E-scooters in Europe: legal status, usage and safety

Results of a survey in FERSI countries

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Table of contents

1. Introduction

In their General Assembly in October 2019, the FERSI members noted that micromobility, and particularly the electric microscooters or e-scooters, was a fast-expanding phenomenon in many cities in many countries.

It was also noted that the information about their legal status and their safety was limited and scattered. Therefore, it was decided to develop a short questionnaire to make an inventory of the information available in the FERSI member countries. This FERSI paper describes the results of this survey.

In the next Section we briefly describe the method. The subsequent three sections present the main outcomes for each of the three parts of the survey, notably the legal status of e-scooters (Section 3), their numbers and usage (Section 4) and safety-related information (Section 5). Section 6 presents some concluding remarks. For a more extensive overview of micromobility and related safety issues we refer to a recent report of OECD/ITF[1].

[1] International Transport Forum (2020): Safe Micromobility. Paris. OECD/ITF

2. Method

The online e-scooter survey was prepared with LimeSurvey and consisted of 29 questions, divided over three main topics:

- Legal status (12 questions)
- Numbers and usage (7 questions)
- Safety (10 questions)

The invitation for participation was sent to the FERSI representative of the member organisation with the request to complete the questionnaire themselves or forward it to colleagues or to other experts in their national network. It was made explicit that the different parts of the survey could be answered by different experts.

Almost all questions were multiple choice. For each question there was an option for respondents to explain or elaborate their answers in a free text field. Since we expected the amount of information to be limited in most countries, all questions had an answer option 'Do not know / unclear' or 'No information available'. The instructions and the full questionnaire, including the responses and explanations provided by the respondents, as well as provided links to supporting documentation can be found in the Appendix.

Invitations were sent by email to all 21 FERSI members on 25 February 2020 with an initial deadline of 15 March 2020, and a COVID-19-related extended deadline of 15 April 2020.

Eighteen of the 21 members submitted the completed questionnaire. Table 2.1 lists these countries and their abbreviation used in this paper. The responses, as provided by the respondents, were analysed by simply listing the countries (in alphabetical order of the abbreviations) per response category per question. For the main text, clarifications and explanations provided by the respondents were sometimes summarised. A draft version of the document was sent to all respondents on 11 July 2020 with the request to check for factual errors. This resulted in a few minor changes and additions.

Table 2.1: Responding FERSI countries (in alphabetical order) and their abbreviations.

1	Austria	AT	10	Italy	IT
2	Belgium	BE	11	Netherlands	NL
3	Czech Republic	CZ	12	Norway	NO
4	Denmark	DK	13	Poland	PL
5	Germany	DE	14	Portugal	PT
6	Greece	EL	15	Serbia	RS
7	Finland	FI	16	Spain	ES
8	France	FR	17	Sweden	SE
9	Hungary	HU	18	Switzerland	CH

3. Legal status of e-scooters

The first series of questions focused on the legal status of e-scooters. This included questions about restrictions (e.g., maximum speed limit), obligations (e.g., helmet usage) and the level of enforcement of these rules. Per question we summarize the responses.

3.1 Are e-scooters currently legally allowed in public spaces in your country?

Most countries (15/18) legally allow for the use of e-scooters in public spaces. Greece, Netherlands, and Serbia do not (yet) allow them. That does not mean that they do not exist in these countries. According to the Greek respondent, e-scooters are regularly seen in Greece and have become popular for citizens to use. Given that certain problems arose, it is now considered necessary to establish a legal framework for their operation. In Serbia e-scooters are seen every now and then; in the Netherlands hardly ever.

For the fifteen countries where the e-scooter was legally allowed some further questions were asked about their status.

3.2 To what road users/vehicle category do e-scooters legally belong?

To what road users/vehicle category do e-scooters legally belong?															
Pedestrian	FI														
Bicycles	CZ	DK	FI	IT	NO	PL	SE								
(Light) Moped	CH [2]	PT	SE												
Dedicated category	AT	BE	DE	ES	FR										
Do not know / unclear	HU														

Most respondents indicated that e-scooters are categorized as a bicycle in their country. In the Czech Republic e-scooters are of the same category as e-bikes. In three countries the legal category of the e-scooter depends on either the maximum speed or maximum power of the e-scooter. In Finland the e-scooter is defined as a pedestrian if it does not travel faster than 15 km/h; otherwise it is categorised as a bicycle. In Sweden the category depends on the power of the e-scooter: it is considered a bicycle with a 250 watts motor and can be considered a moped class I or II if it exceeds this limit and meets the technical standards.

In Austria, Belgium, Germany, France and Spain e-scooters are designated as a separate dedicated category. In Austria, they are defined as “small and mini scooters with electric motor” and are part of

[2] All answers for Switzerland relate to e-scooters with a maximum speed of 20 km per hour.

the category small vehicles destined for use outside the carriageway. There are special rules for e-scooters, but in general the rules for bicycles apply. In France the category is defined as 'motorized personal transport'. In Belgium there is a vehicle category 'personal transportation devices' with two sub-categories: motorised and non-motorised. These devices may not be wider than 1 m, and the motorised ones (which includes the e-scooter) may not go faster than 25 km/h. In Germany e-scooters are a new category of vehicles that is similar to light mopeds and bicycles. In Spain E-scooters are described as 'personal mobility vehicles or devices'.

3.3 Are there age restrictions for using an e-scooter?

Are there age restrictions for using an e-scooter?												
Yes, allowed from age …..	AT (12)	CH (14)	DE (14)	DK (15)	FR (12)	IT (18)	PT (16)					
No	BE	ES	FI	HU	NO	PL	SE					
Do not know / unclear	CZ											

In about half of the responding countries (8/15) there is an age restriction for using an e-scooter; in the other half there is not. There are quite some differences between countries. In Austria, a person is allowed to use an e-scooter from the age of 12 onwards or after having passed the bicycle exam which is generally around 9 or 10 years of age. In France the use of an e-scooter is also allowed from 12 years old given that the e-scooter travels not faster than 25 km/h. In Germany it is allowed to use an e-scooter when 14 years of age. In Switzerland an e-scooter can be used from 14/15 years old if in the possession of a moped license; from 16 years old no license is required. In Denmark it is required to be 15 years old to ride an e-scooter, but younger drivers are allowed to use the e-scooter when under the supervision of an adult and in playground areas. In Italy the age restriction is 18 years old or younger when having a moped license. In Portugal the age restriction is 16 years old.

In Finland there is no legal age restriction, but private e-scooter companies apply an age limit of 18. In Spain there is no age restriction at the national level either, but local authorities can set their own age restriction. For example, the city of Madrid has set a minimum age of 15 years old.

3.4 Is there a maximum speed limit for e-scooters?

Is there a maximum speed limit for e-scooters?															
Yes, 20 km/h	CH	DE	DK	IT	NO	SE									
Yes, 25 km/h	AT	BE	CZ	ES	FI	PL	FR								
No	HU														
Do not know / unclear	PT														

In all countries, with the exception of Hungary, there is a general maximum speed limit for e-scooters of 20 or 25 km/h. The speed limit sometimes depends on where the e-scooter is used or to what vehicle category it belongs. In Italy the maximum speed limit is 20 km/h on mixed pedestrian and cycle paths and 6 km/h in pedestrian areas. In Finland and the Czech Republic, the maximum speed limit is 25 km/h, and if the scooter travels faster than that it is categorized as a moped. In France the e-scooter is also limited to 25 km/h and as a speed-pedelec limited to 45 km/h. In Sweden there are actually three categories for the e-scooter based on its maximum speed: 20 km/h is categorized as a bicycle, 25 km/h if categorized as a moped class I and 45 km/h if categorized as a moped class II. In Portugal it is not completely clear what the maximum speed is.

3.5 Is there a restriction on the maximum power of e-scooters in public space?

Is there a restriction on the maximum power of e-scooters in public space?															
Yes	FR														
Yes, 4000 watts	SE														
Yes, 1000 watts	FI	SE													
Yes, 600 watts	AT														
Yes, 500 watts	CH	DE	IT												
Yes, 250 watts	CZ	ES	SE												
No	BE	HU	PL												
Do not know / unclear	DK	NO	PT												

According to our respondents in most countries there is a restriction on the maximum power e-scooters can have in the public space. There is a wide variety though, probably related to the vehicle category. For example, the Swedish respondent explained that the maximum power depended on the category the e-scooter falls in: 250 W for a bicycle, 1000 W for a moped class I and 4000 W for a moped class II. Our French respondent stated that there seemed to be a restriction on the maximum wattage, but the exact maximum was unknown.

