

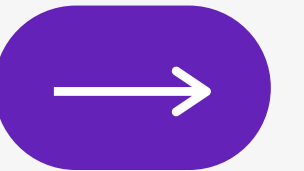
Second Micro-Case

Scooter

Transportation

Management Concept

A-Team



E-scooters

Main parts

Two wheels, a deck, and handlebars for steering
addition of a battery, electronics, larger (often air-filled) tires,
and an electric motor

Measurements

4.5 kg, 250-watt motor, a 250 watt-hour lithium-ion battery,
top speed of 24 km/h, a range of 16 kms, around \$500

Last leg of a trip

- Cheaper than cabs
- More comfortable than buses
- Less effort than a bike

The Armenian Market

Yerevan Ride

e-scooters, bikes

Speed: 18-24 km/h

Tariffs: 50 AMD Start + 35 AMD per minute

Busy Fly

e-scooters

Speed: Eco (15 km/h), Drive(20 km/h), Sport (25 km/h)

Tariffs: 25-40 AMD/minute (depending on the speed)

Jet

e-scooters

Speed - 24 km/h

Tariffs - 50 AMD Start+ 30AMD per minute

SWOT Analysis

Strengths

- Eco-friendly
 - Easy in usage
 - Cheap in short distances
 - Easy to store
-

Opportunities

- Develops micro-mobility (less traffic jams)
- The increasing number of users

Weaknesses

- Hard to control drivers
 - Not enough regulations
-

Threats

- The increasing number of accidents

Lifespan

E scooters can definitely be the future of micro mobility

Eco friendly

Powered by electricity, easily accessible and with zero direct emissions.

Easy Usage

The effortless usage of e-scooters attracts a wide range of people from 16-40 years old; it is fast and helps to avoid traffic, which makes it an excellent choice.

Regulations

New projects will secure a safe transportation system for scooters. (E.g. Proposed project of new lines for scooters in North Avenue)

Key issues with E-scooters

Risky

**Absence of
infrastructure**

**Hard to
control**

**Lack of
restrictions**

**Increasing
number of
accidents**

Key issue is the lack of regulations for E-scooters

Strategies

Restrict

Charge

Build

Tactics

- Implement speed limitation
- Ensure scooter visibility at night

- Ban usage of headphones
- Ban ride of one scooter with more than 1 person on it

- Create special parking spots for scooters
- Improve streets for scooter usage

The overall aim is to build a system that works harmoniously with all the street users.

Strategies

Restrict

Charg

Build

e

Restrict

- **Have limitation on scooters based on speed capacity(20km/h)**
- **Have neon light sign for night visibility on each scooter as mandatory, as well as protecting gear for riders**
 - **Insurance for e-scooters**
 - **partial ban of e-scooters in parks**

Charge

- **Ban usage of headphones**
- **Ban ride of one scooter with more than 1 person on it**
- **Charges from account for violations**

Have cameras on each scooter from which driver of scooter should be visible in case if camera is closed during the ride the scooter will be blocked

Build

- **Create special parking spots for scooters**
 - **Improve streets for scooter usage**
- **Fines for the companies by the government**

Parking through scan from special parking spot(if not parked there the money initially charged won't be refunded)

Companies give info to government about the streets where scooter usage is most, so that they know from where to start

Proposed instructions for parking



User finishes the ride

- Smithson
AdverParking spot
- Somewhere on the
street
tising

In the parking spot

The scanner attached to the parking spot will scan the scooter's QR code, and the rider will not be charged.

Random area

The riders will finish the ride and be charged additionally for not parking in the designed area.

Financials

Build			
	(in AMD)		total
Fines for parking in wrong places	2,000	180,000	360,000,000

Costs	(in AMD)					
	per rack	number of streets in Yerevan	racks per street	number of parks in Yerevan	racks per park	total
Building parking racks	20,000	160	3	40	2	11,200,000

	per 5km	total
Improving infrastructure	2,000,000	4,000,000

Financials

Costs	(in AMD)				
	per rack	Number of streets in Yerevan	Pots per street	Number of parks in Yerevan	Pots per park
Building parking racks	20,000	160	3	40	2

Key issue is the lack of regulations for E-

scooters

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Thanks for your attention!

Appendix

1. [Headphone accidents](#)
2. [Accident and injury types](#)
3. [E-scooter injury frequency](#)
4. [Accidents and parking issue in Sweden](#)
5. [Cameras to protect riders and pedestrians](#)
6. [E-scooter partial ban and speed limit in Finland](#)
7. [Minimum age restrictions](#)
8. [Paris introducing fines for not parking properly](#)
9. [Speed limits and mandatory helmets](#)
10. Other financial data (pages 25-26)

Accident and Injury Types of E-scooters

Lyft/Bird Scooter Injury Types

Wear a helmet! Scooter injuries occurred most commonly on the head.



