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Road safety perceptions of children and parents

Explorative study among children and parents living in Belgium

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Ce rapport est également disponible en français.

Dit rapport is eveneens beschikbaar in het Nederlands.

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Summary

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Belgium, as well as all other European member states, aims at having zero fatalities on the road by 2050. Since the early 1990s, road fatalities among children (defined in this report as persons younger than 15 years (0-14)) decreased sharply in Belgium. Yet, 18 children died in traffic in 2021, which represents 3.5% of the total number of traffic fatalities in the country (Statbel, 2021). Traffic systems are not always designed in a manner, which allows safe participation of children in traffic ('child norms'). Furthermore, children need to be protected and this is still more true when they take part to the traffic. As road users, children are more vulnerable than other road users in many ways (ETSC, 2018). The safe system approach is of particular importance when considering children and their safety in traffic. This approach has the merit of integrating the different elements of the traffic system while taking into account the human vulnerability and fallibility of road users (European Commission, 2018b; SWOV, 2021). While growing up, children develop the cognitive and physical skills necessary to travel safely in traffic. Moreover, their small size makes them less visible than other road users and they are less experienced (ETSC, 2022). They can easily become innocent victims in collisions, due to poor infrastructure, inappropriate speed limits or the unsafe traffic behaviour of others such as speeding or drink driving etc. Furthermore, when travelling in a car, their body shape requires the correct use of specific child restraint systems and in general children travel more often as pedestrians or cyclists (vulnerable road users) compared with other age groups. These different factors put them at higher risk of being victim of traffic accidents. Adults, and in particular parents or carers, have a key role in children's participation in traffic. They also make an important contribution to traffic education by teaching children the knowledge and skills they need (European Commission, 2023a).

Methodology

This explorative study aims to provide an in-depth insight into the road safety situation of children under the age of 15 years in Belgium. The focus is on the children's behaviours and children's and parents' perception of road safety. By means of an online panel survey, parents and children were asked to fill in questionnaire online. The questionnaire addressed the following topics:

Topics answered by the children (10-14y):

- transport modes,
- commuting to school,
- perceived safety feeling related to transport mode,
- self-declared traffic behaviour,
- risk perception of certain traffic behaviour, and
- acceptability of certain traffic behaviour.

Topics answered by the parents of children (0-14y):

- perceptions of the traffic safety in their neighbourhood,
- support for policy measures,
- opinions about traffic education at school, and
- needs for information about the correct use of child seats.

Part of the questions were answered by the parent and if they child was 10-14 years old, the child also answered some part of the questions him/herself. The fieldwork was conducted under the supervision of Vias institute between 17.07.2022 and 02.08.2022. The sampling unit for this study was the child which was sampled based Belgium population statistics for gender, age, and regional distribution of children under the age of 15 years. After data cleaning the final sample consists of n=1669 respondents. The statistical packages SPSS 26.0 (IBM Corp., 2019) and R (R Core Team, 2020) were used for the data processing and data analysis.

Major findings from the study

Children:

- In Belgium, the most frequently used transport modes by children aged 10-14 years, are walking, being a passenger in the car, cycling and using public transport.
- Most children are accompanied by an adult from the household when they go to school.

- Children aged 10-14 years feel the safest while they are a passenger in a car, followed by public transport and by walking. They feel less safe when using a skateboard, other transport modes or being a passenger on a bicycle.
- Most children report a very safe behaviour in traffic. The most frequently reported unsafe cycling behaviour is 'cycling without a helmet'. For pedestrians this is 'walking down the streets while using a mobile phone'. Compared to adults (ESRA2; Meesmann et al., 2022; Schinckus et al., 2021) children tend to perform better for the use of bicycle helmets but tend to report more use of the mobile phone while cycling than adults.
- Children perceive 'crossing the road when a traffic light is red', 'not using bicycle lights' or 'reflective equipment as a pedestrian' to be the riskiest cycling and pedestrian behaviours in this survey. Using a mobile phone' is perceived to be risky while cycling for more than half of the children but for less than half of the children while being a pedestrian.
- Children's acceptability of the unsafe cycling behaviours is rather low. Children rather accept unsafe pedestrian behaviour compared to unsafe cycling behaviour.
- Clear age differences are observed in this study for almost all topics assess. Older children tend to use more often public transport and report more risky traffic behaviour and more opinions in favour of risky traffic behaviour than younger children.
- Very few differences according to gender are observed in this study, which is striking, as for adults, men tend to report systematically more risky traffic behaviour and more opinions in favour of risky traffic behaviour compared to women.
- Only a few region differences are observed among the children. Those are mainly related to the mobility behaviour of the child (e.g., use of public transport highest in Brussels, cycling most often reported in Flanders).

Parents:

- Parents perceive the accessibility of their neighbourhood mainly as positive, with margin for improvement for the ways to school and places where children can walk alone.
- Parents express major safety concerns about streets which are not safe for children to play, cars which usually do not drive slowly and cycling which is perceived dangerous because of the traffic. They are also less satisfied with the cycling infrastructure compared to the walking infrastructure.
- More than seven out of ten parents support a legal regulation requiring: 'all new cars to have a seatbelt reminder system for the front and back seats[1]', 'cyclists under the age of 12 to wear a helmet', and 'cyclist to wear reflective material when cycling in the dark'. The least supported measure is 'forbidding the use of headphones (or earbuds) while walking on the streets'.
- Only six out of ten parents feel that 'the child masters traffic rules' and less than half of the parents think that 'the child knows well about the danger of blind spots'.
- More than half of the parents of small children (<135cm), indicate a need for information about the correct use of child seats.
- The support of the parents for policy measures tends to increase with age, which is a general pattern which can also be observed among the general adult population (ESRA2; Meesmann et al., 2022; Schinckus et al., 2021).
- Mothers are more critical about their neighbourhood and traffic education at school, they express more need for information on the correct use of child seats and are more in favour of policy measures with respect to children's road safety[2], than fathers.
- The study shows a clear pattern with respect to regional differences, which is for most assessed topics at the detriment of parents living in Wallonia. Most striking differences can be seen in the perception of the neighbourhood (accessibility, safety and existence of walking and cycling infrastructure) and the opinions about traffic education at schools. For many policy measures the support is higher among parents from Wallonia compared to parents from Brussels and Flanders.

General recommendations to improve children's road safety

Traffic systems must be designed in a way that children can participate in traffic safely. Children per se need to be protected and this protection needs to be reinforced when they take part to the traffic. Therefore, the Belgium federal as well as regional traffic safety plans highlight the importance of a "child norm" approach, which aims at creating an environment in which children can participate in traffic safely. Belgium as well as

[1] which is already a compulsory measure for new cars

[2] Studies on the general adult population also show that female road users are more in favour of policy measures than male road users (Schinckus et al., 2021; Van den Berghe et al., 2022).

the other European member states follow the Safe system approach to achieve the common goal of Vision Zero. In line with this approach, the following measures to improve children's road safety are proposed in the report 'Road Safety Thematic Report – Children' by the European commission (2023a, p.4):

- ensuring that adequate and safe infrastructure is provided for children to walk or cycle safely to and from school, play areas, etc.,
- limiting the speed of motorized traffic when vulnerable road users and motorised traffic mix (e.g., 30 km/h in urban areas or school streets, which are closed to most motorized traffic at the beginning or end of school days),
- further development and mandatory equipment of new cars with systems aiming at protecting vulnerable road users (e.g., Intelligent Speed Assistance (ISA), Autonomous Emergency Braking (AEB) with pedestrian and cyclist detection, systems to reduce the blind spot of trucks),
- promoting the (correct) use of protective equipment such as bicycle helmets and child restraint systems,
- consistent enforcement of traffic laws and adequate sanctions,
- education and training of children as well as their parents and carers, to improve safe participation in traffic,
- awareness-raising of other road users regarding the presence and limitations of children in traffic,
- participatory approach involving children in the development of a safe traffic system and measures.

1 Introduction

Vision Zero and the Safe System approach

Belgium, as well as all other European member states, aims at having zero fatalities on the road by 2050 (All For Zero, 2023; Transport White Paper; Roadmap to a Single European Transport Area – towards a competitive and resource-efficient transport system; European Commission, 2018b, 2023b). As an intermediate goal, the European Commission aims to halve road casualties and serious road injuries between 2021 and 2030 (European Commission, 2018a). To achieve this goal, the European Member states can use the Safe System approach, which integrates the different elements of the traffic system and takes human vulnerability and fallibility into account (SWOV, 2021). The Safe System approach is a holistic view on road safety. The entire transport system is designed to protect people from death and serious injury. If one part of the system fails, other parts are still able to protect those involved. Therefore, all parts of the system must improve (roads, speeds, vehicles, and behaviour of road users) to achieve the Vision Zero aim (All For Zero, 2023; European Commission, 2018b). This approach is particularly important when the focus is on children's road safety.

What is a child?

Based on scientific literature (e.g., European Commission, 2023a) we defined a child as a person younger than 15 years (0 -14) as it covers the different development phases between birth and puberty. Also, from the age of 15, adolescents are able to assume their role as road users and take part in traffic more independently (ETSC, 2018). Knowing that physical and cognitive skills develop with age, children are a nonhomogeneous group and major differences are found in children's skills as road users and in their transport choices (DaCoTa, 2012).

Children and road safety

Children are vulnerable road users which need to be protected (ETSC, 2018), which underlines the importance of the Safe System approach. Children are still developing the cognitive and physical skills necessary to travel safely in traffic. Because of their small size, children are less visible than other road users and they are less experienced. They are less aware of the dangers and more often take risks unintentionally and therefore more easily become victims in accidents (ETSC, 2022). Compared to other age groups, children are also more likely to be pedestrians and cyclists, which are considered as the two most vulnerable road user groups (European Commission, 2021). Although the risk of death is higher among pedestrians and cyclists at all ages, children generally have a lower risk of dying in traffic than road users in other age groups. The lowest risk is for children travelling as a car passenger or by bus (Pelssers, 2020). However, it should be noted that, overall, more (fatal) accidents with children occur by car.

Children's specific morphology requires the correct use of adapted restraint systems (Belgian regulation: until they reach 135cm). For transporting a child in a car, various restraint systems have been developed that take the specific morphology of children into account. In cars, these systems vary between a carry cot, a rear-facing baby seat, a child seat with its own straps or safety cushion, and a booster cushion - with or without back support - using the seat belt available in the car (Schoeters & Lequeux, 2018). There are also various ways of transporting a child as a passenger on a bicycle. These vary from a child's seat that is installed on the bicycle itself to a bicycle trailer, cargo bike or trail-a-bike (Vias institute, 2022).

Adults, and in particular parents or carers, have a key role in children's participation in traffic: they are involved in choosing the mode of transport, in deciding whether or not to accompany the child and in providing reassurance, they serve as a role model for traffic behaviour and they also play an important role in educating children about road safety by teaching them the knowledge and skills which are needed to participate in traffic safely (European Commission, 2023a). Moreover, the safety of children lies in the hand of the whole society (ETSC, 2018). The Safe System approach aims to increase the road safety in general and can help to protect children (European Commission, 2018b).

Extent of the problem in Belgium

In Belgium, the number of 0-14-year-old road fatalities has decreased sharply since the early 1990s. In 2021, there were 18 traffic fatalities between the ages of 0 and 14, representing 3.5% of the total number of traffic fatalities in Belgium. In 2011, these were still 41 traffic fatalities among children aged 0 to 14 years, representing 4.6% of the total number of traffic fatalities (Statbel, 2021).

The number of road victims under 15 years old increases with age, and there are slightly more male than female road victims. Most of the traffic victims younger than 15 years have a traffic accident as a passenger in a car, followed by the bicycle and on foot. Most young road traffic victims have an accident during peak hours on weekdays (7-8 am and 3-5 pm): hours when children go to school or return from school. In addition, the majority of 0–14-year-old traffic victims occur on roads within built-up areas (Statbel, 2021; Vias institute, 2022).

Child restraint systems are often used in an incorrect way[3]. Only for 26% of children in Belgium cars a child restraint system is used correctly and adapted to the child's height or weight. In the case of 56% of the children an appropriate system is used but used incorrectly. Incorrect use can mean that the seat is installed incorrectly in the car (wrong belt path, wrong direction of travel, partial attachment of ISOFIX-hooks...) or that the child is installed incorrectly in the seat (slack in the belts, belt under the arm...). For the other 18% of the children a child seat is used which is not adapted to the height or weight of the child or a child seat system which is not fastened at all (Lequeux & Pelssers, 2018).

When compared to the other European countries, Belgium is just below the European average for the number of road fatalities between 0 and 14 years (Belgium: 5.2 and EU27 6.8 fatalities among children per million inhabitants 0-14 years) (European Commission, 2022).

Aim of this study

While accident statistics can provide insights on the size of the problem, little is known about the motivational factors beyond the risk behaviour which can lead to a victimisation of children in traffic.

In Belgium there is a long tradition of assessing motivational factors such as social norms, attitudes, risk perception and other behaviour believes (Ajzen, 1991) among adults (e.g., Cestac & Delhomme, 2012; Meesmann et al., 2022; Meesmann & Schoeters, 2016; Schinckus et al., 2021), but little is known about the specific behaviour and related believes (motivational factors) of children and their parents. Moreover, little is known about mobility patterns of children in Belgium, and little is known about the parents' need in supporting their child's safe traffic participation.

This study aims at providing deeper insights into these topics. It is a follow up project of the briefing 'children and road safety'. This briefing was based on an international literature review and Belgian accident statistics (Vias institute, 2022). In the current explorative study, the focus is on children's and parents' perception of road safety and their behaviour believes. Furthermore, it assesses children's mobility behaviour and children's road safety behaviour.

Related to the children we explored following questions:

- Which transport mode do they use in general and how do they commute to school?
- How safe do they perceive their own participation in traffic?
- Which type of safe- and unsafe traffic behaviour are they engaged in?
- How risky do they perceive certain traffic behaviours?
- How acceptable do they perceive these traffic behaviours?

Related to the parents we explored following questions:

- How safe do parents perceive the road traffic situation of their neighbourhood?
- Which policy measures do they support to improve children's road safety?
- What is their opinion about traffic education at school?
- Do they need information about the correct use of child seats?

Concerning children's traffic behaviours, this study includes legal and illegal behaviours which might have an impact on traffic safety. The study does not aim to evaluate the risk to which children may be exposed by engaging in certain behaviours, but to support the public debate by measuring the prevalence and perceptions of these behaviours among children.

[3] Since 2006, the Belgian legislation makes it compulsory to use a suitable child restraint system for children under 18 years of age and less than 135 cm - https://www.code-de-la-route.be/fr/reglementation/1975120109~hra8v386pu#cvd1rs4jws.

2 Methodology

2.1 Study design, scope of the questionnaire and fieldwork

Study design and scope of the questionnaire

This explorative study aims to provide an in-depth insight into the road safety situation of children under the age of 15 years in Belgium. It is a follow up project of the briefing 'children and road safety' which was based on an international literature review and Belgian accident statistics (Vias institute, 2022). The focus in the present study is on the children's behaviours and children's and parents' perception of road safety.