3.6 What part of the road do they have to use?

What part of the road do they have to use?															
Pavement	BE	FI	SE												
Bicycle facility	AT	BE	CH	CZ	DE	DK	FR	FI	IT	PL	PT	SE			
Road lane	AT	CH	DE	FR	IT	PT	SE								
All of above	NO														
Do not know / unclear	ES	HU													

Most of our respondents replied that e-scooter drivers are expected to use bicycle facilities if available. If not available, they are expected to use the road lane in Austria, France (if the speed limit for that road is not higher than 50 km/h), Germany, Portugal, Sweden and Switzerland. In Italy, e-scooter users can use both the bicycle path and the road lane given that the road lane is in a 30 km/h zone. In Belgium and Sweden e-scooters are allowed on the pavement if they do not travel faster than pedestrians. In Finland, e-scooters can use the pavement at "walking speed", if their maximum speed is 15km/h. A maximum speed means that the electric assistance automatically switches off when the device exceeds this speed. If the electric assistance is not automatically switched off at 15 km/h, the e-scooter must use the bicycle facility if available. In the Czech Republic, even though rules for bicycles apply to e-scooters, they seem to be tolerated on the pavement according to the Czech respondent. In Norway, e-scooters can make use of all parts of the road, they are however expected to only use the pavement when pedestrian traffic is low and they do not present a hazard to pedestrians or impede walking; passing pedestrians must be done at a safe distance and at approximately walking speed. According to the Spanish respondent the national regulations say that an e-scooter is not allowed on rural roads, and as a vehicle, it is not allowed on the pavement either. However, every local authority can set stricter restrictions pertaining to where e-scooters are and are not allowed to ride.

3.7 Do they need to have a registration plate?

Do they need to have a registration plate?															
Yes	DE														
No	AT	BE	CH	CZ	DK	ES	FI	FR	HU	IT	NO	PL	PT	SE	
Do not know / unclear															

Only in Germany, e-scooters must have a registration plate. This is in fact an insurance indicator like for mopeds, but a smaller sticker version. In all other responding countries this is not needed (unless they are classified as a moped, based on speed or power).

3.8 Do they need an obligatory legal liability insurance?

Do they need an obligatory legal liability insurance?															
Yes	DE	FR													
No	AT	BE	CH	CZ	DK	ES	FI	HU	IT	NO	PL	PT	SE		
Do not know / unclear															

According to our respondents in most countries (13/15) e-scooter riders are not obligated to have a legal liability insurance. Again, this also depends on the vehicle category (power, speed limit) the e-scooter belongs to. For example, the Belgian law on this states that vehicles that cannot exceed 25 km/h are exempt from the obligation to be insured. In Sweden, e-scooters that belong to the bicycle category do not need a legal liability insurance. However, there were cases in which insurance became an issue because the vehicle was too powerful to be a bicycle. In Denmark, there is no insurance obligation for privately owned e-scooters, but there is for rental e-scooters.

3.9 Is there a helmet obligation?

Is there a helmet obligation?															
Yes, for all users															
Yes, but only for ….	AT	CZ	FR	SE											
No	BE	CH	ES	DE	DK	FI	HU	IT	NO	PL					
Do not know / unclear	PT														

In two-thirds of the participating countries (10/15) e-scooter users are not obligated to use a helmet. In Austria, Czech Republic, France and Sweden it is compulsory for children/youngsters: in Austria for users younger than 12 years, in Sweden for users younger than 15 years, and in the Czech Republic for users younger than 18 years. In France, users between the age of 12 and 18 years old must wear a helmet and must be accompanied by an adult. This adult must travel on a separate vehicle as sharing is not allowed.

3.10 What is the level of enforcement related to e-scooter legislation?

What is the level of enforcement related to e-scooter legislation?															
Not at all	HU	IT													
Hardly	NO	PL	PT	SE											
Now and then	BE	CZ	DK	FI											
Regular	AT	DE	ES												
Do not know / unclear	CH	FR													

The level of enforcement of e-scooter legislation seems to vary largely between countries. In Hungary and Italy there is no enforcement at all according to the respondents from those countries. In Austria, Germany and Spain there is regular enforcement. In the other countries, the enforcement is said to be infrequent.

Some of the respondents elaborate a bit on this issue. The Norwegian respondent explained that the (limited amount of) enforcement regarding e-scooters mostly focuses at illegally high speeds. Belgian cities encounter problems with e-scooters riding too fast in pedestrian areas, and this is enforced. In Denmark, at times the police organise targeted enforcement actions to address specific e-scooter violations. In Finland, in October 2019, a police surveillance group consisting of five police officers was established, focusing at vulnerable road users, including e-scooters. In Austria, the enforcement is concentrated in towns and cities with e-scooter rental companies, like in Vienna.

3.11 Do you have any additional information about the legal status and/or conditions for use of e-scooters?

When asked if there was any additional information about the legal status or conditions for using e-scooters, many respondents referred to the obligation to have lights and reflectors, a sound warning system, an alcohol limit. Regulations concerning the technical features of the vehicle were also mentioned, such as maximum load, and brakes. The rules largely differ among countries.

Many respondents also mentioned that more strict (national) regulations were needed, e.g. related to the number of persons on an e-scooter, parking of e-scooters, and regulations for e-scooter renting companies. Quite a few countries are in the process of defining or expanding current regulations.

4. Number and usage of e-scooters

The second series of questions concerns the usage of e-scooters, such as numbers, type of users and type of trips.

4.1 How many e-scooters are there in your country?

How many e-scooters are there in your country?															
Registered number															
Estimated number	DE	DK	EL	FI	NO	PT	SE								
No information	AT	BE	CH	CZ	ES	FR	HU	IT	NL	PL	RS				

In none of the countries the number of e-scooters in their country is formally registered. Some countries (7/18) have estimates of the number, nationally or locally; others have no information at all (11/18).

In Denmark there are an estimated 7,000 e-scooters, in Norway an estimated 11,000 and in Sweden an estimated 17,000. In Germany it is estimated that there are around 500,000 private e-scooters and around 50,000 sharing scooters and in Finland “several thousand rentable scooters”.

For some countries there are just, or in the case of Sweden also, estimates for a specific town or city. Numbers mentioned were:

- Thessaloniki city (Greece): more than 100 e-scooters
- Lisbon (Portugal); around 4,000 (shared) e-scooters
- Swedish cities (mainly rental scooters in summertime):
    - Stockholm: around 9,000
    - Gothenburg: around 4,000
    - Malmö: 1,000 - 1,500
    - Uppsala: 1,000 - 1,500
    - Helsingborg: around 1,000

4.2 Who are the main users (age group) of e-scooters in your country?

Who are the main users (age group) of e-scooters in your country? (Up to 2 answers possible)															
Children															
Young Adults	BE	DE	DK	EL	HU	NO	PL	RS	SE						
Adults															
Elderly															
No information	AT	CH	CZ	ES	FI	FR	IT	NL	PT						

Half of the respondents indicated that young adults are the main users of e-scooters; the other half did not have information to what age group the users mainly belong.

4.3 Who are the main users (origin) of e-scooters in your country?

Who are the main users (origin) of e-scooters in your country? (Up to 2 answers possible)															
Foreign tourists															
National tourists															
City/town citizens	BE	DK	EL	NO	PL	RS	SE								
No information	AT	CZ	CH	DE	ES	FI	FR	HU	IT	NL	PT				

We also asked about for the origin of the 'typical' e-scooter user, such as foreign tourists, national tourists or city/town citizens. Around two third of the respondents (11/18) indicated not to have information about the origin of the users. In seven countries the main users of the e-scooter are city/town citizens.