Types of Scooter Accidents

Most injuries were from a fall. Collisions with stationary objects and moving vehicles were less common.



CURRENT LAWS

Only 'motorised scooters' are currently regulated & the following restrictions apply to their use:



No night riding:



Helmets required:



Power output:

200W
max

Max travel speed:

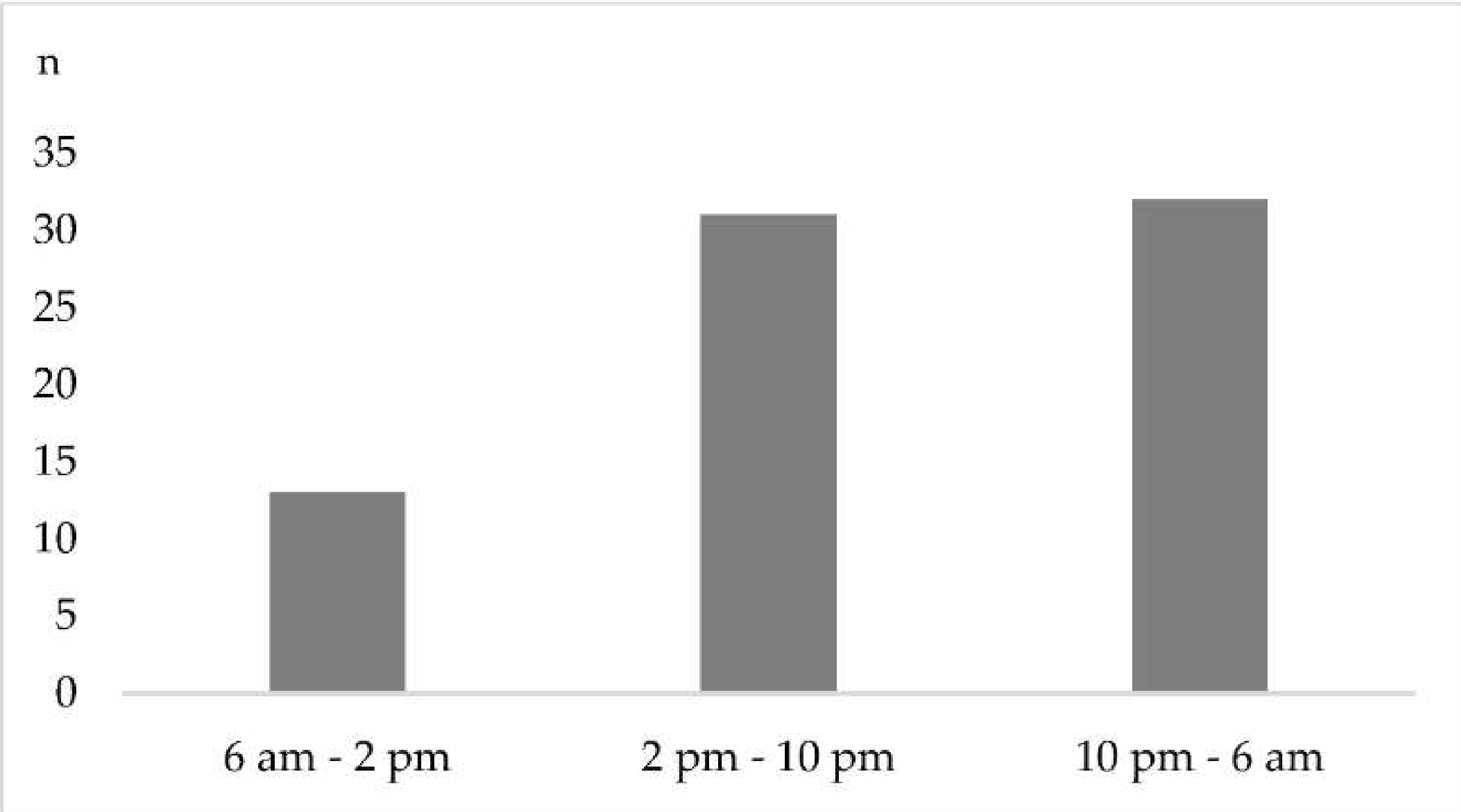
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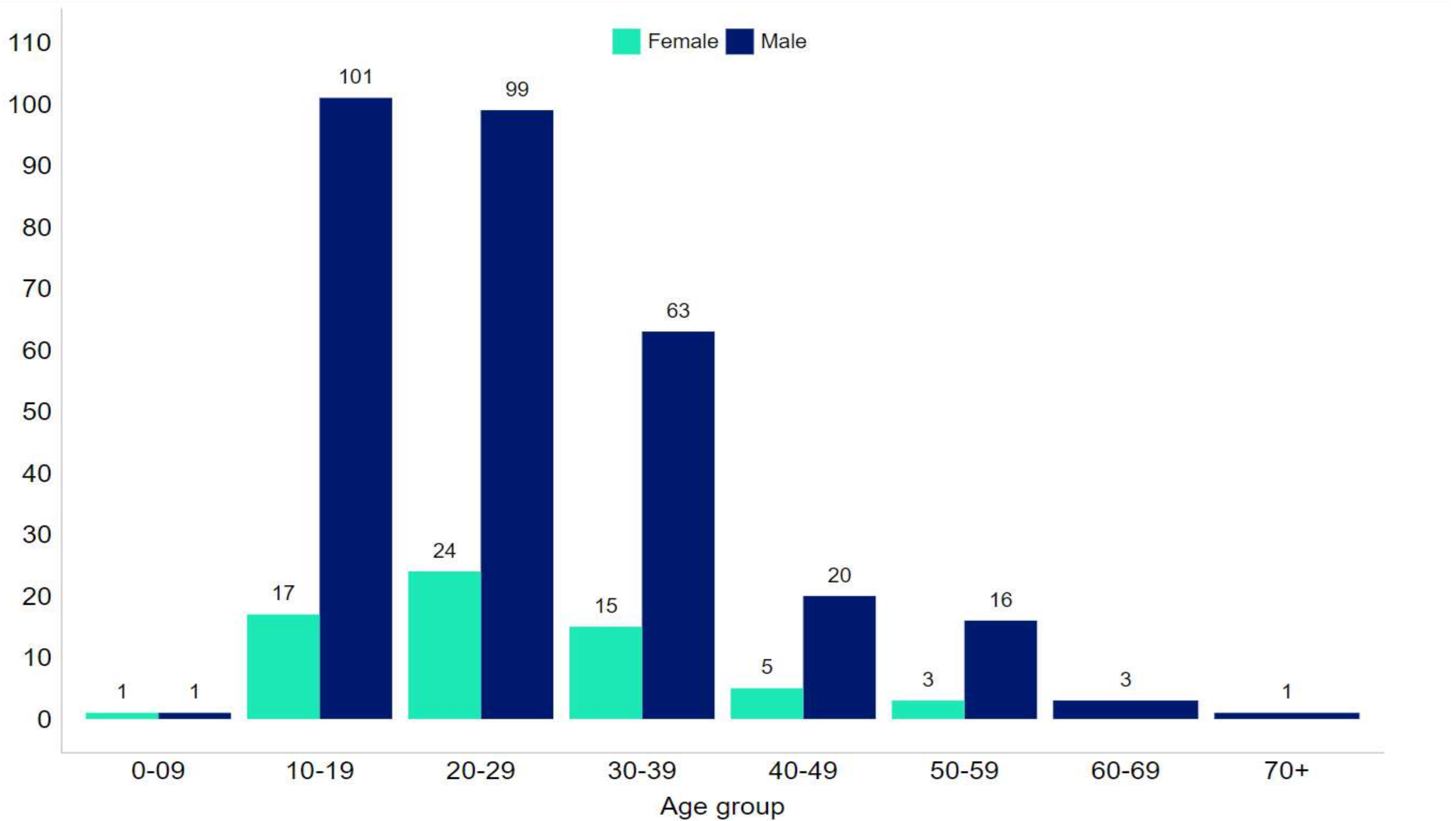
No travel on roads:

>50
km/h

Other types of E-Rideables currently require licenses to be used legally on WA roads and paths, and motorised scooters which don't comply with the above conditions are illegal.

Figure 3. Time dependent presentation of patients after e-scooter accidents. Most patient contacts were registered during on-call time.





Financials

Restrict	(in AMD)	number of scooters	total
Insurance	15,000	1,000	15,000,000

Financials

Charge	
For companies	
Number of scooters	1,000
Rides per day	5,000
Rides per year	1,800,000

Violations		
Usage of headphones	0.3	540,000
More than 1 rider	0.2	360,000

	(in AMD)	Total
Revenue from headphone violations	500	270,000,000
Revenue from passenger violations	500	180,000,000
Cost of cameras on scooters	3,000	3,000,000