By means of an online panel survey, parents and children were asked to fill in questionnaire online. The questionnaire addressed the following topics:

Topics answered by the children (10-14y):

- transport modes,
- commuting to school,
- perceived safety feeling related to transport mode,
- self-declared traffic behaviour,
- risk perception of certain traffic behaviour, and
- acceptability of certain traffic behaviour.

Topics answered by the parents of children (0-14y):

- perceptions of the traffic safety in their neighbourhood,
- support for policy measures,
- opinions about traffic education at school, and
- needs for information about the correct use of child seats.

Some of the questions were inspired by the ESRA2[4] questionnaire (Schinckus et al., 2021; Meesmann et al., 2022).

The selected items with respect to self-declared traffic behaviours of the child and related risk perceptions and acceptability of these behaviours mainly focussed on cycling and pedestrian behaviours. Some of the items describe illegal behaviours and others legal behaviours. According to the Belgian Traffic Code the following assessed behaviour items are infractions[5]:

- Travel as a car passenger without wearing the seatbelt (art. 35.1.1)
- Cycle while talking on a hand-held mobile phone (art. 8.4)
- Cycle while reading or texting a message or check social media/news (art. 8.4)
- Cross the road with a bicycle when a traffic light is red (art. 61.1, 1°)
- Cycle on the road next to the cycle lane (art. 9.1.2, 1°, exceptions in art. 9.1.2, 3° and 5°)
- Cycle in the dark without wearing a white/ yellow light in front and a red light behind (art. 82.1.1)
- Cross the road as a pedestrian when a pedestrian light is red (art. 63.1.2)
- Cross the road at places other than at a nearby pedestrian crossing (art. 42.4.1)

The survey also assessed behaviours, which are not infractions, but are considered to have a potential impact on the traffic safety of children, due to different reasons. Those reasons are for example:

- Children are less visible than other road users, due to their small size (e.g., ETSC, 2022; European Commission, 2023a). Therefore, the use of reflective material as pedestrian and cyclists is considered to enhance traffic safety.
- Key skills for safe traffic participation are concentration, risk perception, and the ability to process a large amount of information in a short time. Children are still developing these skills. They are partly

[4] ESRA stands for 'E-Survey on Road users' Attitudes'. It is a global initiative coordinated by Vias institute. ESRA2 is the second edition of this survey which was conducted in Belgium in 2018. For more information see references or www.esranet.eu.
[5] NL: Koninklijk besluit van 1 december 1975 houdende algemeen reglement op de politie van het wegverkeer en van het gebruik van de openbare weg; FR: Arrêté royal du 1er décembre 1975 portant règlement général sur la police de la circulation routière et de l'usage de la voie publique

depending on the age of the child but also on the opportunity to practice them while moving in traffic. Only around the age of 12 years they can understand complex traffic situation (DaCoTa, 2012; ETSC, 2022; e.g., European Commission, 2023a). Therefore, additional distracting factors such as the use of a mobile phone or headsets might potentially have an impact on their road safety.

These topics are often part of public debate in which additional measures are being discussed to improve the road safety situation of children. Therefore, these topics were included in this survey. The aim of the current study is to assess the prevalence of these behaviours among children and the related perceptions, and through that support the public debate on these topics.

Furthermore, parents are asked about their personal opinions on additional measures to improve children's road safety. We also asked them about their personal perceptions of their neighbourhood, their personal opinions on the traffic education of their child and their needs for further information on the correct use of child seats.

The median length to fill in the questionnaire was 10.7 minutes. The questionnaire was provided in Dutch and in French. The questionnaire was filled in by the parents of children aged 0-14 years. When the child was 10-14 years old, the child filled in him/herself the questions related to his/her behaviours and perceptions. If the physical or mental condition of the child aged 10-14 years did not allow answer the questions, the parents provided the answers. The questionnaire also included questions which were asked to the parents about their children aged 0-9 years, but these questions were not taken into account in this report due to doubts on the quality of this information (for more information see section 3.3). The questionnaire was filled in for one child per family. The full version of the questionnaire with all detailed information can be found in Attachment 1.

Sampling and fieldwork

The aim of this study was to collect information about a representative sample of children aged 0-14 year living in Belgium, through the parents and children aged 10-14 years, who answered the questionnaire. Therefore, the sampling unit in this survey is the child and not the parent. Representativity was defined as interlaced quota of the child's gender (male, female), age (per year) and region (Wallonia, Flanders, Brussels).

The fieldwork was subcontracted to a market research agency. This agency collaborated for this study with a Belgium CINT panel. The market research agency approached parents (in this case: panel members) with children aged 0-14 years. With respect to the parents, the aim was to have an equal gender distribution of the parents to limit the effect of a gender bias. The regional spread of the parents was in line with the predefined quota for the children. Based on the predefined quota for the children, the market research agency 'randomly' defined for which child the parent should fill in the questionnaire.

In the final data file, in which the child is the sampling unit, small corrections with respect to the national representativity of the children sample were made by using weighting factors. Those weighting factors are based on Statbel population statistics (Statbel, 2021). Details on the sample characteristics can be found in section 2.3.

The fieldwork of this online survey was conducted under the supervision of Vias institute between 17.07.2022 and 02.08.2022. A dataset of n=2007 respondents was provided to Vias institute.

2.2 Data processing and quality control

Data cleaning

The dataset of the market research agency had to respect a predefined template. Vias institute checked the quality of the data and carried out a sequential data cleaning:

1. removing inconsistent answers based on the age, school year and height of the child, and the transport modes used by the child (275 cases deleted),
2. removing straightliners (respondents who give the same answers for 80% of the items on questions 25 and 26 (see Attachment 1; 21 cases deleted),
3. checking for the length of the interview (>24 hours; 1 case deleted).

From the original dataset provided by the market research agencies (n=2007), 297 respondents were removed. Children aged 10-14 years whose answers were given by the parent as their own physical or mental condition enabled answering the questions (n=41 out of 716) were also excluded from the analysis. The final sample consists of n=1669 respondents.

Weighting

A weighting procedure was applied in the analyses. This weighting is meant to correct small deviations in the sample with respect to the distribution of the population of children aged 0-14 living in Belgium: child's gender (male, female), age (per year) and region (Wallonia, Flanders, Brussels). Details on the distribution of the reached population, the intended sample and the applied weighting factors by region, gender, and age group of the children, can be found in Attachment 2. The weighting factors ranged between 0.69 and 1.26.

Data processing

In view of facilitating analysis and dissemination of the results, for some questions the original answer categories (mainly 5-point and 6-point scales) were dichotomized (i.e., grouping answers into two groups and creating binary variables). The dichotomizations and reference categories for each question are indicated in the according figures and tables presenting the results.

Data analysis

The Chi-square Test of Independence was used to assess if the dichotomized variables depend significantly on the region, the gender and the age group. Pairwise comparisons were used to identify the pairs of regions that differ significantly from each other. ANOVA was used for the comparison of the perceived safety feeling scores. A significant level of 5% was considered. The statistical packages SPSS 26.0 (IBM Corp., 2019) and R (R Core Team, 2020) were used for the data processing and data analysis.

2.3 Sample description (unweighted)

As stated in section 2.1 the sampling unit in this study is the child, and the aim was to get information about a representative sample of the children population aged 0-14 year in Belgium through the parents and children aged 0-14 years, who answered the questionnaire. Table 1 shows the unweighted distribution of the (child) sample after data cleaning. The sample is presented by age group, region, and gender. In total, 1669 respondents were included during the analysis; 202 respondents from Brussels (capital region of Brussels), 917 from Flanders and 550 from Wallonia; 875 male respondents and 794 female respondents.

Table 1 Sample size, gender, and age distribution of the children by region (unweighted).

Age group		0-2y	3-5y	6-9y	10-11y	12-14y	Total number
Brussels	Male	18	21	30	17	28	114
	Female	16	19	23	13	17	88
	Total	34	40	53	30	45	202
Flanders	Male	68	85	136	74	112	475
	Female	68	82	125	65	102	442
	Total	136	167	261	139	214	917
Wallonia	Male	42	55	81	40	68	286
	Female	40	48	72	44	60	264
	Total	82	103	153	84	128	550
Total	Male	128	161	247	131	208	875
	Female	124	149	220	122	179	794
Sample size*		252	310	467	253	387	1669

*NOTES: * number of children in each age group - unweighted.*

Notice that 1,669 parents answered the questions on their child's environment and perceptions and opinions on child's road safety. Sociodemographic information about parents is presented in section 3.2.1.

3 Results

The survey results are presented in two sections: (1) the answer of the children (10-14y) and (2) the answers of the parents of children (0-14y). Focus is on the key results per survey group. More details on the age, gender, and regional differences can be found in Attachment 3 and Attachment 4. Unless explicitly stated, only results with statistically significant differences are presented.

3.1 Children (10-14y)

This section summarizes the results on children aged 10-14 years. The results are presented for the whole weighted sample and divided by age groups (10-11y old; 12-14y old). Statistical comparisons are present with respect to age, gender, and regional differences of the child. The first section shows the sociodemographic characteristics of the children-sample. The following sections address different topics about how children perceive their own traffic safety situation.

3.1.1 Sociodemographic information of the children (10-14y)

Table 2 shows the weighted sociodemographic information of the children who participated in the survey. This information was provided by the parents.

Table 2 Sociodemographic characteristics of the children aged 10-14 years (weighted percentages).

	10-11y	12-14y	Total
Gender			
Male	51.2%	51.1%	51.1%
Female	48.8%	48.9%	48.9%
Region			
Brussels	11.5%	10.9%	11.1%
Flanders	56.1%	56.2%	56.2%
Wallonia	32.4%	32.9%	32.7%
School type in the school year 2021-2022[6]			
Primary	87.2%	26.8%	51.2%
Secondary	7.4%	69.3%	44.3%
Other	5.3%	3.9%	4.5%
Main language talked at home			
Dutch	49.9%	52.2%	51.3%
French	43.2%	44.6%	44.0%
Other	7.0%	3.2%	4.7%
Number of children (0-17y) in the household			
1	36.8%	47.6%	43.2%
2	43.7%	39.3%	41.1%
3+	19.6%	13.1%	15.7%
Household's income			
We live comfortably on present income	25.3%	32.0%	29.3%
We cope with present income	42.3%	40.5%	41.2%
We find it difficult on present income	24.3%	23.4%	23.8%
We find it very difficult on present income	8.1%	4.1%	5.7%
Area where the family lives			
The countryside including villages	31.2%	36.4%	34.3%
The suburbs of a city	30.3%	25.9%	27.7%
A city	38.6%	37.7%	38.0%
Distance to school			
0 - 1 km	32.3%	18.7%	24.2%
1.1 - 5 km	42.8%	38.9%	40.5%
5.1+ km	24.9%	42.4%	35.3%
Sample size*	236	349	586

[6] In Belgium for most children primary school starts at the age of 6 years and lasts 6 years. Most children change to secondary school at the age of 12 years, which again lasts 6 years.

*NOTES: Questions answered by the parents; * number of children in each age group - weighted.*

Age-, gender-, and regional distribution reflect the national distribution of children between the age of 10-14 years living in Belgium (see also weighting of the data in section 2.2). Gender is almost equally spread within the sample. More than half of the children live in Flanders (56.2%), one third in Wallonia (32.7%) and one tenth in Brussels (11.1%).

In the school year 2021-2022, most children aged 10-11 years go to a primary school (87.2%), while most children aged 12-14 years go to a secondary school (69.3%). A quarter of the older children aged 12-14 years (at the time of the survey), indicate that they still go to a primary school (26.8%) in the last school year (2021-2022). Thus, in this study, the majority of the children go to a primary school (51.2%). The percentage of children who go to other types of schools (e.g., schools for special educational needs or home schooling) is low in both age groups (5.3%; 3.9%).

Half of the children speak Dutch at home as main language (51.3%), followed by French (44.0%). Only a few children in this survey, speak another main language at home (4.7%; mainly: Arabic, German and Bulgarian).

The household of most of the children consists of 1 to 2 children and only one sixth (15.7%) live in a household of 3 or more children.

Concerning the household income, the parents of most children stated that they can cope with their present income (41.2%) or live comfortable with it (29.3%). About one third of parents (29.5%) find it difficult (23.8%) or very difficult (5.7%) to cope with their present income.

The area types where the families live are almost equally spread (city: 38.0%; countryside including villages: 34.3%; suburbs of a city: 27.7%).

The distance to school differs clearly among the two age groups. The younger age group (10-11y old) live closer to school than the older age group (12-14y old). Two fifth of the older children (42.4%) live 5.1km or more from school, while this is the case for about a quarter of the younger children (24.9%).

3.1.2 Transport modes used - reported by the child

Children aged 10-14 years were asked how often they used one or more transport modes in the last month. Multiple answers were possible. Figure 1 presents the percentage of children who stated that they used a certain mode of transport at least a few times per month. The results are presented per age group. More details on age, gender, and region, as well as statistical information can be found in Table 4 in Attachment 3.

Most frequently used modes of transport for all children aged 10-14 years are: walking (89.3%) and being a passenger in the car (85.4%), followed by cycle as a cyclist (73.3%). Being a passenger on a moped/motorcycle, skateboard and other were reported by less than 20% of the children.

Age differences are rather small for self-declared use of all modes of transport except for public transport which use is more frequently reported by children aged 12-14 compared to those aged 10-11 (66.4% vs 46.0%). No clear gender pattern is observed regarding the use of the different transport modes except walking which is more frequently reported by girls than boys (92.0% vs 86.7%).

Self-declared use of the following modes of transport do not vary according to the region: walking, skating and using bike, or car as passenger and transport mode "other"). However, ninety percent of the children from Brussels (90.2%) report they use public transport at least a few times per month. It is much more compared to children living in Wallonia (57.5%) and it is almost twice as much as those who live in Flanders (52.2%). Eight out of ten Flemish children (80.2%) report riding a bike at least a few times per month while this is six out of ten for Walloon children (63.1%). Using a stand-up scooter is more frequently reported by Brussels children (45.5%) compared to Flemish children (29.0%). In Wallonia this is 35.7%, which does not differ significantly with the two other regions.