4.4 What is the main reason for using e-scooters?

What is the main reason for using e-scooters? (Up to 2 answers possible)															
Business trips															
Work/school trips	AT	DK	EL	NO	SE										
Leisure trips	AT	DE	DK	PL	RS										
Other, namely															
No information	BE	CH	CZ	ES	FI	FR	HU	IT	NL	PT					

Most respondents (11/18) did not have information about the reasons for using e-scooters in their country. In Austria, a recent survey[3] revealed that the most frequent trip purposes are leisure (18%) and work & education (16%). In Denmark these are also the two most frequent reasons for using an e-scooter. In Germany, Poland and Serbia e-scooters are mostly used for leisure trips. However, according to our German respondent, the reason scooters are used varies per origin of the user and between privately owned and shared e-scooters. Shared e-scooters are mainly used by tourists for leisure trips and privately-owned e-scooters are mostly used for work/school trips. In Greece, Norway and Sweden e-scooters are mostly used to commute between home and work or home and school.

In a Norwegian study[4] e-scooter users in Oslo were asked about their last trip. The results showed that 57% of the users had used the e-scooter in combination with other travel modes, mostly in combination with public transportation. Many of the trips were typical last mile trips from public transport stops to final destinations. Trips are generally short with an average length of one kilometre or ten minutes.

[3] https://www.kfv.at/escooter2019/

[4] Fearnley, N., Berge, S.H., & Johnsson, E. (2020). Shared e-scooters in Oslo. TØI rapport 1748/2020. Oslo, Transportøkonomisk institutt.

4.5 Are e-scooters available for rent by passers-by?

Are e-scooters available for rent by passers-by?															
Yes, in most larger towns/cities	CZ	DE	DK	ES	FI	PL									
Yes, in some larger towns/cities	AT	BE	CH	EL	FR	HU	IT	NO	PT	SE					
Yes, but only in..															
No	RS	NL													
Do not know / unclear															

As a passer-by you can rent an e-scooter in at least some larger towns or cities in almost all responding countries. In the Czech Republic, Denmark, Germany, Finland, Poland and Spain e-scooters are for rent in most larger towns and cities. In Serbia and the Netherlands, it is not possible to rent an e-scooter as a passer-by.

4.6 What transport mode(s) do e-scooters mainly replace?

What transport mode(s) do e-scooters mainly replace? (Up to 2 answers possible)															
Walking	AT	DE	EL	FR	HU	IT	NO	RS	SE						
Cycling	IT														
Moped riding	BE														
Car															
Public transport	AT	BE	DE	EL	FR	HU	NO	RS	SE						
Other															
No information	CH	CZ	DK	FI	NL	PL	PT	ES							

E-scooters might be used to replace certain other transport modes, for example to shorten an otherwise 10 min walk to public transport. Based on the responses from 10 out of the 18 participating countries, e-scooters mainly replace walking and public transport trips. In Italy, it also replaces cycling, and in Belgium also moped riding. The remaining eight respondents indicated to have no information regarding the transport mode that is replaced by e-scooters in their country.

5. Safety of e-scooters

The third and last series of questions relate to information about the safety of e-scooters, both in terms of accidents and in terms of road user behaviour. Both in France and in Portugal surveys are in process, but results were not yet available at the time of this survey.

5.1 Are e-scooters identifiable in the national road accident statistics as a separate vehicle category?

Are e-scooters identifiable in the national road accident statistics as a separate vehicle category?															
Yes	AT	BE	CH	DE	DK	ES	FR								
No	CZ	EL	FI	HU	IT	NL	NO	PL	PT	RS	SE				
Do not know / unclear															

In most participating countries (11/18) e-scooters are currently not identifiable in the accident statistics. However, in Austria, Belgium, Denmark, Germany, France, Spain and Switzerland they are, mostly only from 2020 onwards. Based on information from the European Injury Database (IDB[5]), it was estimated that in 2019 in Austria around 1,200 e-scooter riders had been hospitalized.

In Germany, information is available for some cities and towns. Between mid-June and mid-November 2019, the Cologne police registered 104 traffic accidents involving e-scooters with 109 injuries in total. In these accidents 24 people suffered serious injuries and 85 minor injuries[6]. Alcohol seems to have played an important role in almost one third of the accidents. Berlin had 291 accidents in the second halftime of 2019.

Even though there is no official registry of e-scooter accidents in Norway, emergency rooms do note whether patients were involved in (e-scooter) accidents. The limited data from the summer of 2019, combined with data of number of trips from e-scooter companies, were used to create a (careful) estimate of accident risk for e-scooters in Oslo. This estimate is about 89 accidents per million kilometres travelled. In contrast, bicycles have around 8 accidents per million kilometres. The respondent noted that "as e-scooters are quite new to Norway, and findings from e.g. the US have found that accident risk decreased with experiences, it is likely that the accident risk will decrease after a while."

[5] IDB brochure (2015): https://www.eurosafe.eu.com/uploads/inline-files/EU-Injury%20database%20April%202015%20versie%20gs.pdf

[6] https://t3n.de/news/steigende-unfallzahlen-teil-1231703/

5.2 Do you have self-reported information about accident or incident involvement?

Do you have self-reported information about accident or incident involvement?															
Yes	AT	BE	FI	NO											
No	CZ	CH	DE	DK	EL	ES	FR	HU	IT	NL	PL	PT	RS	SE	
Do not know / unclear															

The majority of the countries (14/18) does not have self-reported information about e-scooter riders' accident or incident involvement. Austria, Finland, Belgium and Norway do have self-reported information about accident and/or incident involvement of e-scooter riders.

In Austria, a survey was performed in June 2019 among 501 e-scooter users and 598 non-users[7]. Among the e-scooter users 14% reported conflicts with other road users, 13% reported near-accidents with other road users and 8% reported accidents (6% were single accidents and 2% were accidents involving other road users). Among the non-users of e-scooters 18% reported conflicts with e-scooter users, 18% reported near-accidents with e-scooter users and 1% reported accidents with e-scooter users. Most conflicts/near-accidents occurred between e-scooter users and pedestrians/cyclists. The main reported reason for conflicts and (near) accidents were carelessness or distraction, disregard of traffic rules, excessive speeds and insufficient safety distances.

In Helsinki, Finland, between May-November 2019, 400 injuries requiring hospital stay due to e-scooter accidents were reported. Injuries not requiring hospital stay were not included in this study. In total 65% of the accidents occurred without involvement of another road user. Like in Cologne, alcohol seems to have contributed to many of the cases[8].

In Norway a pilot study on e-scooter (near-)accidents was performed among 431 e-scooter riders through roadside interviews and a survey in downtown Oslo[9]. Eleven percent reported at least one accident (defined as collision or falling) during the 2019 season. In a previous survey, this was 9.5%[10]. People were asked to recall their last accident (if they had multiple) and 86% of these had been a single accident without involvement of another road user. In most cases the accident was due to road surface issues, for example slipperiness, tramlines or holes. Users were unharmed in their last accident in 60% of the cases.

[7] https://www.kfv.at/escooter2019/

[8] Helsingin Sanomat newspaper, 14/15 November, 2019. Sähköpotkulautojen synkkä saldo Helsingissä: 400 potilasta sairaaloissa, yhdeksän aivovammaa.

[9] Fearnley, N., Berge, S.H., & Johnsson, E. (2020). Shared e-scooters in Oslo. 1748/2020. TØI, Oslo

[10] Berge, S.H. (2019). Kickstarting Micromobility – a Pilot Study on e-scooters. 1721/2019. TØI, Oslo.

5.3 Is there objective (from observations) or self-reported information about the speed behaviour of e-scooter riders?

Only Austria has objective information about speed behaviour of e-scooter riders. They found that e-scooters travelled with a mean speed of 15.1 km/h and a maximum speed of 31 km/h[7].

5.4 Is there objective (from observations) or self-reported information about helmet usage by e-scooter riders?

Only Austria and Denmark have objective information from observations about helmet usage among e-scooter riders. In Austria it was found that 3% of the e-scooter riders use a helmet while riding[7]. In Denmark 27% of the e-scooter riders riding a privately-owned e-scooter wore a helmet and 2% of the riders riding a rented e-scooter[11]. Norway has some self-reported information from e-scooter riders in Oslo about their helmet usage. They were asked if they used a helmet on their last trip with an e-scooter and 5% responded positively[7]. In Denmark and Norway there is no helmet obligation; in Austria only for children younger than 12 years, but they are not yet allowed to ride an e-scooter (see Sections 3.3 and 3.9).

