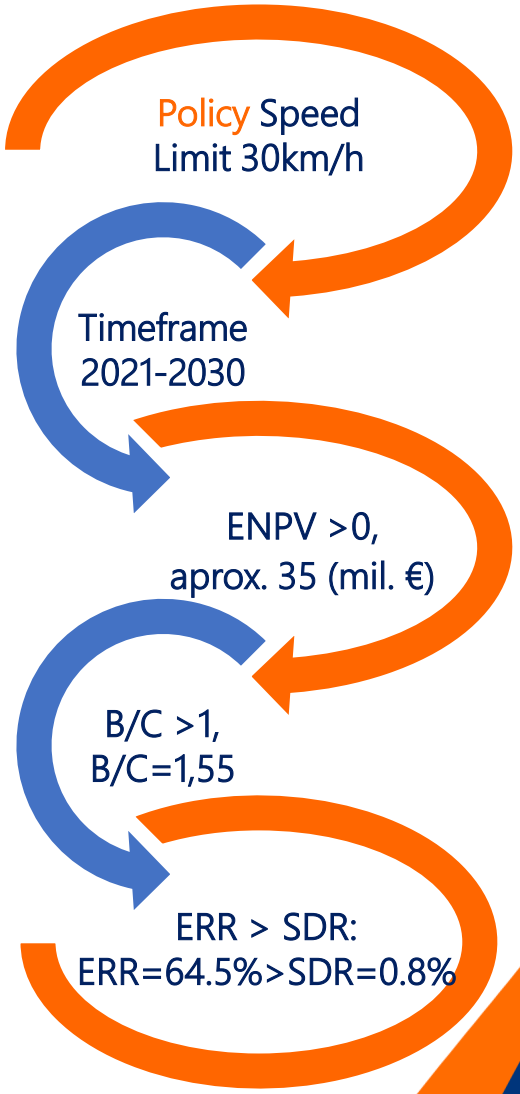
Cost Benefit Analysis Results – Athens

Roussou, S., Petraki, V., Deliali, K., Kontaxi, A. & Yannis, G. (2024). Cost benefit analysis of reducing speed limits in Athens to 30 Km/h. Case Studies on Transport Policy, 101289, October 2024

A Cost Benefit Analysis for the City of Athens was implemented till the year 2030, by including all the Costs (Implementation and Operational) and all the Benefits (Road Crashes, Fuel Consumption, Emissions) which concludes to the following results:

- The most important economic benefit arises due to the improvement of road safety through the reduction of fatalities on road crashes:
  - ✓ Expected Net Present Value (ENPV) > €35 million
  - ✓ Benefit-Cost Ratio (B/C) = 1,55
  - ✓ Economic Rate of Return (ERR) = 64.5%
  - ✓ Social Discount Rate (SDR) = 0.8%

- All the examined policies present a positive ENPV and an ERR higher than the SDR, indicating their feasibility over time



Benefits from Countrywide New Speed Limits

New National Law expected in Greece

It is estimated that city-wide 30 km/h speed limits on the road network of all cities in Greece (with the exception of major axes) will save lives annually:

- 104 fatalities (out of 635 in all of Greece)
- 123 seriously injured (out of 636 in all of Greece)
- 783 slightly injured (out of 12,533 in all of Greece)

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More livable cities

Speed limits reduction gaining rapid acceptance across Europe and **more and more European cities** adopting lower speed limits

Significant socio-economic impact

The reduction of speed limits in cities (30km/h) leads to a **significant reduction** in:

- road crashes and casualties
- fuel/energy consumption and air pollution without a significant decrease in travel times

Increase of acceptance

- **Public acceptance** of speed limits reduction tends to improve over time, especially by pedestrians, cyclists and Public Transport passengers
- **Inertia and reactions** from car drivers need to be addressed

Scientific and Social Impact

City-wide 30km/h speed limits:
the road safety catalyser

The since-long waited **single road safety measure**
with such a significant benefit at such a low cost

Such a **high societal impact**
for such a small change in our habits

More than a simple new traffic rule:
a catalyser for a new road safety culture

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Future Challenges

Accompanying Measures:

- Public consultation and awareness campaigns
- Public transport and active mobility promotion
- Traffic calming measures
- Intelligent transportation systems
- Monitoring and evaluation
- Enforcement and police cooperation

30 Marathons in 30 months

A campaign with high global impact
to actively promote city-wide 30 km/h speed limit

- **26 cities** with Marathon finish
- **10 International Organisations** Allied

- **500.000+ pageviews** per year
- **100.000+ global audience** at social media
- **200 republished posts** from scientific organisations and institutions (with 80.000+ post impressions)
- **40 social media** posts

- **25 interviews** in the electronic media
- **32 newspaper/magazine** articles
- **3 papers** in scientific journals
- **20 presentations** in conferences/webinars

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