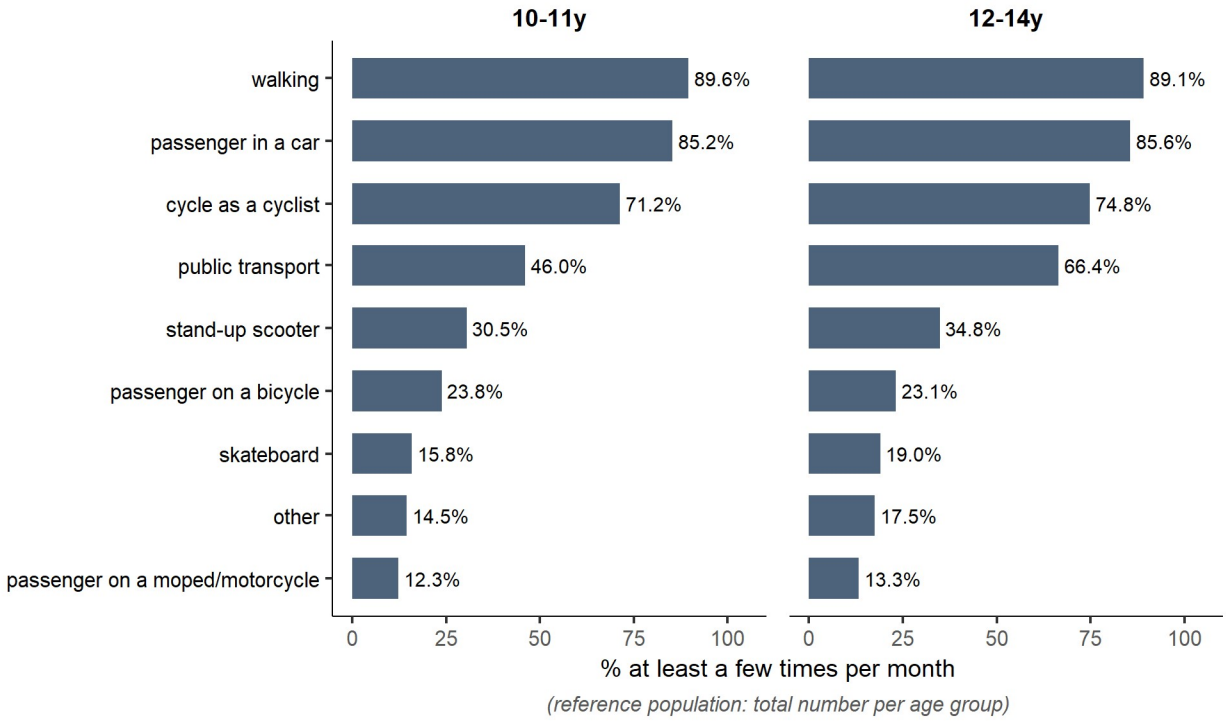

Figure 1 Use of transport modes, by age group.

3.1.3 Commuting to school - reported by the child

Children aged 10-14 years were also asked if they are usually accompanied to school and if yes, by whom. Furthermore, they were asked about their primary transport mode they use to go to school.

3.1.3.1 Accompaniment to school

Figure 2 shows the percentage of children who usually completed the route to school alone or accompanied and, in the latter case, by whom they were mostly accompanied. The results are presented per age group. More details on age, gender, and region, as well as statistical information can be found in Table 5 in Attachment 3.

About half of the children report they frequently go to school alone (45.1%). When they are not alone, children are mostly accompanied by an adult from the household (49.0%) or another child outside of the household (22.4%) and less frequently by an adult outside of the household (13.7%) or another child of the household (14.8%).

Frequently going to school alone is associated with age, as well as the person accompanying the child. Half of the children aged 12-14 (51.3%) reported they frequently go to school alone while a third of those aged 10-11 do so (35.7%). When they are not alone, six out of ten children aged 10-11 (62.6%) report they are accompanied by an adult from their household while it is reported by four out of ten children aged 12-14 (38.2%). Conversely, three times as many children aged 12-14 report being accompanied by another child who is not part of their household compared to children aged 10-11 (31.9% vs 10.6%).

Children who report they often go to school alone are quite equally distributed between boys (46.3%) and girls (43.7%). There is also no gender difference in who accompanies the children to school when they do not go alone.

There is no clear regional difference among children who report to go to school alone. However, when they do not go to school alone, Walloon children report more frequently they are accompanied by an adult from their household (58.8%) compared to Flanders (43.7%) and Flemish children report more frequently they go to school with another child who is not part of their household (26.0%) compared to Walloon children (15.5%). No statically significant difference was observed in Brussels.

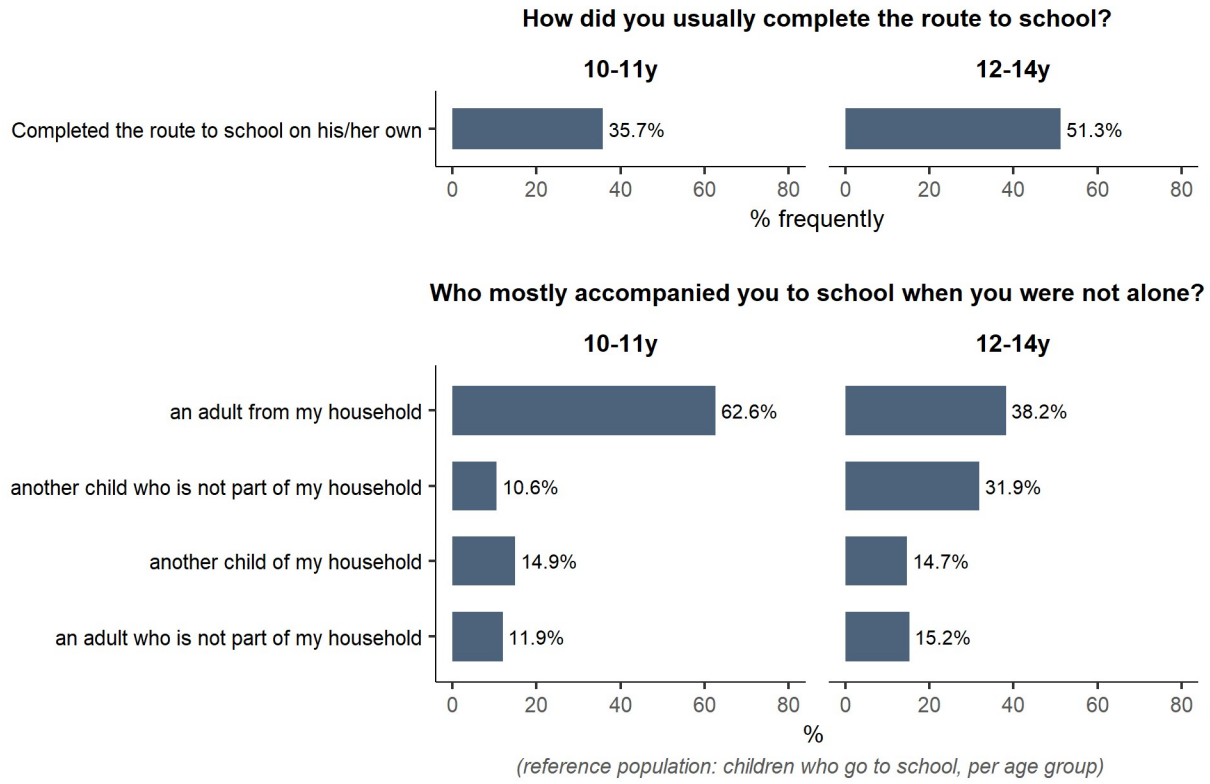

Figure 2 Accompaniment to school (2021-2022 school year), by age group.

3.1.3.2 Primary transport mode for commuting to school

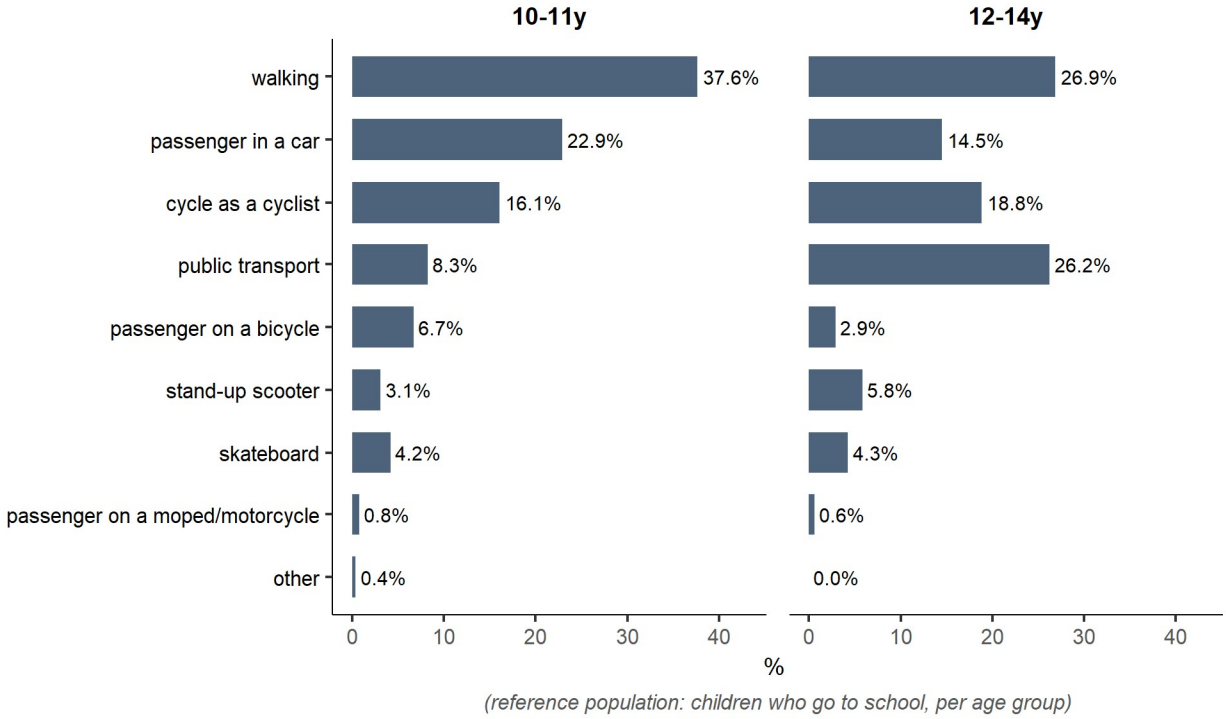

Figure 3 Primary transport mode to school (2021-2022 school year), by age group.

Figure 3 shows the percentage of children who stated that a certain mode of transport was their primary transport mode for going to school during the last school year (2021-2022). The results are presented per age

group. More details on age, gender, and region, as well as statistical information can be found in Table 6 in Attachment 3.

Most children aged 10-14 years go to school by walking (31.2%), by public transport (18.9%), as a passenger in a car (17.9%) or by cycling (17.7%). However, the primary mode of transportation which is used to go to school varies according to the age. The greatest difference is the use of public transport in which the proportion of children who report to go to school with public transport is three times higher among those aged 12-14 compared to those aged 10-11 (26.2% vs 8.3%). Conversely, going to school by car is more frequently reported by the youngest group than by the oldest one (22.9% vs 14.5%). Walking to school is also more frequently reported by the children aged 10-11 than the ones aged 12-14 (37.6% vs 26.9%).

There is no clear gender difference for the primary mode of transportation to go to school, except for skateboarding. Boys use the skateboard more often than girls (7.0% vs. 1.4%).

Regional differences are observed too (Figure 4). Brussels children (43.8%) and Walloon children (37.2%) report more frequently to walk to school compared to Flemish children (25.2%). The proportion of children who skate to school is higher in Brussels than in Wallonia (7.4% vs 1.4%). One out of four Flemish children report they bike to school (27.6%) while one out of ten do so in Brussels (10.4%) and in Wallonia only 3.3%. Using the car for going to school is more frequently reported by Walloon children (25.4%) compared to Flemish children (14.1%).

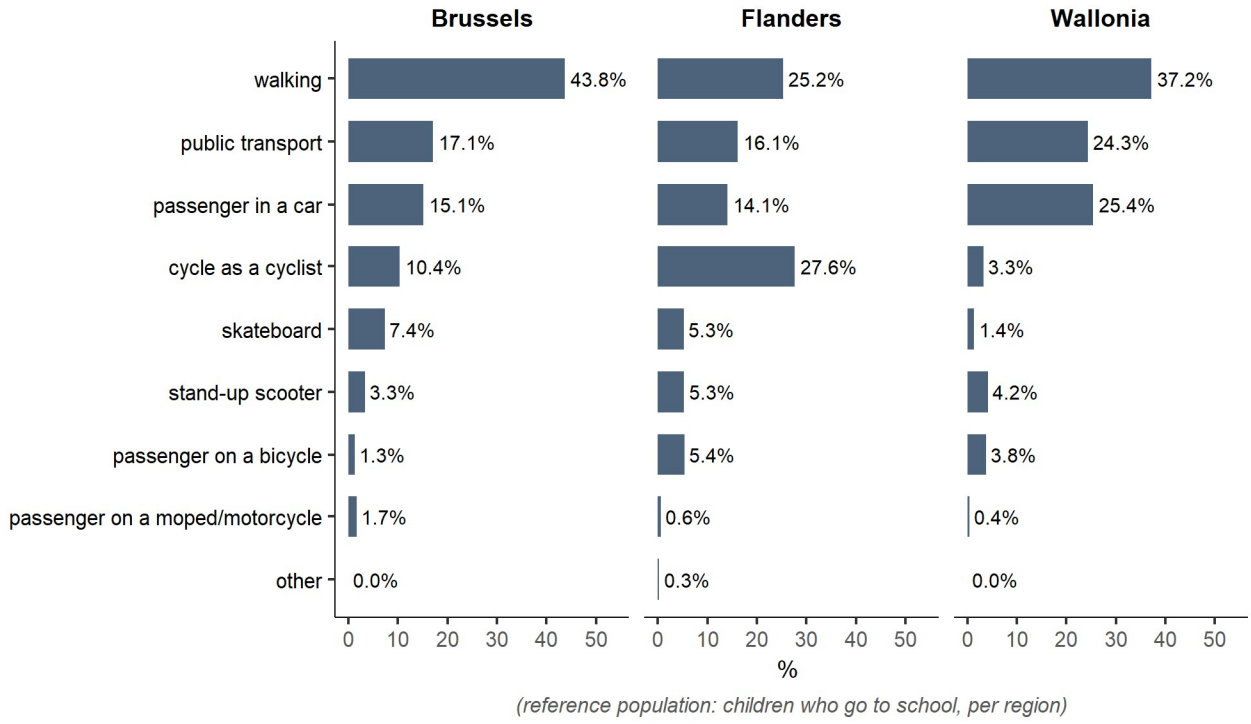

Figure 4 Primary transport mode to school (2021-2022 school year), by region.

3.1.4 Perceived safety feeling - reported by the child

Children aged 10-14 years were asked how safe they felt while using different transport modes (if they had not used a certain transport mode in the last year, they did not get the question for this transport mode). They could indicate their answer on a scale from 0-10 where 0 was 'very unsafe' and 10 'very safe'. Figure 5 shows mean scores per age group. A higher mean score is associated with a higher safety perception. More details on age, gender, and region, as well as statistical information can be found in Table 5 in Attachment 3.