5.5 Is there objective (from observations) or self-reported information available about the road type and/or part of the road they use?

For Austria and Denmark there is some information from observations about the road type and/or part of the road e-scooter riders use. In Austria 4% of the e-scooter riders use the roadway, 73% use the cycling facility and 23% illegally use the sidewalk[7]. In Denmark e-scooters mainly drive on the pavement and on zebra crossings[9]. The respondent from Germany indicates that e-scooter riders do not follow the rules and use the roadway, bicycle and pedestrian paths as they like.

For Norway and France there are some self-reported data. In Norway, e-scooter riders in Oslo were asked to choose up to three alternatives on the question which part of the road they usually used. The most chosen alternatives were bicycle lane (73%), combined pedestrian/bicycle paths (57%), pavement (57%), and road (44%)[7].

The Portuguese respondent reported that sidewalk running exists and is a problem, though hardly in Lisbon. In Lisbon, the pavement is made of small limestone cobblestones, making it uncomfortable for e-scooters to use.

[11] https://www.fstyr.dk/DA/Krav-til-koretojer/Regler-om-koretojer/~/media/60ED6343EBBB49A98365D6E8F8BB8A36.ashx

5.6 Is parking of e-scooters in public space seen as a problem in your country?

Is parking of e-scooters in public space seen as a problem in your country?															
Very much so	DE	DK	FR	NO											
Quite a bit	AT	BE	CZ	EL	ES	FI	HU	PL	PT	SE					
Hardly															
Not at all	NL														
Do not know / unclear	CH	IT	RS												

In almost all countries, parking of e-scooters in public space is seen as a (big) problem. It is seen as a safety problem for pedestrians in general, and for older pedestrians, the blind and disabled in particular. For wheelchairs, parked e-scooters form an obstruction. Only in the Netherlands parking of e-scooters is not a problem at all, because they are hardly seen in traffic.

According to our respondent in the Czech Republic, e-scooters from sharing services are often left in places where they should not be left. A similar observation was reported by the Greek respondent: "e-scooters are left at every place on the street and sidewalk, most of the time they are dumped rather than parked."

In some Danish municipalities it has been made mandatory to park them in certain areas. In France, the national authorities are working on parking regulations for (electric) bicycles and e-scooters, to be effectuated in 2026. Meanwhile some local authorities have already implemented mandatory e-scooter parking zones. In Brussels (Belgium) there are also e-scooter parking zones and from September 2019 onwards e-scooter users can be fined for parking e-scooters in no-park zones[12]. As part of a pilot study, dedicated drop-off zones for e-scooters were created near stations[13]. In Austria, in the city of Vienna, there will also be a pilot study of a parking scheme to address the e-scooter parking problem.

The German respondent indicated that in Germany the technical specifications and how to use e-scooters in terms of traffic safety are all regulated, but that there is no national legislation on how to park them, even though parking is one of the biggest problems with e-scooters in Germany. Some cities have therefore developed a memorandum of understanding with e-scooter sharing companies to address this issue[14].

A few countries have done some research into this problem and can provide more details. In Austria a survey among 598 e-scooter non-users showed that almost one fourth of the pedestrians (24.2%) had stumbled or almost stumbled upon a parked e-scooter[7]. A Norwegian study found that non-users of e-scooters were more irritated (37% of the pedestrians and 40% of the cyclists) by parked e-

[12] Brussel beboet vanaf september wildparkeren deelsteps. July 2019: https://www.bruzz.be/mobiliteit/brussel-beboet-vanaf-september-wildparkeren-deelsteps-2019-07-24

[13] Specifieke parkeerplaatsen voor deelsteps in de maak. November 2019: https://www.bruzz.be/mobiliteit/specifieke-parkeerplaatsen-voor-deelsteps-de-maak-2019-11-19

[14] For example, http://www.staedtetag.de/imperia/md/content/dst/2019/mou_e-tretroller_dst_dstgb_final.pdf

scooters than e-scooter users were (19%)[8]. When asked if e-scooters made it difficult to travel downtown, 50% of the pedestrians and 41% of the cyclists, compared to 24% of the e-scooters users and 16% of the motorists, responded “yes” or “a little”[7].

6. Concluding remarks

Electric microscooters or e-scooters are a relatively new but fast-expanding transport mode in many European countries, particularly in larger cities.

Based on our sample of 18 European countries we can conclude that they are legally allowed in most countries. However, the responses to the current survey also show that their legal position differs between countries. Sometimes they are treated as an (electric) bicycle, sometimes as a (light) moped, either or not depending on the power, sometimes they are a separate vehicle category. This has consequences for, for example, the position on the road, the maximum speed, helmet legislation, and insurance obligation. The current survey also shows that many countries are struggling with the legal status of this mode of transport and are still working on more targeted or more elaborate legislation.

Information about the number of e-scooters, who use them and for what purposes is limited. If available, it often refers to local or regional situations only. At a nationwide level, there is hardly any objective information.

Similarly, the information about accident involvement is limited. This is mainly because e-scooters are not yet a separate vehicle category in the accident statistics, though in some countries, this has changed very recently. The limited amount of information that is available is mainly local or regional. This information does suggest, though, that e-scooters do indeed pose a safety problem for themselves and for others. Only for a few countries there is information available on the behaviour of e-scooter riders, objective information from observations or self-reported information. For several countries there seem to be studies or surveys ongoing.

In all countries, parking of e-scooters in public space is considered a serious problem, in particular for pedestrians. Several countries have dedicated parking zones for e-scooters in place; others are in the process of developing them.

Altogether it can be concluded that the (legal) position of e-scooters differs between countries and that objective information about their numbers, their safety. and their use and users is scarce. The many explanations and clarifications given by the respondents, however, show that it is an issue that increasingly receives attention from both governmental bodies and research institutes.

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Appendix: Questionnaire and responses

Introduction and instruction

This questionnaire is about electric microscooters or simply e-scooters:

Please, answer the following questions for your country or ask one of your colleagues or someone else in your national network to do so. The questions cover three issues:

- Legal status and conditions
- Number and usage
- Safety information

It is also possible to ask different people to complete the different parts in this questionnaire. The time needed to complete the questionnaire depends on the amount of information available, and your active knowledge of this information. We expect it to take between 5 and 20 minutes on average.

We would be grateful if you or a colleague could find some time to complete the questionnaire and submit it before 15 March.

Part I: Legal status and conditions of e-scooters

I-1. Are e-scooters currently legally allowed in public spaces in your country?															
Yes	AT	BE	CH	CZ	DE	DK	ES	FI	FR	HU	IT	NO	PL	PT	SE
No	EL	NL	RS												
Do not know / unclear															

If “No”, respondents were directed to question 11

Explanations:

BE: “E-scooters fit into the category of 'motorized personal transportation devices'. These vehicles are allowed in public spaces if they cannot go faster than 25 km/h and are not wider than 1 meter.“

CH: “They are allowed if they fulfil certain technical requirements. The answers in this questionnaire relate to e-scooters with a maximum speed of 20 km per hour (e-scooters with a maximum speed of 30 km/h are allowed, too, if they fulfil certain technical requirements; some requirements and rules are different from those for the slower ones).“

CZ: “E-scooters have similar rights as e-bikes. There is an issue about the use of pedals. On an e-bike you still need to tread, it is impossible on e-scooter.“

DE: “In Germany Personal Light Electric Vehicles (PLEV) / "Elektrokleinstfahrzeug (eKF)" are regulated since Summer 2019. This new vehicle classification subsumises light electric vehicles which are selfbalancing or do not have a seat (not only e-scooters). They have to fulfill technical requirements (eg. a handelbar). Selfbalancing monowheels or electric skateboards do not meet those requirements.“

ES: “They can’t ride on rural roads - Can’t ride on the sidewalk (same treatment as vehicles, and vehicles can’t).”