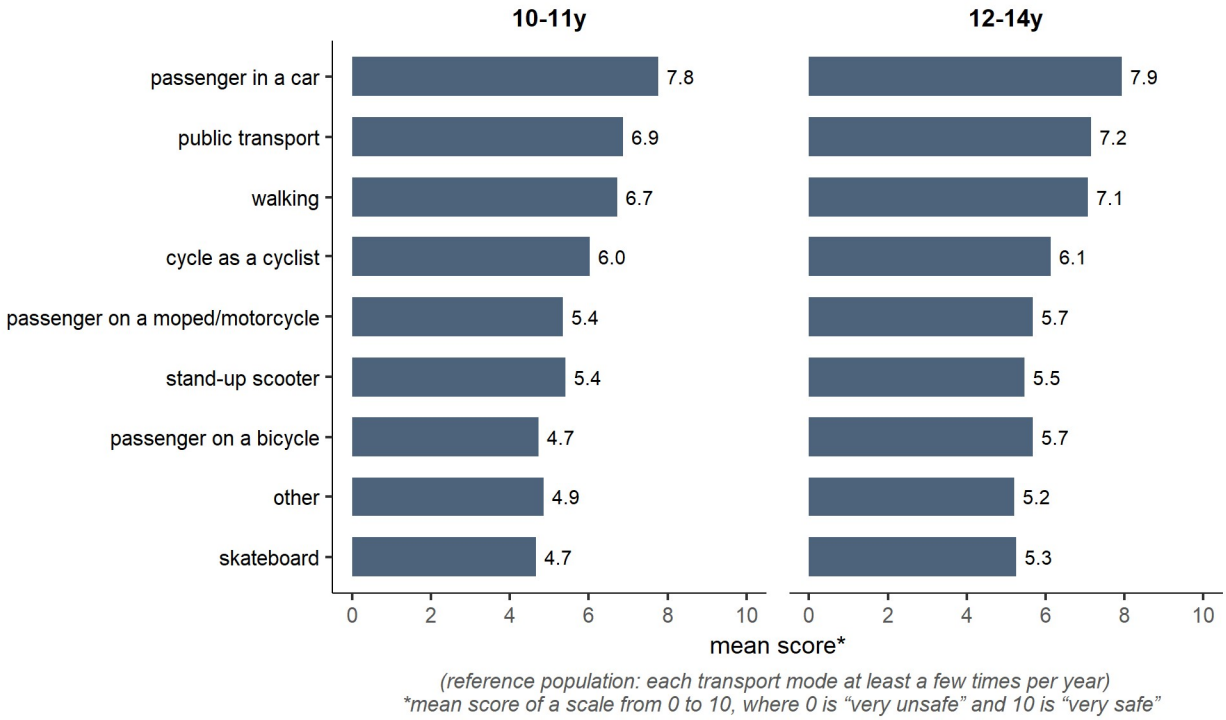

Figure 5 Perceived safety feeling, by age group.

Children aged 10-14 feel the safest while they are a car passenger (mean score of 7.9/10) followed by being a public transport passenger (7.1/10) and by walking (6.9/10). They feel least safe when using skateboard (5.0/10), other transport modes (5.1/10) or being a passenger on a bicycle (5.3/10). The perceived safety feeling does not vary according to the age for almost all modes of transport. Only among children who travel as a passenger on a bike, those aged 12-14 feel safer compared to those aged 10-11 (5.7/10 vs 4.7/10).

Whatever the mode of transport the perceived safety feeling does not vary according to gender or region of residence of the child.

3.1.5 Self-declared traffic behaviour - reported by the child

To assess the prevalence of different types of safe and unsafe behaviour in traffic, children aged 10-14 years were asked if they have not done a certain traffic behaviour in the last 30 days. Most questions referred to distracted traffic participation (i.e., use of mobile phone and headsets), (not) using protective systems (seatbelts, helmets, reflective material) and not respecting traffic rules (e.g., red lights, using the cycle line or pedestrian crossings). As explained in the methodology, this chapter includes illegal and legal traffic behaviours. The list of the items which are infractions according to the Belgian Traffic Code[7], can be found in chapter 2.1. The aim of the current study is to assess the prevalence of these behaviours among children and their perceptions, and through that, support the public debate on these topics.

3.1.5.1 Seatbelt use as a car passenger

Figure 6 shows the percentage of children who stated that they have never travelled in a car without using the seatbelt in the last 30 days. The results are presented per age group. More details on age, gender, and region, as well as statistical information can be found in Table 8 in Attachment 3.

[7] NL: Koninklijk besluit van 1 december 1975 houdende algemeen reglement op de politie van het wegverkeer en van het gebruik van de openbare weg; FR: Arrêté royal du 1er décembre 1975 portant règlement général sur la police de la circulation routière et de l'usage de la voie publique

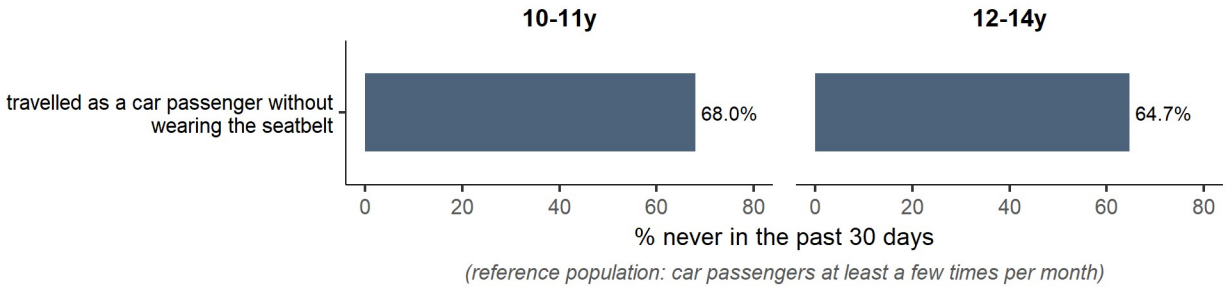

Figure 6 Self-declared traffic behaviour as a car passenger, by age group.

About two thirds of the children (66.1%) report they never travelled as car passenger without wearing the seatbelt over the last 30 days. This means that about one third of the children reported to have travelled in a car without wearing a seatbelt at least once in the last months, which is an infraction according to Belgian Traffic Code (art. 35.1.1). The driver is responsible for the passengers wearing their seatbelt. This proportion does not vary according to age. However, this behaviour is associated with gender. Girls report more frequently than boys that they never travelled as car passenger without wearing the seatbelt in the 30 days prior to the survey (70.7% vs 61.9%). No regional differences were observed.

3.1.5.2 Traffic behaviour as a cyclist

The survey included nine questions related to self-declared cycling behaviours. The results per age group are presented in Figure 7. The figure shows the percentage of children who cycle and who stated that they have not done in a certain behaviour over the last 30 days. More details on age, gender, and region, as well as statistical information can be found in Table 9 in Attachment 3.

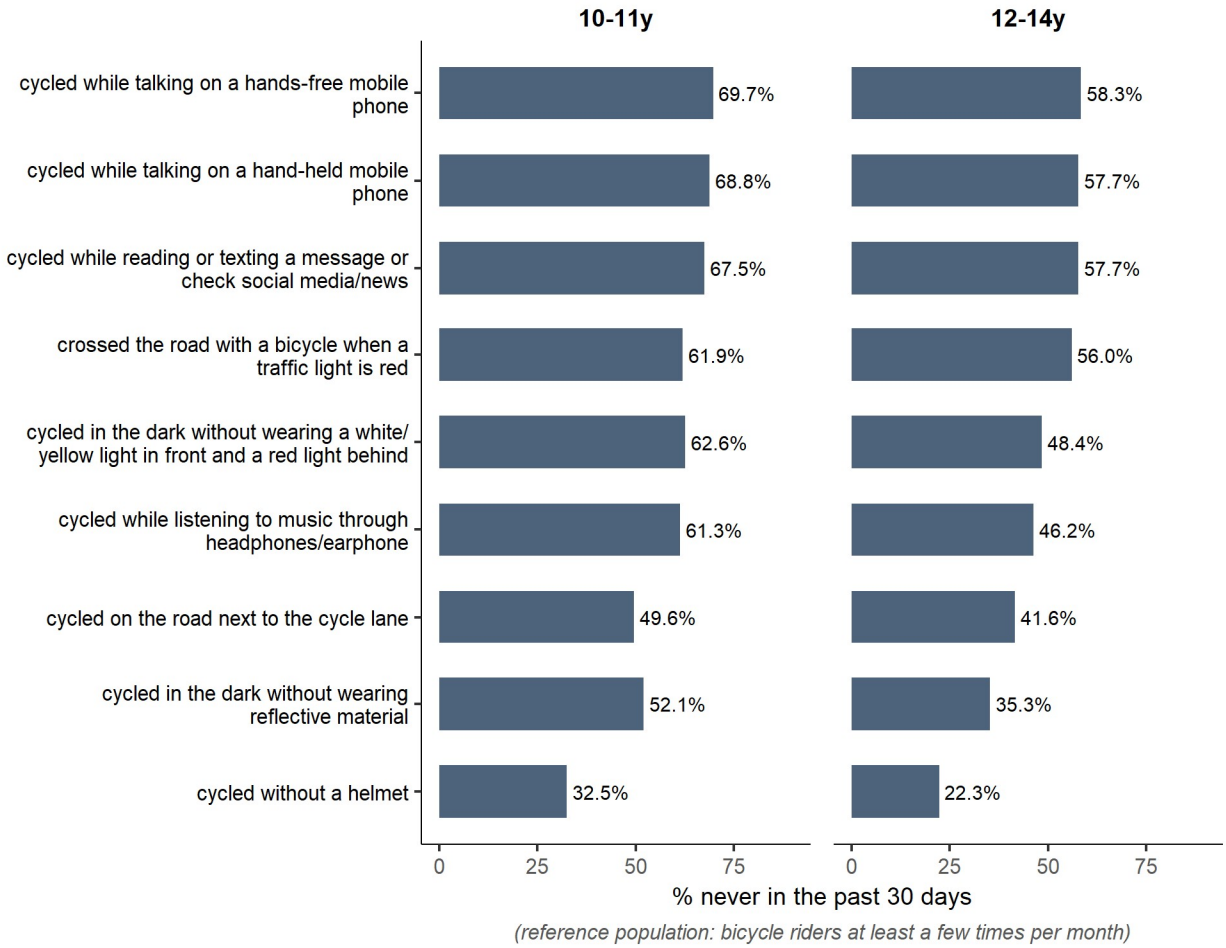

Figure 7 Self-declared traffic behaviour as a bicycle rider, by age group.

Most frequently reported cycling unsafe behaviour by all children aged 10-14 years is cycling without a helmet. 26.3% of children reported they never cycled without a helmet in the last 30 day, 41.9% never cycled in the dark without wearing reflective material and 44.7% never cycled on the road next to the cycle lane. Only the last item is an infraction according to Belgian Traffic Code (art. 9.1.2, 1°, exceptions in art. 9.1.2, 3° and 5°).

In general, unsafe traffic behaviour as a cyclist rider increase with age, except crossing the road by bike at a red light and cycling on the road next to the cycle lane where the differences are not statistically significant.

Unsafe cycling behaviour is also more frequently reported by boys than girls, except for cycling without a helmet, cycling while talking on a hands-free mobile phone and cycling while reading or texting a message or check social media/news where the results remain at the detriment of boys, but no statistically significant differences are observed. The proportion of children reporting they never adapted an unsafe traffic behaviour in the 30 days prior to the survey do not vary according to the regions.

3.1.5.3 Traffic behaviour as a pedestrian

The survey included seven questions related to self-declared behaviours of pedestrians in traffic. The results per age group are presented in Figure 8. The figure shows the percentage of child-pedestrians who stated that they have not done a certain behaviour over the last 30 days. More details on age, gender, and region, as well as statistical information can be found in Table 10 in Attachment 3.

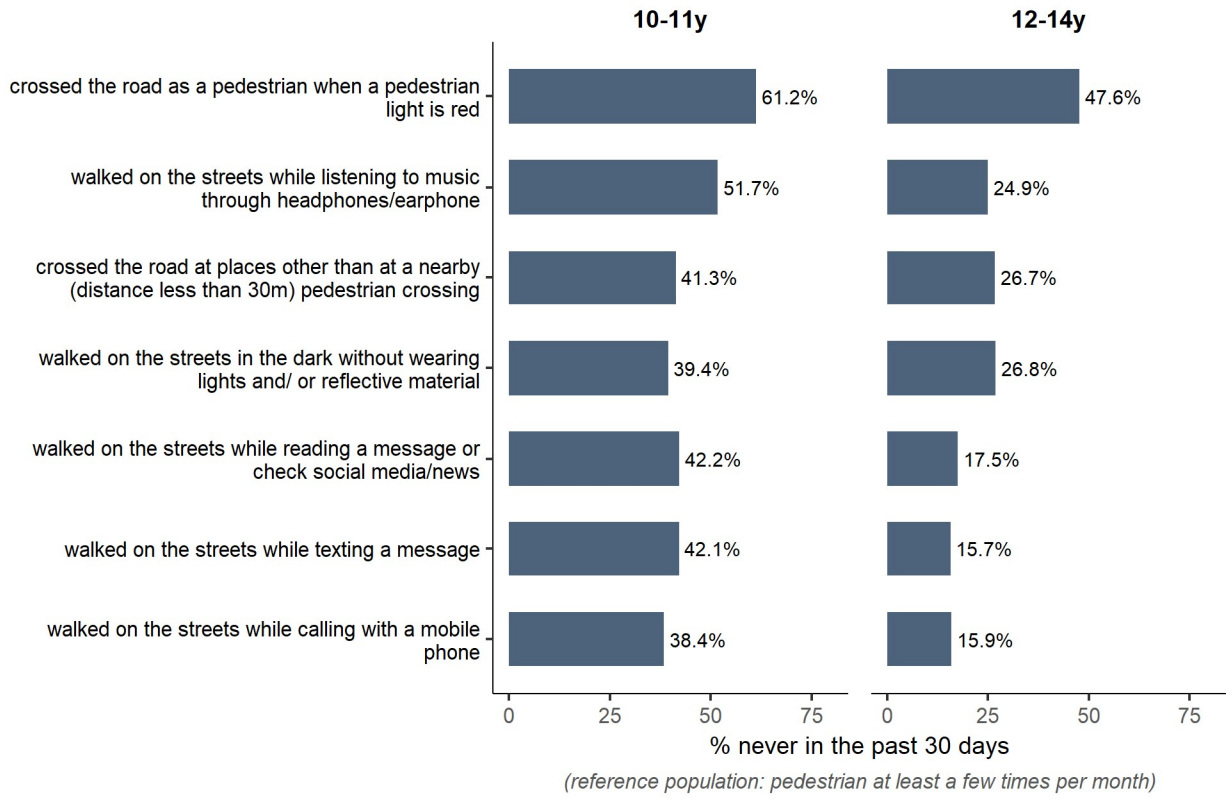

Figure 8 Self-declared traffic behaviour as a pedestrian, by age group.

In this comparison the least frequently reported pedestrian behaviour by all children aged 10-14 years is: crossing the road when a pedestrian light is red, which is also an infraction according to the Belgian Traffic Code (art. 63.1.2). Half of the children (53.1%) reported they never did it in the last 30 days.

The most frequently reported unsafe pedestrian behaviour is walking down the streets while using a mobile phone: 25.0% of children reported they never walked while calling with a mobile phone in the last 30 days; 26.4% never walked while texting a message and 27.5% never walked while reading a message or checking social media. All these behaviours are legal in Belgium.

All unsafe traffic behaviours as a pedestrian increase with age. Most often, prevalence is doubled between 10–11-year-olds and 12–14-year-olds. Regarding gender difference, only the proportion of children reporting

they never crossed the road at a red light during the last 30 days prior to the survey is higher among boys than girls (58.8% vs 47.4%). None of the safe traffic behaviours as a pedestrian varies statistically significantly by region.

3.1.6 Risk perception of certain traffic behaviours - reported by the child

To assess how children (10-14 y old) perceive the risk associated with certain traffic behaviours, they were asked how risky they think these behaviours are on a scale from 1-5 where 1 was 'low risk' and 5 'high risk'. These questions focused on the perception of traffic behaviour of cyclists and pedestrians.

3.1.6.1 Cycling

Figure 9 shows the percentage of children who stated that they think that a certain traffic behaviour as a cyclist is risky (score 4-5). The results are presented per age group. More details on age, gender, and region, as well as statistical information can be found in Table 11 in Attachment 3.

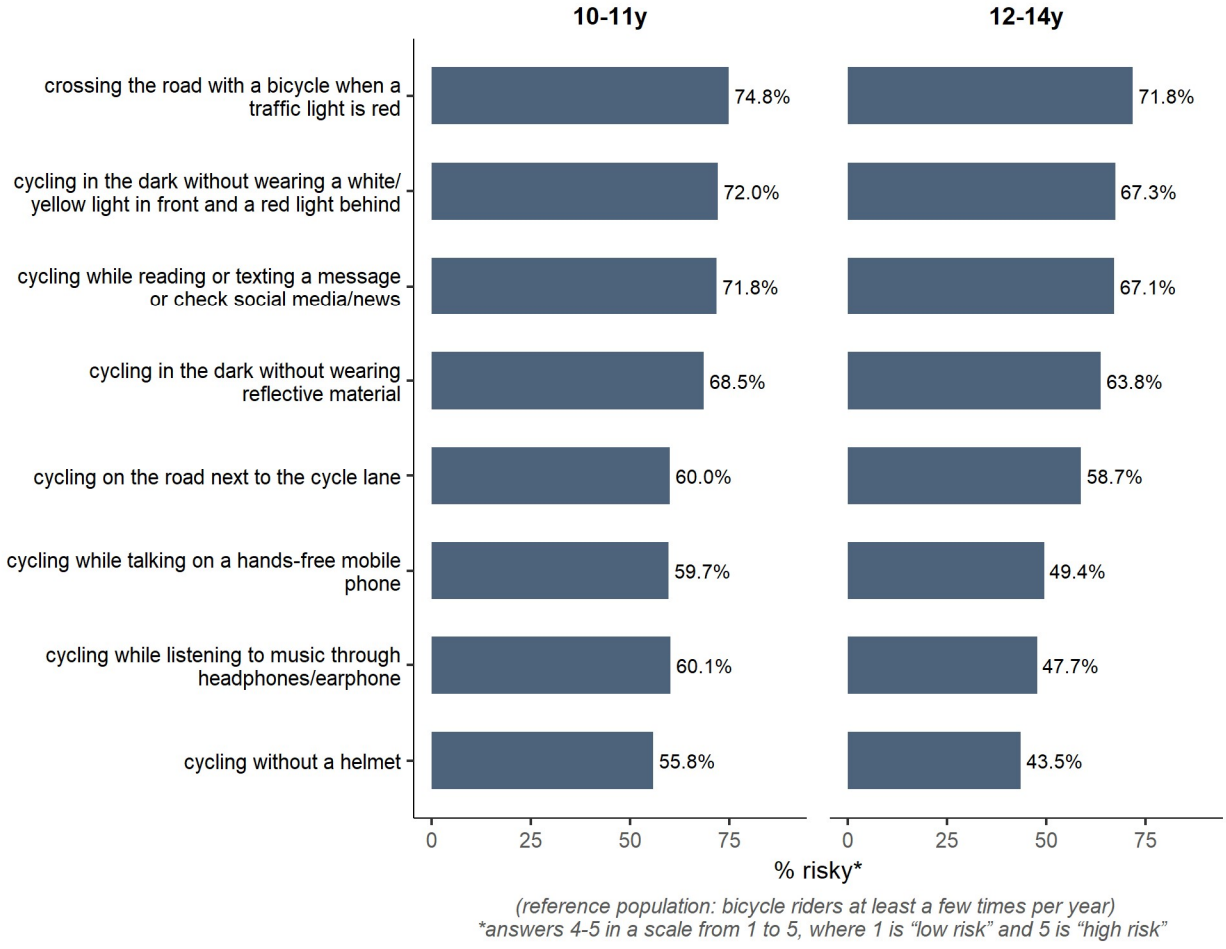

Figure 9 Risk perception as a cyclist rider, by age group.

Cycling through a red light (73.0%), cycling in the dark without front and back light equipment (69.2%) and cycling while reading or texting a message on the mobile phone (69.0%) were perceived as risky by most children (. All these cycling behaviours are infractions according to the Belgian Traffic Code (art. 61.1, 1°; art. 82.1.1; art. 8.4) and less than half of the children reported these behaviours in the last 30 days (see section 3.1.5.2.). The proportion of children reporting they perceive 'cycling without a helmet' as a risky behaviour is the lowest, but still almost half of the children do believe it is risky (48.3%). This behaviour is not an infraction according to Belgian law and only 26.3% of the children state that they have always used a cycle helmet in the last 30 days (see section 3.1.5.2.). The same ranking of items is observed among the youngest (10-11 y old) and the oldest children (12-14y old).

Age differences in risk perception are observed for three cyclists' behaviours: 'cycling without a helmet', 'cycling while listening to music' or 'while talking on a hands-free mobile phone'. The proportion of children reporting they perceive these behaviours as risky is higher among those aged 10-11 compared to the ones aged 12-14 (respectively, 55.8% vs 43.5%; 60.1% vs 47.7%; 59.7% vs 49.4%). No gender difference is found except for 'crossing the road with a bicycle when a traffic light is red' which is more frequently perceived as a risky behaviour by girls than boys (77.1% vs 69.0%). The risk perception does not vary according to the region irrespective of the cyclists' behaviour.

3.1.6.2 Walking

Figure 10 shows the percentage of children who stated that they think that a certain traffic behaviour as a pedestrian is risky (score 4-5). The results are presented per age group. More details on age, gender, and region, as well as statistical information can be found in Table 12 in Attachment 3.

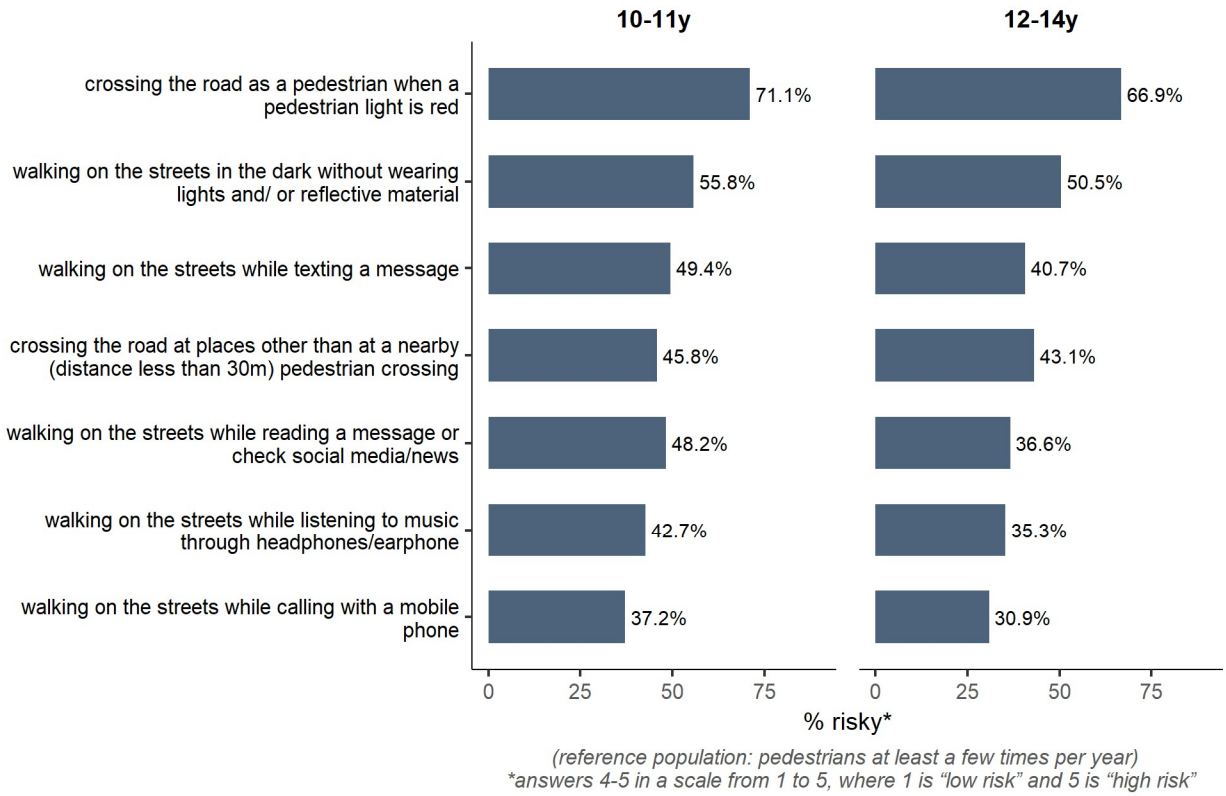

Figure 10 Risk perception as a pedestrian, by age group.

Seven out of ten children (68.6%) perceive that walking through the red light is risky. This behaviour is an infraction according to Belgian Traffic Code (art. 63.1.2) and less than half of the children reported these behaviours in the last 30 days (see section 3.1.5.3). 52.6% of the children reported walking on the streets in the dark without light or reflective equipment was risky. 'Walking down the street while calling with a mobile phone' is the traffic behaviour that children perceive as the least risky (33.4%). This behaviour is not an infraction according to Belgian law and only 25.0% of the children state they never 'called with a mobile phone while walking down the street', in the last 30 days (see section 3.1.5.3).

Globally, children's risk perception about pedestrian behaviour does not vary according to age, except for walking while reading or texting a message on a mobile phone where 10–11-year-olds are more likely to perceive this behaviour as risky than 12–14-year-olds (respectively 48.2% vs 36.6% and 49.4% vs 40.7%).

Risk perception does not vary between boys and girls. No regional differences are observed, except for crossing 'the road at places other than at a nearby pedestrian crossing'. This behaviour is less frequently perceived as risky in Flanders compared to Brussels and Wallonia (35.6% vs 52.7% and 55.6%).

3.1.7 Acceptability of certain traffic behaviour - reported by the child

To assess the acceptability of certain traffic behaviours, children (10-14 y old) were asked how acceptable they think these behaviours are. They could indicate their answer on a scale from 1-5 where 1 was 'unacceptable' and 5 'acceptable'. The focus was on traffic behaviour of cyclists and pedestrians.

3.1.7.1 Cycling

Figure 11 shows the percentage of children who stated that they think that a certain traffic behaviour as a cyclist is acceptable (score 4-5). The results are presented per age group. More details on age, gender, and region, as well as statistical information can be found in Table 13 in Attachment 3.

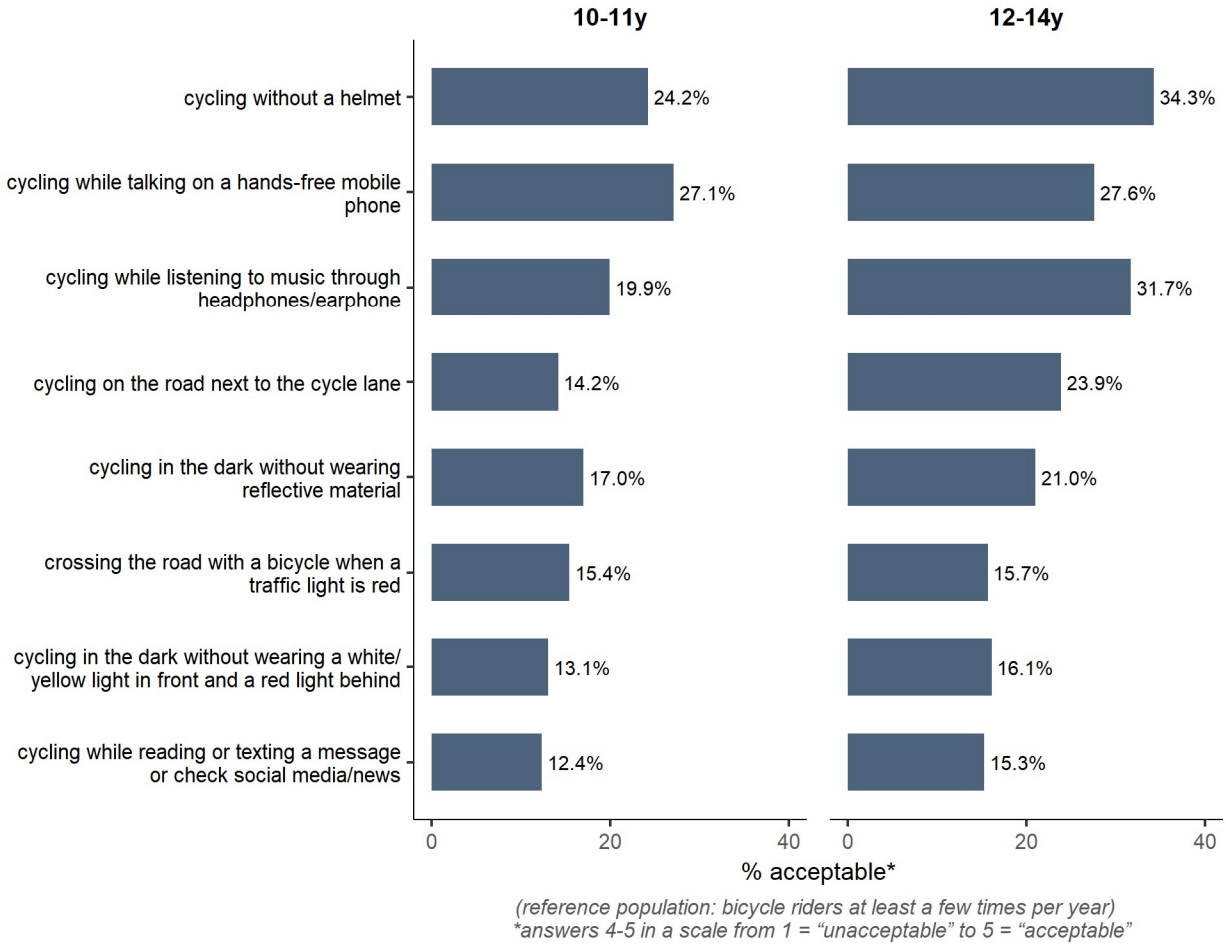

Figure 11 Acceptability of certain traffic behaviour as a cyclist rider, by age group.