FI: “Personal e-scooters and scooter-share companies both available in Finland.“

FR: “Décret 2019-1082 du 23 octobre 2019 relatif à la réglementation des engins de déplacement personnel (EPD) Loi 2019-1428 du 24 décembre 2019 d'orientation des mobilités, spécialement articles 51, 52, En ce qui concerne les aspects juridiques, nous avons essentiellement considéré ici les nouveaux engins de déplacement à moteur dit EDPM (de type trottinettes électriques comme illustrées en page d'accueil sur les photos) qui font l'objet des modifications juridiques nées des textes ci-dessus signalés.“

HU: “Seemingly they are everywhere there. According to my knowledge they are not banned. At the moment there is no paragraph in the Highway Code dealing with them.“

RS: “There are not recognized as separate category of vehicle.“

SE: “There is some local parking regulations and restrictions.“

I-2. To what road users/vehicle category do e-scooters legally belong?															
Pedestrian	FI														
Bicycles	CZ	DK	FI	IT	NO	PL	SE								
(Light)Moped	CH	SE													
Dedicated category	AT	BE	DE	ES	FR										
Do not know / unclear	HU	PT													

Explanations:

AT: "Small and mini scooters with electric motor" as part of the category small vehicles mainly destined for use outside the carriageway. Within this category, there are special rules for e-scooters stating that in general, the rules for bicycles apply."

BE: "Belgian traffic regulation specifies a vehicle category named 'personal transportation devices', with two sub-categories: motorized and non-motorized. This is a very handy category in with few restrictions. These devices may not be wider than 1 m, and the motorized ones may not go faster than 25 km/h. Examples of non-motorized PTD's: skateboards, wheelchairs (if the person in the wheelchairs turn the wheels himself), kick-scooter... Examples of motorized PTD's: hoverboard, monowheel, Segway, e-scooter...."

CH: "The answers regarding Switzerland relate to e-scooters with a maximum speed of 20 km per hour."

CZ: "Bigger e-bikes can be problematic; they are similar to mopeds."

DE: "new category (but similar to light mopeds and bicycles)."

ES: "Personal mobility vehicle/ device."

FI: "Considered a pedestrian if max speed 15km/h".

NO: "https://lovdata.no/dokument/SF/forskrift/1990-02-19-119 for bicycles and https://lovdata.no/dokument/SF/forskrift/1986-03-21-747 for regulations on driving and pedestrian traffic. However, both are in Norwegian."

PT: "They have to run in street space, just like any other vehicle. No driving licence needed. Light helmet required."

SE: "They can be both bicycles and light mopeds. It depends on how powerful the motor is. 250 w - it is a bicycle, over 250 w it is a moped, class I or II."

I-3. Are there age restrictions for using an e-scooter?												
Yes, allowed from age …..	AT (12)	CH (14)	DE (14)	DK (15)	FR (12)	IT (18)	PT (16)					
No	BE	ES	FI	HU	NO	PL	SE					
Do not know / unclear	CZ											

Explanations:

AT: "allowed from the age of 12 or earlier if a person has passed the bicycle exam which is usually done in 4th grade, i.e. age 9-10."

CH: "14 and 15 years olds are allowed to use them if they have a moped licence; from 16 years on there is no licence required."

DK: "15 years old. Younger are allowed if in the company of an adult (18+) and on their own on playground areas."

FI: "No legal age restriction, but private e-scooter companies have an age limit of 18."

FR: "12 ans pour les EDPM pouvant circuler à une vitesse supérieure à 6 km/h et jusque 25 km/h."

IT: "18 years or minors with a driving license AM."

PT: "16 years."

I-4. Is there a maximum speed limit for e-scooters?															
Yes, 20 km/h	CH	DE	DK	IT	NO	SE									
Yes, 25 km/h	AT	BE	CZ	ES	FI	PL	FR								
No	HU														
Do not know / unclear	PT														

Explanations:

CH: "20 km/h without action of the driver (i.e. only the engine is propelling). The engine supports until a speed of 25 km/h is reached."

CZ: "25 like for e-bikes, if the scooter moves more quickly, it is moped."

FI: "25km/h. Same as pedal assist e-bikes. Vehicles exceeding this must be registered as mopeds."

FR: "25 km/h for e-bike and 45 for speed-bike."

IT: "20 km/ h in mixed pedestrian and cycle paths; 6km/h in pedestrian areas."

SE: "20 km/h for a bicycle, 25 km/h for a moped class II and 45 km/h for a moped class II. But it comes a lot of technical demands on mopeds to be allowed in traffic."

I-5. Is there a restriction on the maximum power of e-scooters in public space?															
Yes	FR														
Yes, 4000 watts	SE														
Yes, 1000 watts	FI	SE													
Yes, 600 watts	AT														
Yes, 500 watts	CH	DE	IT												
Yes, 250 watts	CZ	ES	SE												
No	BE	HU	PL												
Do not know / unclear	DK	NO	PT												

Explanations:

FR: "il semble que oui, mais réglementation à vérifier."

SE: "250 w for a bike, 1000 w for a moped class I and 4000 w for a moped class II."

I-6. What part of the road do they have to use?															
Pavement	BE	FI	SE												
Bicycle facility	AT	BE	CH	CZ	DE	DK	FR	FI	IT	PL	PT	SE			
Road lane	AT	CH	DE	FR	IT	PT	SE								
All of above	NO														
Do not know / unclear	ES	HU													

Explanations:

AT: "Bicycle facility, if available; if not, then road lane."

BE: "The rules to follow are those of pedestrians if they are not going faster than footpace, those of cyclists if they are going faster than footpace. So the user can switch between these modes according to the circumstances. Link to the particular article in the Belgian traffic regulations in Dutch and in French: https://wegcode.be/wetteksten/secties/kb/wegcode/107-art7bis & https://www.code-de-la-route.be/textes-legaux/sections/ar/code-de-la-route/107-art7bis ."

CH: "If there are no bicycle facilities, they have to use the road lane."

CZ: "Regulation is the same as for bikes. But you can see e-scooters on pavement, it is tolerated at most."

DE: "E-scooters must use a bicycle lane. If none is available, the have to use the road lane more information: https://www.gesetze-im-internet.de/ekfv/eKFV.pdf -> § 10 Zulässige Verkehrsflächen."

ES: “It is regulated at the local level. The Spanish regulation on this says that they can't ride on rural roads, and as a vehicle, they can't ride on sidewalks. However, every local authority sets stricter restrictions of where they can ride (e.g. only bicycle facilities, etc.).”

FI: “E-scooters are classed as pedestrians if the maximum speed of the device is 15km/h. The device’s electric assistance must automatically switch off when the device exceeds this speed. If this is not a feature of the device, it cannot be used on pedestrian paths even if riding speed remains under 15km/h. Furthermore, official guidelines state that when riding on pedestrian infrastructure, the speed of the device must remain at “walking speed”.

FR: “En agglomération 1) bandes ou pistes cyclables lorsqu’elles existent (pour la piste, celle située à droite de la chaussée, dans le sens de circulation) 2) à défaut de piste ou bande cyclable, ils peuvent circuler sur - les routes dont la vitesse maximale (VMA) autorisée est inférieure ou égale à 50 km/h, sans rouler de front - les aires piétonnes, sauf dispositions différentes prises par l'autorité investie du pouvoir de police de la circulation, à la condition de conserver l'allure du pas et de ne pas occasionner de gêne aux piétons - les accotements équipés d’un revêtement routier Hors agglomération - uniquement sur les voies vertes et les pistes cyclables Des réglementations plus restrictives peuvent être prises localement par les autorités investies du pouvoir de police de la circulation

IT: “They can be used both in the road lane (only in 30 km/h zone) and bicycle path (Annex 2 of Decree Law n.162 07/12/2019).”

NO: “All of the above In Norway, bicycles (and thus e-scooters) can use all areas of the road. There are some conditions for using the pavement. It is permitted when pedestrian traffic is low and the rider does not present a hazard or impede walking. Passing pedestrians must be done at a safe distance and at approximately walking speed.”

PT: “E-scooters, as mopeds, should use bicycle facilities when available. If not available, they should use motorized traffic lanes.”

I-7. Do they need to have a registration plate?															
Yes	DE														
No	AT	BE	CH	CZ	DK	ES	FI	FR	HU	IT	NO	PL	PT	SE	
Do not know / unclear															

Explanations:

FI: “Registration plate required only if speed exceeds 25km/h. Vehicle must then be registered as a moped.”

PT: “The rules for mopeds apply to these vehicles.”

I-8. Do they need an obligatory legal liability insurance?															
Yes	DE	FR													
No	AT	BE	CH	CZ	DK	ES	FI	HU	IT	NO	PL	PT	SE		
Do not know / unclear															

Explanations:

BE: "Article 2bis of this Royal decree (Dutch and French) https://www.wegcode.be/wetteksten/secties/wetten/w211189/983-hs2 & https://www.code-de-la-route.be/textes-legaux/sections/lois/w211189/983-hs2-v15-983"

DK: "For privately owned e-scooters insurance is not mandatory. For rental e-scooters insurance is mandatory. The firms renting the scooters to people are responsible for the insurance."

DE: "an insurance indicator (sticker)/ Versicherungsplakette Size: 52,8 mm width X 65 mm hight more information: https://www.gesetze-im-internet.de/ekfv/eKFV.pdf § 2 Anforderungen an das Inbetriebsetzen -> Versicherungsplakette für Elektrokleinstfahrzeuge nach § 29a der Fahrzeug-Zulassungsverordnung f https://www.gesetze-im-internet.de/fzv_2011/__29a.html."

ES: "VMPs are outside the scope of Regulation (EU) No. 168/2013 of the European Parliament and of the Council of 15 January 2013 on the approval of two or three-wheeled vehicles and quadricycles, and the market surveillance of such vehicles 2. Consequently, they are not required administrative authorization to drive or drive, or compulsory insurance."

FI: "Not even possible to acquire."

FR: "Selon la Fédération Française des assurances, les EDPM sont des véhicules terrestres à moteur (VTM) qui doivent être assurés à ce titre pour les dommages commis aux tiers du fait de leur utilisation. Il existe en France une législation spécifique relative à l'assurance obligatoire des VTM. En cas d'utilisation d'un véhicule de flotte (free-floating) il est recommandé de vérifier dans le contrat de location que le loueur a souscrit un contrat d'assurance et de vérifier auprès de son assureur personnel que celui-ci couvre les risques du fait de l'utilisation du véhicule au titre de l'assurance dite "responsabilité civile chef de famille" ou qu'il propose une assurance spécifique."

SE: "If it is a bicycle it doesn't need that. But we´ve had some cases where the Insurance wasn't valid because the vehicle was too powerful to be a bicycle. A moped has to be insured in a different way than a bicycle."

I-9. Is there a helmet obligation?															
Yes, for all users															
Yes, but only for	AT	CZ	FR	SE											
No	BE	CH	ES	DE	DK	FI	HU	IT	NO	PL					
Do not know / unclear	PT														

Explanations:

AT: "for children up to 12."

CZ: "Helmet is obligatory for persons younger 18 years."

SE: "Users younger than 15 has to wear a helmet."

I-10. What is the level of enforcement related to e-scooter legislation?															
Not at all	HU	IT													
Hardly	NO	PL	PT	SE											
Now and then	BE	CZ	DK	FI											
Regular	AT	DE	ES												
Do not know / unclear	CH	FR													

Explanations:

AT: "enforcement: … where there are rental systems and therefore a substantial proportion of misuse, like in Vienna."

BE: "There are not many restrictions, so there is no enforcement possible regarding helmet use, vehicle registration, insurance or minimum age. However, cities encounter problems with e-scooter users riding too fast in pedestrian area's or hindering pedestrians. This is enforced by the police! Also 'parking' these e-scooters is an issue. This mostly leads to discussions between the shared e-scooter suppliers and the municipal authorities."

DK: "The police makes special enforcement at times with extra problems/attention."

FI: "New police VRU surveillance group consisting of 5 police officers established in October 2019."

FR: "Nous avons des informations sur les peines encourues fixées par la réglementation en cas de transgression des règles mais pas d'information sur la mise en application des textes en matière de contrôle des infractions."

NO: "A few efforts, mostly regarding e-scooters at illegally high speeds, but not much."

I-11. Do you nevertheless see them in traffic?															
Not at all															
Hardly	NL														
Now and then	RS														
Regular	EL														
Do not know / unclear															
Not applicable	AT	BE	CZ	DE	DK	FI	FR	HU	IT	NO	PL	PT	ES	SE	CH

Explanations:

EL: "They started operating more than a year ago, being very welcome by citizens. However, certain problems occurred that made it necessary to establish a legal framework for their operation."

I-12. Any additional information about the legal status and/or conditions for use of e-scooters?

BE: "There is a demand to restrict the number of persons on a e-scooter or 'personal transportation device' in general. Currently, it is not restricted as such. There is off-course a maximum load specified in the instruction manual, but users are not obliged to carry the instruction manual with them, so there is not really a solid base for the police to check that."

DK: "They must have lights on all day and reflectors. The allowed BAC is 0,5. Only one person is allowed on the scooter."

DE: "The "Elektrokleinstfahrzeuge-Verordnung" regulates the technical specs and how to use e-scooters in terms of traffic safety. There is currently no national legislation on how to park those vehicles. But this is one of the biggest problems in Germany. Some cities have a Memorandum of Understanding with e-scooter sharing companies. One example: http://www.staedtetag.de/imperia/md/content/dst/2019/mou_e-tretroller_dst_dstgb_final.pdf"

ES: "Age restrictions: no age level has been set at the national level, so it depends on the regulation of the local authorities. For example, the city of Madrid has set a minimum age of 15 years old. About the helmet obligation: it has not been set at the national level yet, so it depends on the regulation of the local authorities. Latest regulation on e-scooters is available in Spanish here: http://www.dgt.es/Galerias/seguridad-vial/normativa-legislacion/otras-normas/normas-basicas/Intruccion-VMP-y-otros-vehiculos-ligeros.pdf "

FI: "Front light, reflector and sound warning device mandatory if max speed >15km/h. Vehicle cannot have a seat."

FR: "Sur le casque : - obligatoire pour les mineurs (12 à 18 ans) qui doivent toujours être accompagnés par un majeur (qui circule sur un autre engin car il est interdit d'être à deux sur un EDPM (type trottinette électrique) - obligatoire pour la circulation sur les voies dont la vitesse maximale autorisée fixée à 80 k/h lorsque la possibilité d'utiliser ce type de voie a été autorisée localement par l'autorité investie du pouvoir de police de la circulation, ce qui est possible dans des conditions très encadrées De

nombreuses autres règles ont été fixées, par ex. concernant les équipements du véhicule, notamment les feux de signalisation et les systèmes de freinage. Certaines obligations seront applicables à partir du 31 juillet 2020 seulement,, ceci pour permettre aux constructeurs de se mettre en conformité."

IT: "It is mandatory the presence of an audible warning device and lighting. Vehicles without warning lights may, in any case, circulate during the day; Retro-reflective evening/night vest or suspenders require."

NL: "The Netherlands are currently developing a renewed legal framework that will organize the admittance of light electrical vehicles."

NO: "There is confusion regarding what authority the municipalities have to create regulations for e-scooter sharing. While most seem to have agreed that each municipality can regulate the rules regarding shared e-scooter, it is uncertain whether this would actually hold up in court. Different cities in Norway have different rules for scooter-sharing, some limiting the amount of permitted scooters and/or companies considerably (e.g. Stavanger only allowes 100 e-scooters per rental company). There is no legal blood-alcohol limit for bicycles (and thus e-transporters). However, §21 of the Road Traffic Act reads "no one shall drive or attempt to drive a vehicle while in such a state that he cannot be deemed fit to drive safely, whether due to alcohol or other intoxicating or anesthetic, if ill, tired or otherwise impaired due to other circumstances". That means that if you are able to ride safely, you may ride under the influence. However, if you have an accident or somehow become a safety hazard, you are deemed unfit. We have no explicit rules regarding parking of e-scooters, so only general traffic rules apply, meaning to avoid hindering other traffic users, or blocking the road."

PL: "More strict regulations on e-scooters are still under discussion. Elderly people are affraid. Some of them were injured on sidewalks in big cities."

RS: "Right now new traffic safety law is preparing that will recognise this category and also adequate traffic rules that regard e-scooters."

Part II: Number and usage of e-scooters

II-1. How many e-scooters are there in your country?															
Registered number															
Estimated number	DE	DK	EL	FI	NO	PT	SE								
No information	AT	BE	CH	CZ	ES	FR	HU	IT	NL	PL	RS				

Explanations:

DK: "7.000."