In general, the results show that children's' acceptability of the selected cycling behaviours is rather low. The most frequently accepted cyclist behaviours in this comparison are 'cycling without a helmet' (30.4%), 'cycling while talking on a hands-free mobile phone' (27.4%) and 'cycling while listening to music through headphones/earphone' (27.2%). The behaviour that was perceived as the least acceptable is 'cycling while reading or texting a message or check social media/news' (14.1%), which is, in contrast to the other three cycling behaviours mentioned here, an infraction according to the Belgian Traffic Code (art. 8.4).

The acceptability of these three cyclists' traffic behaviours varies according to age. Cycling without a helmet, cycling while listening to music and cycling on the road next to the cycle lane are more frequently perceived as acceptable by children aged 12-14 compared to those aged 10-11 (respectively 34.3% vs 24.2%, 31.7% vs 19.9% and 23.9% vs 14.2%). No gender difference is observed for all cycling behaviours in this comparison. Cycling without a helmet is more frequently acceptable in Flanders (37.3%) than in Wallonia (17.8%). Cycling through a traffic red light and cycling in the dark without front and back light equipment are more accepted

in Brussels compared to Wallonia (respectively 25.9% vs 10.7% and 23.7% vs 10.0%). These results do not differ significantly with those of Flanders (27.7%).

3.1.7.2 Walking

Figure 12 shows the percentage of children who stated that they think that a certain traffic behaviour as a pedestrian is acceptable (score 4-5). The results are presented per age group. More details on age, gender, and region, as well as statistical information can be found in Table 14 in Attachment 3.

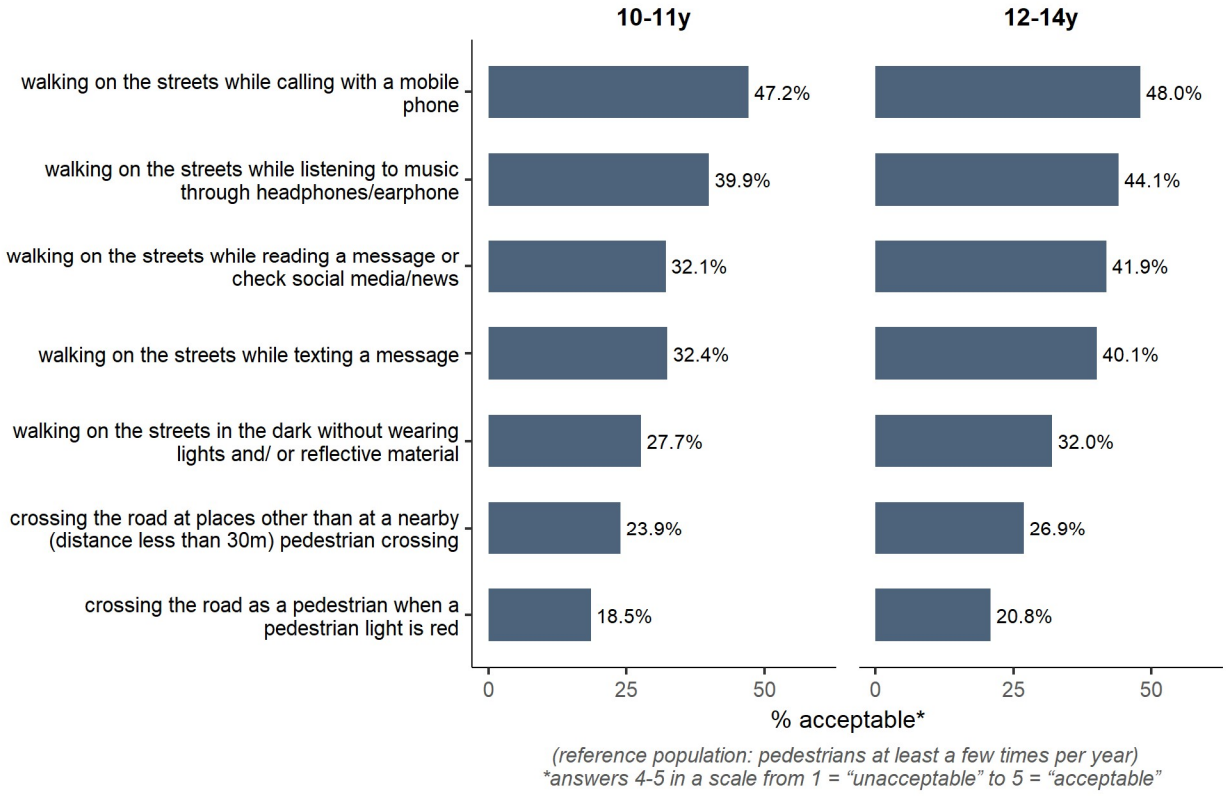

Figure 12 Acceptability of certain traffic behaviour as a pedestrian, by age group.

In general, all the pedestrian behaviours in this comparison are accepted by less than half of the children. The most frequently accepted pedestrian behaviours in this comparison are 'walking on the streets while calling with a mobile phone' (47.7%), 'walking on the streets while listening to music through headphones/earphone' (42.4%) and 'walking on the streets while reading a message or check social media/news' (38.0%). The pedestrian behaviour that was reported as the least acceptable is 'cross the road as a pedestrian when a pedestrian light is red' (19.9%), which is, in contrast to the other three pedestrian behaviours mentioned here, an infraction according to the Belgian Traffic Code (art. 63.1.2).

Regarding the acceptability of pedestrians' traffic behaviours, no major differences were found related to gender or age. Only 'walking on the streets while reading a message or checking social media/news' was more frequently reported as acceptable by children aged 12-14 years compared to those aged 10-11 years (41.9% vs 32.1%). This behaviour was also more frequently reported as acceptable by boys than girls (42.4% vs 33.4%). No regional differences are observed except for the pedestrians' traffic behaviours related to crossing the road at red light or at places other than at a nearby pedestrian crossing. Crossing the road through traffic red light is more acceptable in Brussels (29.7%) than in Wallonia (13.8%). In Flanders this is 21.6%, which does not differ significantly with the two other regions. The proportion of children reporting that crossing the road at places other than at a nearby pedestrian crossing is acceptable is higher in Flanders (29.0%) compared to Wallonia (18.6%).

3.2 Parents of children (0-14y)

This section is dedicated to the perceptions and opinions of parents on their child's road safety. The results are based on the answers of the parents, and not on the answers of the children as in the previous chapter. The results are presented for the parents of the whole group of children, those aged 0-14 years. Statistical differences are present with respect to the age, gender of the parent and the region where the parent lives. As we do not know the age of all children in the household of the parent, we were not able to analyse if parents with young children have other perceptions and opinions on road safety than parents with older children. The first subchapter describes the sociodemographic characteristics of the parents. The following sections address different topics: parents' perception of the road safety in their neighbourhood/environment and of policy measures, their opinion about road safety education at schools and their potential needs for information about the correct use of child seats (child restraint systems).

3.2.1 Sociodemographic information of the parents of children (0-14y)

Table 3 shows the weighted sociodemographic information of the parents of children aged 0-14 years who participated in the survey. The results are presented for the whole sample of parents.

Table 3 Sociodemographic information of the parents of children 0-14y.

	Weighted %
Gender	
Male	46.2%
Female	53.8%
Age group	
18-24y	15.2%
25-34y	35.2%
35-44y	38.4%
45+y	11.2%
Region	
Brussels	12.2%
Flanders	55.8%
Wallonia	32.0%
Main language talked at home	
Dutch	49.0%
French	46.3%
Other	4.7%
Number of children (0-17y) in the household	
1	43.8%
2	38.7%
3+	17.4%
Education level	
None	1.5%
Primary education	5.2%
Secondary education	40.8%
Bachelor's degree or similar	33.9%
Master's degree or higher	18.6%
Household's income	
We live comfortably on present income	27.1%
We cope with present income	43.8%
We find it difficult on present income	23.9%
We find it very difficult on present income	5.2%
Area where the family lives	
The countryside including villages	35.5%
The suburbs of a city	26.6%
A city	38.0%
Sample size*	1,669

*NOTES: Questions answered by the parents; * number of parents of children 0-14 years old.*

Once the sample is weighted, gender is almost equally spread within this group of parents. Most of the parents are between 25-44 years old (73.6%). More than half of the parents live in Flanders (55.8%), one third in Wallonia (32.0%) and one tenth in Brussels (12.2%).

Half of the parents speak Dutch at home as main language (49%), followed by French (46.3%). Only a few parents in this survey, speak another main language at home (4.7%; mainly: Arabic, German and Turkish).

Most of the parents have a household with 1-2 children (82.5%) and only one out of six live in a household of 3 or more children (17.4%).

More than half of the parents have at least a bachelor's degree (52.5%) and a minority of parents (6.7%) have no secondary school diploma.

Concerning the household income, the parents of most children stated that they can cope with their present income (43.8%) or live comfortable with it (27.1%). About one quarter of parents find it difficult (23.9%) or very difficult (5.2%) to cope with their present income.

The area types in which the families live are almost equally spread (city: 38.0%; countryside including villages: 35.5%; suburbs of a city: 26.6%).

3.2.2 Perception of the traffic safety in their neighbourhood - reported by the parent

Parents of children aged 0-14 years were asked how they perceive the road safety situation of their neighbourhood. Several statements were presented to them on the accessibility of their neighbourhood, traffic safety situation, and the walking and cycling facilities. They were asked if they agree/disagree with these statements. They could indicate their answer on a scale from 1- 6 where 1 was 'strongly disagree' and 6 'strongly agree'. Figure 13 presents the percentage of parents who stated that they agree with the statement (score 4-6). The results are presented for the total sample of parents. More details on age, gender, and region, as well as statistical information can be found in Table 15, Table 16, and Table 17 in Attachment 4.

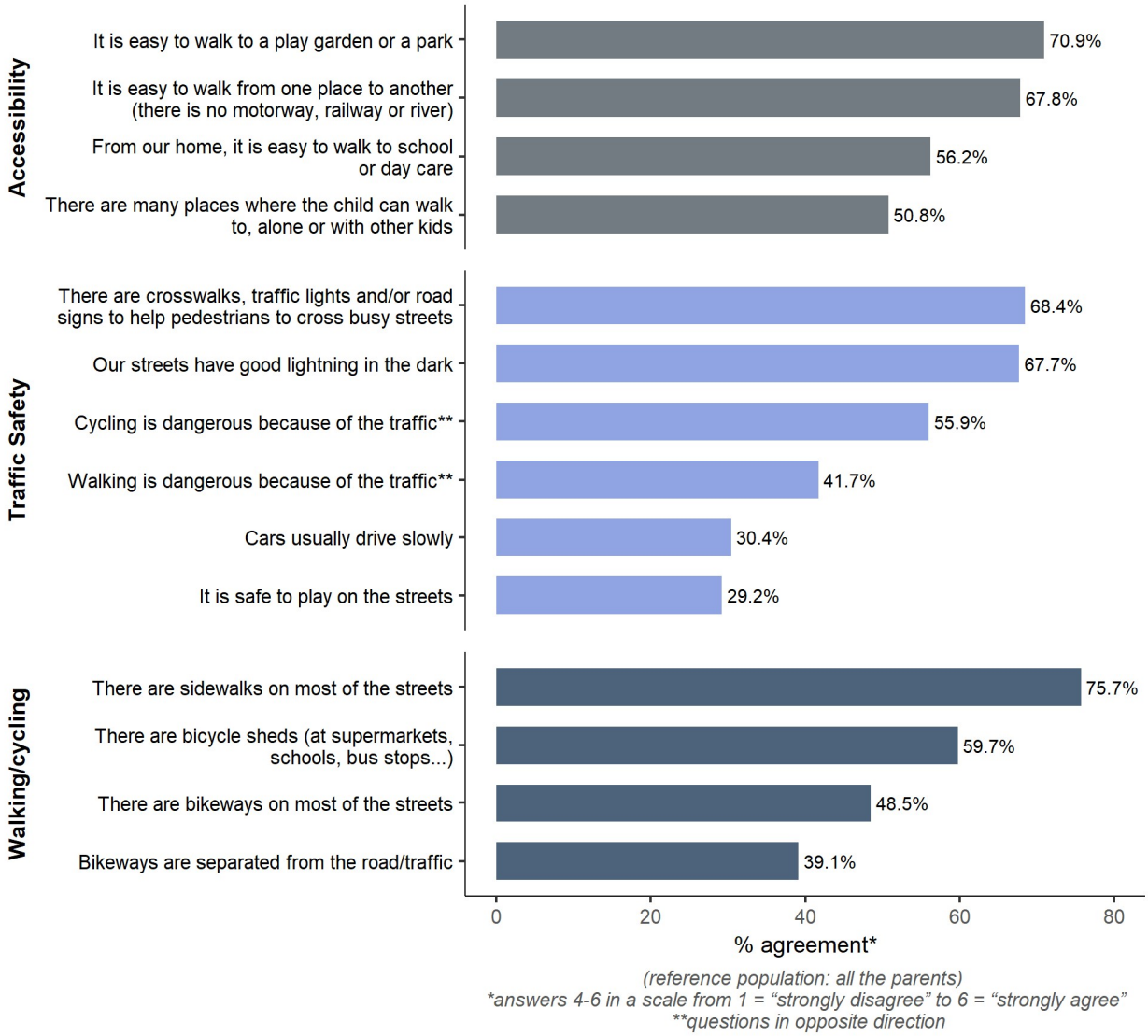

Figure 13 Neighbourhood characteristics.

3.2.2.1 Perception of the neighbourhood accessibility

About seven parents out of ten reported that in their neighbourhood, 'it is easy to walk to a play garden or a park' (70.9%) and 'It is easy to walk from one place to another one (there is no motorway, railway or river)' (67.8%). Still more than half of the parents reported 'From our home, it is easy to walk to school or day care' (56.2%) or 'There are many places where the child can walk to, alone or with other kids' (50.8%).

No clear pattern is observed with respect to the age of the parents. Only parents' perception about the easiness to walk from home to school (or to day care) and the availability of places where the child can walk to vary according to age. The proportion of parents reporting that 'From our home, it is easy to walk to school or day care' is higher among those aged 25-44 years compared to the youngest ones (respectively 58.7% among those aged 25-34 years and 58.3% in those aged 35-44 years vs 47.8% among those aged 18-24 years). The proportion of parents reporting that 'There are many places where the child can walk to, alone or with other kids' is the lowest among parents aged 25-34 years (43.5%) compared to the other age groups (55.6% in the age group 18-24y, 52.4% in the age group 35-44y and 61.3% among parents aged 45 years at least).

No association was found with gender, except for the availability of places where the child can walk to. Fathers are proportionally more numerous to report that 'There are many places where the child can walk to, alone or with other kids' than mothers (57.0% vs 45.4%).

Regional differences are observed for all indicators on neighbourhood accessibility (Figure 14). Compared to parents living in Wallonia, those living in Brussel report their neighbourhood is more accessible for the 4

indicators. Comparing parents from Flanders with those form Wallonia, the proportions of parents reporting 'There are many places where the child can walk to, alone or with other kids' (respectively 53.2% vs 44.1%) or 'It is easy to walk to a play garden or a park' (respectively 74.1% vs 61.6%) are higher among parents living in Flanders. Compared to parents from Flanders with those form Brussels, the proportions of parents reporting 'From our home, it is easy to walk to school or day care' (respectively 56.1% vs. 65.5%) or 'It is easy to walk from one place to another (there is no motorway, railway or river)' (respectively and 66.8% vs 76.1%) are higher among parents living in Brussel.

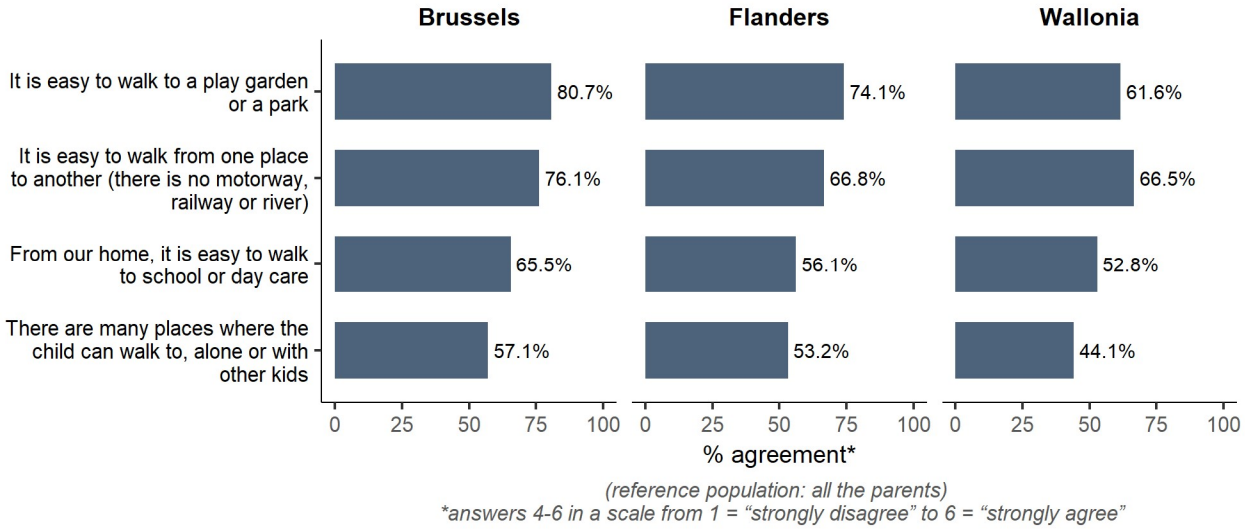

Figure 14 Neighbourhood characteristics – accessibility, by region.

3.2.2.2 Perception of the traffic safety in the neighbourhood

Two thirds of the parents say that 'Our streets have good lightning in the dark' (67.7%) or 'There are crosswalks, traffic lights and/or road signs to help pedestrians to cross busy streets' (68.4%). The major concerns for parents are related to car drivers 'speed and safety for the children to play on the streets'. Only three parents out of ten, report 'Cars usually drive slowly' (30.4%) or 'It is safe to play on the streets' (29.2%).

Parents' perception regarding neighbourhood safety varies according to age, at the benefit of the youngest parents who seem to be more positive about the safety in their neighbourhood. A third of parents aged 18-24 years (32.6%) agree that 'Walking is dangerous because of the traffic' while it is the case for 44.6% of the parents aged 25-34 years. Four parents aged 18-24 years out of ten (41.4%) report 'Cycling is dangerous because of the traffic' while the proportion is higher in all other age groups (55.4 % in parents aged 25-34 years, 60.2% in those aged 35-44 years and 62.7% in those aged 45 years or older). The same proportion of young parents (42.6%) report 'Cars usually drive slowly', while parents are proportionally less numerous in the older age groups (28.7% in the 25–34-year-old, 28.1% in the 35–44-year-old and 27.1% in the oldest parents). Also, the proportion of parents reporting 'It is safe to play on the streets' is higher among those aged 18-24 year (40.8%) compared to those aged 25-34 years (24.7%), 35-44 years (29.4%) and 45 years or older (26.8%).

Fathers' perception of the traffic safety tends to be more positive compared to mothers' perception. Fathers are proportionally more numerous to report that 'Cars usually drive slowly' (38.0% vs 23.9%), 'Our streets have good lightning in the dark' (72.8% vs 63.3%), 'There are crosswalks, traffic lights and/or road signs to help pedestrians to cross busy streets' (72.1% vs 65.3%) and 'It is safe to play on the streets' (35.1% vs 24.1%).

The way parents perceive road safety in their neighbourhood varies according to the region, at the detriment of parents living in Wallonia (Figure 15). No difference was found between parents living in Flanders and those living in Brussels. The proportion of parents who report 'Walking is dangerous because of the traffic', 'Cycling is dangerous because of the traffic' or 'Our streets have good lightning in the dark' is higher among those living in Wallonia compared to those living in Flanders (respectively 49.0% vs 37.9% 60.5% vs 53.0% and 69.8% vs 62.6%). The proportion of parents who report 'Cars usually drive slowly' is higher in Brussels (41.4%) compared to Wallonia (20.8%). Parents who report 'There are crosswalks, traffic lights and/or road signs to

help pedestrians to cross busy streets' or 'It is safe to play on the streets' are proportionally more numerous among those living in Brussels compared to those living in Wallonia (respectively 74.6% vs 64.4% and 34.9% vs 25.9%).

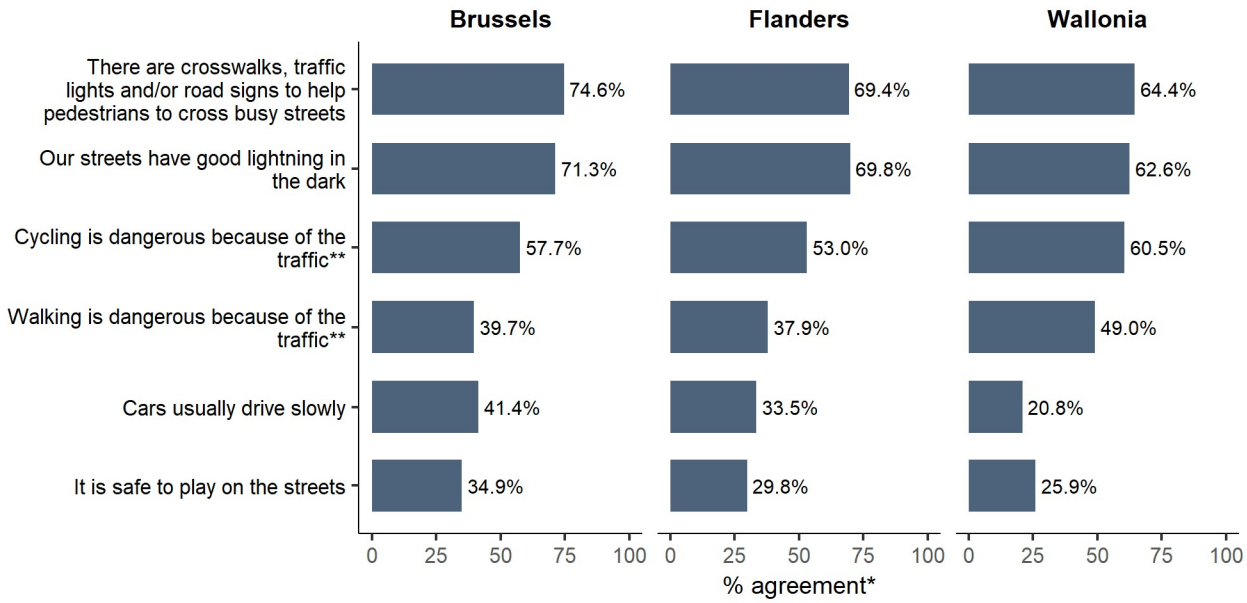

Figure 15 Neighbourhood characteristics – traffic safety, by region.

3.2.2.3 Perception about walking and cycling facilities.

Three quarters of the parents (75.7%) report 'There are sidewalks on most of the streets', six out of ten (59.7%) report 'There are bicycle sheds (at supermarkets, schools, bus stops...)', almost half of them (48.5%) report 'There are bikeways on most of the streets' and four out of ten (39.1%) declare 'Bikeways are separated from the road/traffic'.

Parents' assessments regarding walking and cycling facilities does not vary according to age. The proportion of parents reporting the existence of all cited walking and cycling facilities is higher among fathers compared to mothers ('sidewalks on most of the streets': 78.9% vs 73.0%, 'bikeways on most of the streets': 51.5% vs 45.9%, 'Bikeways are separated from the road/traffic': 44.3% vs 34.6% and 'bicycle sheds (at supermarkets, schools, bus stops...)': 65.4% vs 54.9%).

Regional differences are observed for all the indicators related to walking or cycling facilities, at the detriment of Wallonia (Figure 16). The proportion of parents reporting the presence of 'sidewalks on most of the streets' is higher in Brussels compared to Flanders and Wallonia and it is higher in Flanders compared to Wallonia too (87.8% vs 79.2% vs 64.9%). Parents reporting 'There are bicycle sheds (at supermarkets, schools, bus stops...)' are proportionally more numerous in Flanders compared to Brussels and Wallonia and it is higher in Brussels compared to Wallonia too (73.6% vs 62.3% vs 34.5%). The proportion of parents reporting 'There are bikeways on most of the streets' or 'Bikeways are separated from the road/traffic' is two times lower in Wallonia (26.9% and 24.4%) as in Flanders (57.6% and 44.8%) and in Brussels (63.0% and 51.6%).

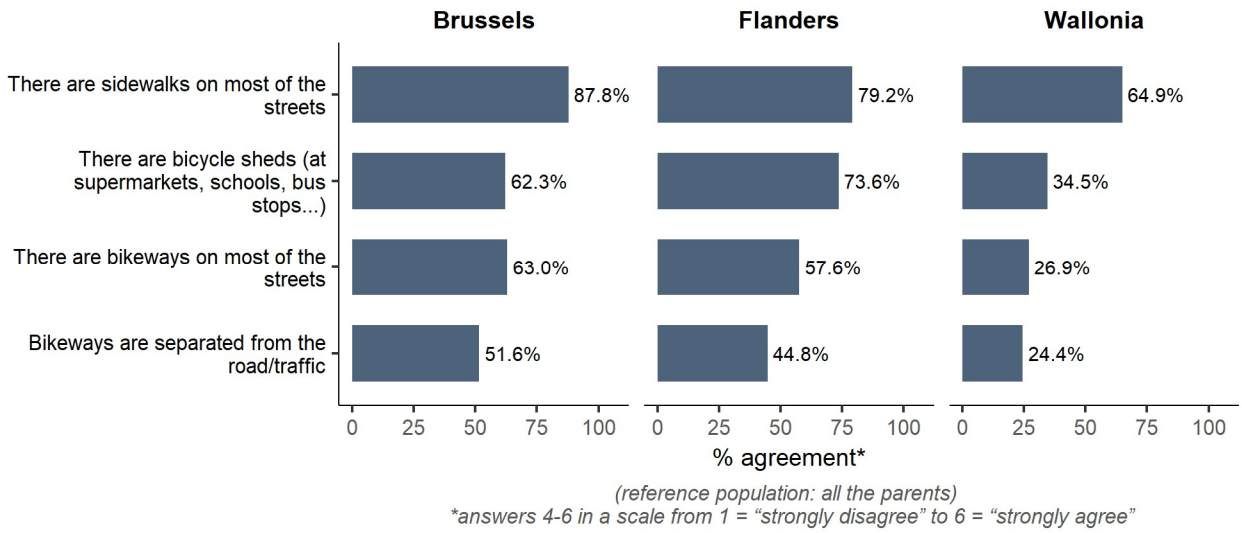

Figure 16 Neighbourhood characteristics – walking/cycling facilities, by region.

3.2.3 Support for policy measures - reported by the parent

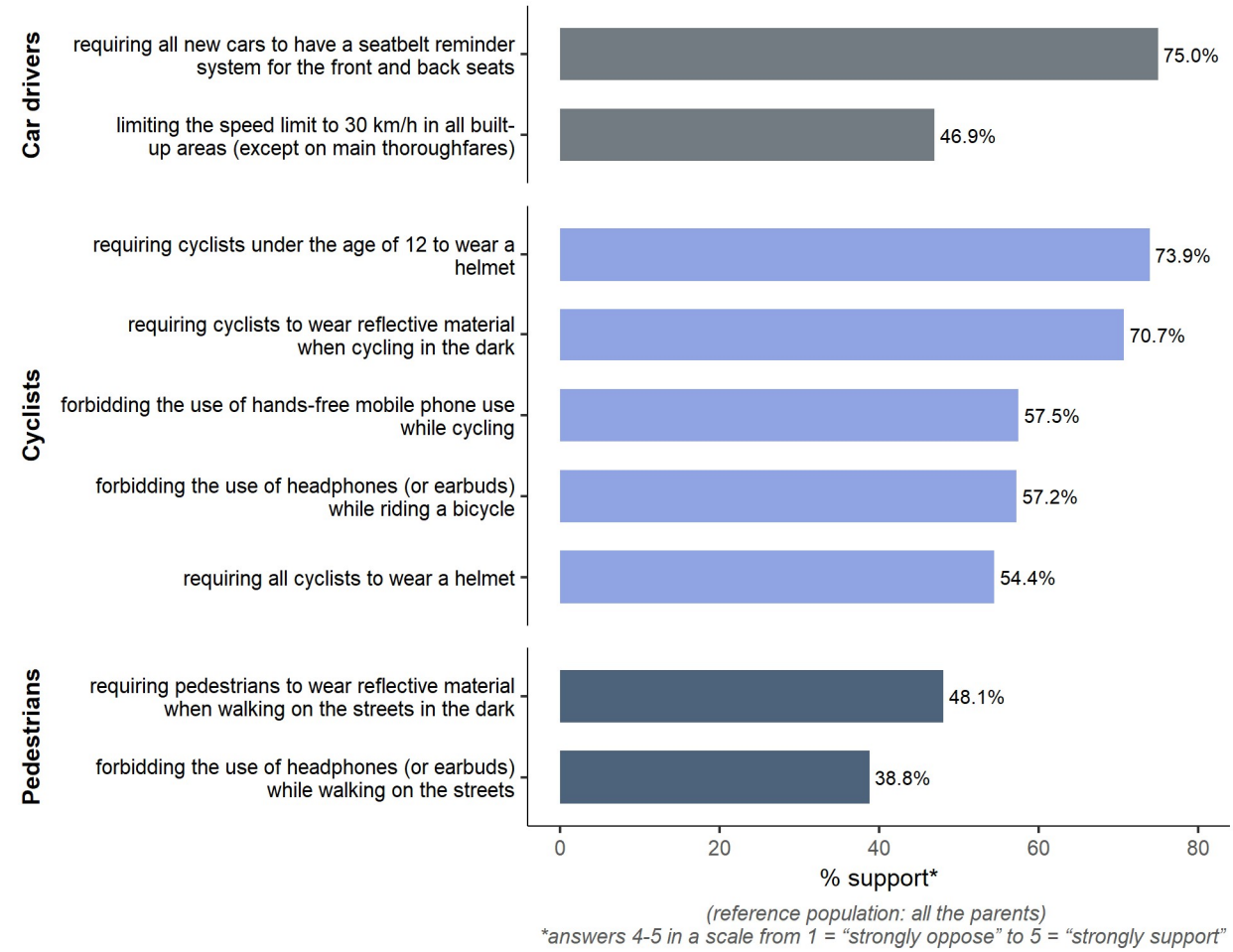

Figure 17 Support for policy measures.