DE: "50.000 sharing scooter (30.000 @ 29.9.2019 see: http://scooters.civity.de/); e-scooter private around 500.000."

EL: "More than 100 Lime e-kick scooters in Thessaloniki city."

FI: "Several thousand rentable scooters, no exact figure available."

NO: "11.000."

PT: "There are no official numbers. According to the media, in Lisbon there were around 5500 (shared) E-scooters in April 2019; whilst in October the number had decreased to around 4000, due to some companies having ceased to operate. The market seems highly volatile."

SE: "~17000 is a low estimation. In September 2019. - Stockholm ~9000, Helsingborg ~1000, Göteborg ~4000, Malmö ~1000-1500 and Uppsala ~1000-1500. In wintertime about half the amount available to rent in named cities. Linköping is about to start up e-scooter service in 2020."

II-2. Who are the main users (age group) of e-scooters in your country? (Up to 2 answers possible)															
Children															
Young Adults	BE	DE	DK	EL	HU	NO	PL	RS	SE						
Adults															
Elderly															
No information	AT	CH	CZ	ES	FI	FR	IT	NL	PT						

II-3. Who are the main users (origin) of e-scooters in your country? (Up to 2 answers possible)															
Foreign tourists															
National tourists															
City/town citizens	BE	DK	EL	NO	PL	RS	SE								
No information	AT	CZ	CH	DE	ES	FI	FR	HU	IT	NL	PT				

Explanations:

DK: Based on the national travel survey, the main use happens in medium/large cities also outside the capital area

II-4. What is the main reason for using e-scooters? (Up to 2 answers possible)															
Business trips															
Work/school trips	AT	DK	EL	NO	SE										
Leisure trips	AT	DE	DK	PL	RS										
Other, namely															
No information	BE	CH	CZ	ES	FI	FR	HU	IT	NL	PT					

Explanations:

AT: "In Austria, a recent survey revealed that the most frequent trip purposes are leisure (18%) and work & education (16%)."

DE: "In Germany we see a huge difference in sharing e-scooter (tourist -> leisure) and private use (trips between work/school and home in Cities and rural areas)."

NO: "When asked about their last trip, e-scooter users in Oslo had mostly (57%) used the e-scooter in combination with other travel modes, mostly in combination with public transportation. https://www.toi.no/publications/shared-e-scooters-in-oslo-article36028-29.html."

II-5. Are e-scooters available for rent by passers-by?															
Yes, in most larger towns/cities	CZ	DE	DK	ES	FI	PL									
Yes, in some larger towns/cities	AT	BE	CH	EL	FR	HU	IT	NO	PT	SE					
Yes, but only in..															
No	RS	NL													
Do not know / unclear															

Explanation:

CH: "There are rental companies: e-scooters are available for registered users of these companies."

II-6. What transport mode(s) do e-scooters mainly replace? (Up to 2 answers possible)															
Walking	AT	DE	EL	FR	HU	IT	NO	RS	SE						
Cycling	IT														
Moped riding	BE														
Car															
Public transport	AT	BE	DE	EL	FR	HU	NO	RS	SE						
Other															
No information	CH	CZ	DK	FI	NL	PL	PT	ES	CH						

II-7. Any additional information about the number and usage of e-scooters?

Explanations:

PT: "There are some ongoing surveys (by Transport centers and municipalities) that may help to answer to some of the questions above, but they are still not publicly available. This is a fashionable topic and there is strong competition between centers; meaning that I cannot access their preliminary data."

ES: "There is no official information/statistics available on the number and usage of e-scooters in Spain."

DE: "User attitude: In Germany we see a huge difference in sharing e-scooters (tourist -> leisure) and private use (trips between work/school and home in Cities and rural areas)."

No: "When asked about their last trip, e-scooter users in Oslo had mostly (57%) used the e-scooter in combination with other travel modes, mostly in combination with public transportation. https://www.toi.no/publications/shared-e-scooters-in-oslo-article36028-29.html."

Part III: Road safety information

III-1. Are e-scooters identifiable in the national road accident statistics as a separate vehicle category?															
Yes	AT	BE	CH	DE	DK	ES	FR								
No	CZ	EL	FI	HU	IT	NL	NO	PL	PT	RS	SE				
Do not know / unclear															

If yes: please provide the available statistics (number of accidents, number of people injured/killed, accident locations/circumstances - whatever is available). If possible, for the last 3 years, otherwise report the available years; please indicate the time period to which the reported data apply.

Explanations:

AT: "Since ~mid 2019, E-scooters have been granted bicycle status and are currently recorded jointly with Pedelecs, i.e. the two can currently not be distinguished. No detailed data yet. According to the KFV's IDB, around 1200 E-scooter riders were hospitalized in 2019."

CH: "From 2020 on, they will be identifiable in Switzerland."

DE: "E-scooter appeared in large numbers with enforcement of the regulation in Germany since July 2019. Since 1st of January 2020 they are part of the German national accident statistics (so we don´t have numbers yet). One example: Berlin had 291 accidents in the second halftime of 2019; Köln / Cologne: The Cologne police had recently drawn an interim assessment. Accordingly, between June 15 and November 18 there were 104 traffic accidents with 109 injuries "with the participation of e-scooters". 24 people suffered serious injuries and 85 minor injuries. "89 of these injuries were drivers of e-scooters. Eight scooters caused 88 percent of these accidents," said the police. Drivers were drunk in almost a third of the accidents. https://t3n.de/news/steigende-unfallzahlen-teil-1231703/."

ES: "It is a separate vehicle category since 25th of March of 2020. Thus, we do not have reliable statistics on them yet."

FR: "à vérifier : mais a priori, une nouvelle catégorie a été créée récemment pour les nouveaux engins de déplacement personnel dans le bulletin national des accidents de la circulation (fichier BAAC) qui doit être rempli par les forces de l'ordre lorsqu'elles interviennent sur les lieux."

III-2. Do you have self-reported information about accident or incident involvement?															
Yes	AT	BE	FI	NO											
No	CZ	CH	DE	DK	EL	ES	FR	HU	IT	NL	PL	PT	RS	SE	
Do not know / unclear															

Explanations:

AT: "Survey in June 2019 among 501 E-scooter users and 598 E-scooter non-users in Austria: E-scooter users: - 14% reported conflicts with other road users - 13% reported near-by-accidents with other road users - 8% reported accidents: 6% alone, 2% with other road users E-scooter non-users: - 18% reported conflicts with e-scooter users - 18% reported near-by-accidents with e-scooter users - 1%

reported accidents with e-scooter users most conflicts/near-by-accidents arise between E-scooter users and pedestrians and cyclists main reasons for conflicts/(near-by)-accidents: carelessness/distraction, disregard of traffic rules, excessive speeds, insufficient safety distances."

FI: "400 injuries requiring hospital stay due to e-scooter accidents in Helsinki between May–November. Less severe injuries not requiring hospital stay not included. 65% of accidents have occurred without involvement of other road users. Alcohol seems to have contributed to many of the cases. (https://www.hs.fi/kaupunki/helsinki/art-2000006307107.html)."

NO: "Self-reported accidents and almost-accidents from e-scooter users in Oslo. 11% had at least one accident (defined as collision or falling) during the 2019 season (9,5% percent in a survey a couple months earlier). 86% of these accidents (or their latest, if they had more than one) were single accidents, mostly due to issues with the surface (e.g., slippery, tramlines, holes). 60% were unharmed in their last accident. https://www.toi.no/publications/shared-e-scooters-in-oslo-article36028-29.html and the earlier: https://www.toi.no/publications/kickstarting-micromobility-a-pilot-study-on-e-scooters-article35781-29.html."

III-3a Is there objective (from observations) information about the speed behaviour of e-scooter riders?																	
Yes, the main findings are....	AT																
No	BE	CH	CZ	DE	DK	EL	ES	FI	FR	HU	IT	NL	NO	PL	PT	RS	SE

Explanation:

AT: "Mean observed speed 15.1 km/h, maximum observed speed: 31 km/h."

III-3b Is there self-reported information about the speed behaviour of e-scooter riders?																	
Yes, the main findings are....	FR																
No	AT	BE	CH	CZ	DE	DK	EL	ES	FI	HU	IT	NL	NO	PL	PT	RS	SE

Explanation:

FR: "Some studies has started to collect this data, but I do not have it personally."

III-4a Is there objective (from observations) information about helmet usage by e-scooter riders?																
Yes, the main findings are....	AT	DK														
No	BE	CZ	DE	EL	FI	FR	HU	IT	NL	NO	PL	PT	RS	ES	SE	CH

Explanation:

AT: "3% use rate"

DK: "27% among privately owned, 2% among rented https://www.fstyr.dk/DA/Krav-til-koretojer/Regler-om-koretojer/~/media/60ED6343EBBB49A98365D6E8F8BB8A36.ashx (in Danish) ."

III-4b Is there self-reported information about helmet usage by e-scooter riders?																
Yes, the main findings are....	FR	NO														
No	AT	BE	CH	CZ	DE	DK	EL	ES	FI	HU	IT	NL	PL	PT	RS	SE

Explanations:

FR: "Some studies has started to collect this data, but I do not have it personally."

NO: "Survey of e-scooter users in Oslo asked whether they respondents used a helmet on their last trip with an e-scooter, and only 5% said yes. https://www.toi.no/publications/shared-e-scooters-in-oslo-article36028-29.html."

III-5a Is there objective (from observations) information available about the road type and/or part of the road they use?															
Yes, the main findings are....	AT	DE	DK												
No	BE	CH	CZ	EL	ES	FI	HU	IT	NL	NO	PL	PT	RS	SE	
Missing	FR														

Explanations:

AT: "4% roadway, 73% Cycling facility, 23% sidewalk (illegally!)."

DK: "They drive on footpath and zebra crossings. https://www.fstyr.dk/DA/Krav-til-koretojer/Regler-om-koretojer/~/media/60ED6343EBBB49A98365D6E8F8BB8A36.ashx (in Danish)."

DE: "e-scooter riders do not follow the rules: They use roadside, bicycle and pedestrian lanes as they like. Instead of bicycle lanes."

III-5b Is there self-reported information available about the road type and/or part of the road they choose?															
Yes, the main findings are....	DE	FR	NO												
No	AT	BE	CH	CZ	DK	EL	ES	FI	HU	IT	NL	PL	PT	RS	SE

Explanations:

NO: "E-scooter riders in Oslo could choose up to three alternatives of where they usually rode an e-scooter, and most chosen alternatives were bicycle lane (73%), on pedestrian and bike paths (57%) and on the pavement (57%). 44% said on the road."

FR: "Some studies has started to collect this data, but I do not have it personally."

Is parking of e-scooters in public space seen as a problem in your country?															
Very much so	DE	DK	FR	NO											
Quite a bit	AT	BE	CZ	EL	ES	FI	HU	PL	PT	SE					
Hardly															
Not at all	NL														
Do not know / unclear	CH	IT	RS												

Explanations:

AT: "Survey in June 2019 among 598 E-scooter non-users in Austria: Approximately one in four (24,2%) pedestrian has already stumbled or almost stumbled upon a parked e-microscooter. KFV pilot testing of a "parking scheme" in the City of Vienna being under preparation."

BE: "https://www.bruzz.be/mobiliteit/specifieke-parkeerplaatsen-voor-deelsteps-de-maak-2019-11-19 & https://www.bruzz.be/mobiliteit/brussel-beboet-vanaf-september-wildparkeren-deelsteps-2019-07-24"

CZ: "E-scooters from sharing services are often on places which are not adequate for that."

DK: "Problems with parked scooters blocking the footpath and elderly falling. Some municipalities have made it mandatory to park scooters in certain areas."

EL: "Left at every place on a street or sidewalk. Most of the times are dumped not really parked."

FI: "Issue appears frequently in the media."

FR: "Erratic parking on the sidewalks La loi citée en introduction a prévu à terme l'interdiction d'aménager des places de stationnement sur la chaussée pour les véhicules à moteur de type automobile cinq mètres en amont des passages piétons mais de prévoir à la place des aménagements de stationnement réservés aux aux cycles et cycles à pédalage assisté ou aux EDP (la mise en conformité doit être effective au plus tard le 31 décembre 2026) D'autre part, certaines autorités locales investies du pouvoir de police de la circulation et du stationnement ont déjà pris des arrêtés pour créer des places spécifiques EDPM sur le trottoir et interdire le stationnement en dehors de ces emplacements."

NO: "In the public discourse, mostly through newspaper articles about e-scooters being treated as trash (people throwing them in the river) or being parked haphazardly, making them a safety issue for some (especially blind people) and being in the way for others (especially people in wheelchairs, who can't easily navigate around). In addition, an early survey of e-scooters (https://www.toi.no/publications/kickstarting-micromobility-a-pilot-study-on-e-scooters-article35781-29.html) in Norway, asking both users and non-users, found that non-users are more irritated by parked e-scooters than users (37% of pedestrians and 40% of cyclists, but 19% of e-scooter users). Similarly, when asked in the later survey (https://www.toi.no/publications/shared-e-scooters-in-oslo-article36028-29.html) whether e-scooters made it difficult to travel in downtown Oslo, about half of pedestrians (50%) and cyclists (41%) said "yes" or "a little", but only 24% of e-scooter users and 16% of motorists said so."

ES: "This is a subjective question. Rental e-scooters are usually parked in the sidewalk and they are used and left wherever, so in my opinion, the parking of these vehicles is a problem to be solved."

SE: "Åsa Forsman (Per Henriksson, Jenny Eriksson) have done an accident analysis on e-scooters. It is in Swedish, let me know if you want it translated. http://vti.diva-portal.org/smash/get/diva2:1390372/FULLTEXT03.pdf."

III-7. Any additional information about road safety aspects of e-scooters in your country?

Explanations:

CZ: "Changes in police statistics are prepared."

DE: "Knowledge of rules / legislation (e-scooters are not equal to bikes in Germany, but often treated as those (e.g. legal alcohol limit)) bicycle infrastructure has to be adopted to new requirements of micromobility (e-scooters/Segway and cargo bikes etc.) Giving hand signal for purposes change of direction is very difficult on a e-scooter -> turn indicators are useful (may perhaps become compulsory in Germany). As the insurance indicator is rather "small" police cannot really identify the number-code for criminal prosecution / regulatory offence (in terms of wrong infrastructure usage). Rental companies should record the necessary user data and the provide those law enforcement officers Minimum age of use is 14 years: Without driving licence or anything like this -> knowledge of traffic rules is not mandatory. Missing international rules and harmonization of approval Usage in other countries and travelling cross-border Transport in public transport (e.g. battery safety)."

ES: "As they have been included as a separate vehicle category very recently (March 2020), we do not have reliable statistics of them at the moment."

NO: "There is no official registry of e-scooter accidents, but emergency rooms do note whether patients were involved in (e-scooter) accidents. More comprehensive data are expected in the coming months. For now, limited data from the summer of 2019, combined with data of number of trips from e-scooter companies, were used to create a (careful) estimate of accident risk for e-scooters in Oslo. This estimate is about 89 accidents per million kilometres used. In contrasts, bikes have around 8 accidents per million kilometres. As e-scooters are quite new to Norway, and findings from e.g. the US have found that accident risk decreased with experiences, it is likely that the accident risk will decrease after a while."

PT: "Sidewalk running exists and is a problem. However, it is not frequent in Lisbon, as the pavement is made of small limestone cobblestones; it is bumpy and too irregular for comfortable ride by E-scooters. On-going surveys may be looking at some of the self-reported related questions above, but no results are available yet. From personal observation, in Lisbon helmet use by shared bicycles and E-scooters users is only marginal."

Thank you for your completing the questionnaire. Please feel free to add links to relevant information, documents/reports (preferably in English), or additional personal observations/concerns, etc. in the box below.

AT: "A KFV report on the subject is currently under preparation (English executive summary)."

NO: "All the self-report data mentioned in the survey is based on two different reports done by the Institute of Transport Economics. The full-length reports are in Norwegian, but both have summaries in English. Kickstart for micromobility (first report, data collected in early summer 2019) https://www.toi.no/publications/kickstarting-micromobility-a-pilot-study-on-e-scooters-article35781-29.html Shared e-scooters in Oslo (second report, data collected in late summer/fall 2019) https://www.toi.no/publications/shared-e-scooters-in-oslo-article36028-29.html."