Parents of children aged 0-14 years were asked if they support certain policy measures related to children's road safety. All these policy measures are not yet legally implemented in Belgium and are part of the public debate on additional measures to improve road safety. The parents could indicate their answer on a scale

from 1-5 where 1 was 'strongly oppose' and 5 'strongly support'. Figure 17 presents the percentage of parents who stated that they support a certain policy measure (score 4-5). The results are presented for the total sample of parents. More details on age, gender, and region, as well as statistical information can be found in Table 18 in Attachment 4.

More than seven out of ten parents support a legal regulation requiring: 'all new cars to have a seatbelt reminder system for the front and back seats' (75.0%: this measure is for new cars compulsory[8]), 'cyclists under the age of 12 to wear a helmet' (73.9%), and 'cyclist to wear reflective material when cycling in the dark' (70.7%). Less than half of the parents support a legal regulation regarding 'forbidding the use of headphones (or earbuds) while walking on the streets' (38.8%), 'limiting the speed limit to 30 km/h in all built up areas' (46.9%), and 'requiring pedestrians to wear reflective material when walking on the streets in the dark' (48.1%).

The results show for all addressed policy measures that the support increases with age and that mothers support these policy measures more than fathers (except for 'forbidding the use of headphones (or earbuds) while walking on the streets', where there is no difference).

Regional differences are observed too, but the pattern is less clear (Figure 18). For almost all measures, the support is higher among parents from Wallonia compared to parents from Brussels and Flanders. The results between Brussels and Flanders do not differ significantly except for the support for a legal regulation 'requiring pedestrians to wear reflective material when walking down the streets in the dark' which is higher among parents in Wallonia and Flanders compared to parents in Brussels (50.5% and 49.9% vs. 33.5%).

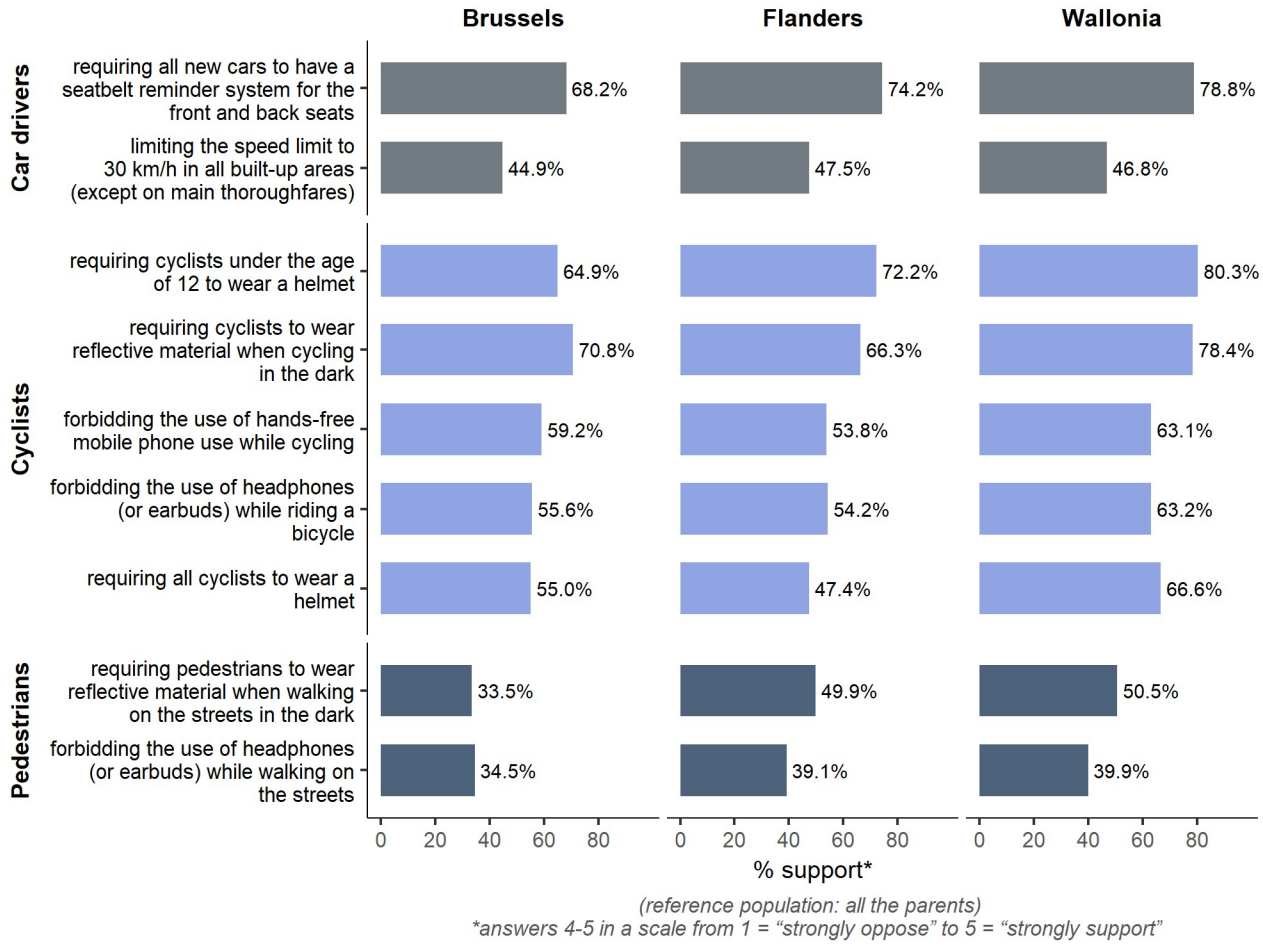

Figure 18 Support for policy measures, by region.

[8] Regulation (EC) No 16 of the Economic Commission for Europe of the United Nations (UNECE) — Uniform provisions concerning the approval of I. Safety-belts, restraint systems, child restraint systems and ISOFIX child restraint systems for occupants of power-driven vehicles; II. Vehicles equipped with safety-belts, safety-belt reminders, restraint systems, child restraint systems, ISOFIX child restraint systems and i-Size child restraint systems [2018/629]

3.2.4 Opinions about traffic education at school - reported by the parent

To assess parents' opinions on the traffic education their child got at school, they were asked if they agree with a statement or not. They could indicate their answer on a scale from 1-6: 1 was 'strongly disagree' and 6 'strongly agree'. This question was asked to the parents of children in primary or secondary school (n=893). Figure 19 presents the percentage of parents who stated that they agree with the statement (score 4-6). The results are presented for the total sample of parents. More details on age, gender, and region, as well as statistical information can be found in Table 19 in Attachment 4.

Almost six out of ten parents feel that 'the child masters traffic rules' (57.1%). About half of the parents think that sufficient attention is dedicated to 'teach traffic rules at school' (51.2%) and 'to practice traffic rules at school' (51.1%). Almost half of the parents think that 'the child knows well about the danger of blind spots' (44.5%).

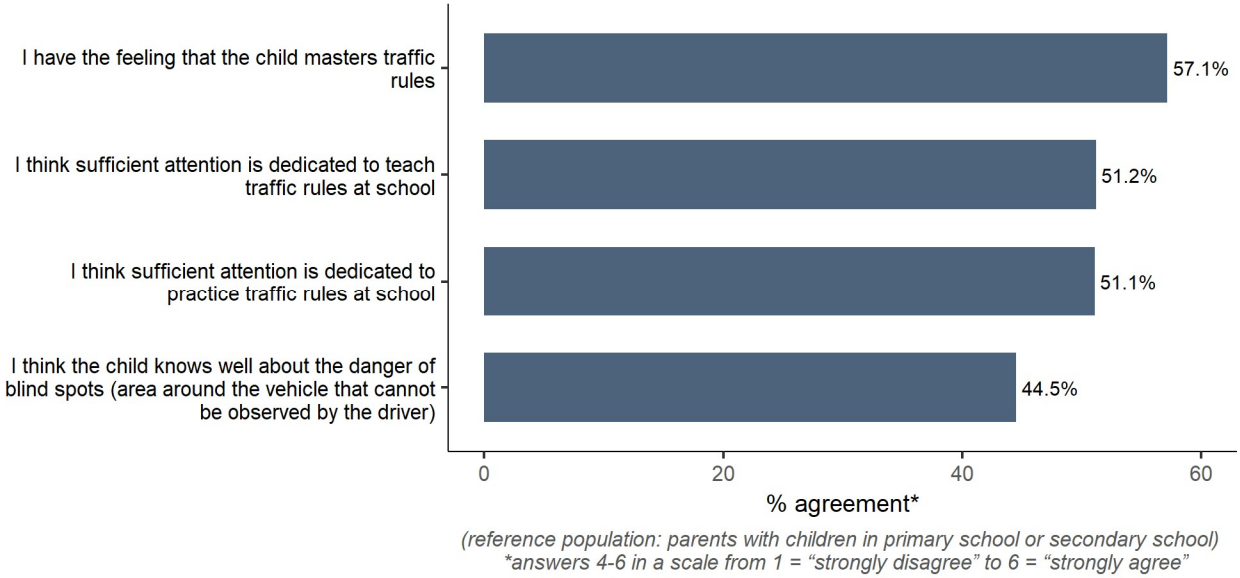

Figure 19 Opinions about traffic education.

Parents' opinions do not vary according to age. More fathers than mothers agree with the amount of 'attention that is dedicated to teach traffic rules at school', the fact that 'the child masters traffic rules' and children's 'knowledge about the danger of blind spots'. The same pattern is observed on the 'attention that is dedicated to practice traffic rules at school' but the difference is not statistically significant.

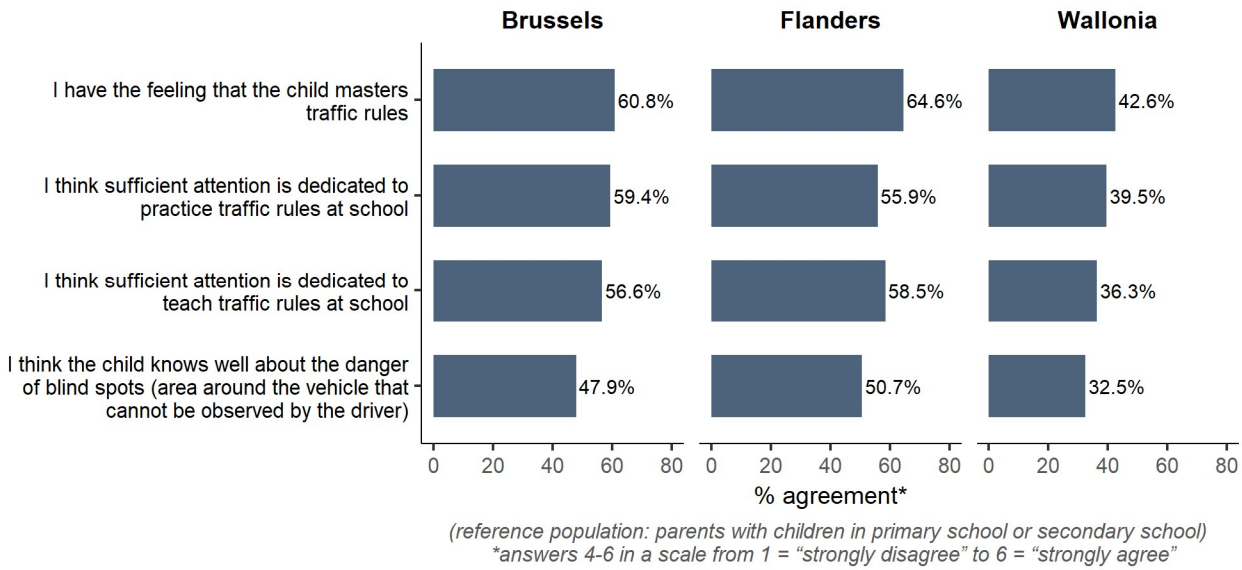

Figure 20 Opinions about traffic education.

The results show a clear regional pattern. The parents from Wallonia seem to be less satisfied with their children's traffic safety education compared to parents from Flanders or Brussels. Less parents in Wallonia feel 'the child masters traffic rules', or that he/she knows well about the danger of blind spots. Nor do they think that sufficient attention is dedicated 'to teach traffic rules' and 'to practice traffic rules' at school.

3.2.5 Needs for information about the correct use of child seats - reported by the parent

Parents were also asked to indicate the type(s) of information that would support them to correctly use child seats in a car. This question was asked only to parents, who indicated that they regularly have children smaller than 135cm in a car (n=1,114). They could indicate multiple options in a predefined list of six suggestions. Figure 21 presents the percentage of parents who indicated that a certain type of information would support them in the correct use of child seats in a car. The results are presented for the total sample of parents. More details on age, gender, and region, as well as statistical information can be found in Table 20 in Attachment 4.

More than half of the parents (56.5%) who are regularly having children smaller than 135cm in a car, state that the information on the different types of car seats for height, weight and age of the child would help them, followed by information on 'child seat laws and policies' (45.6%), 'how to correctly install the child seat in different types of cars' (44.9%) and 'how to buy the best child seat for my child' (42.1%). The least need is reported for information on 'where to find support to help installing the child seat' (24.8%) and very few parents (1.5%) indicate that they would need 'other' information. No clear age pattern is observed regarding the need for information on the correct use of child seats.

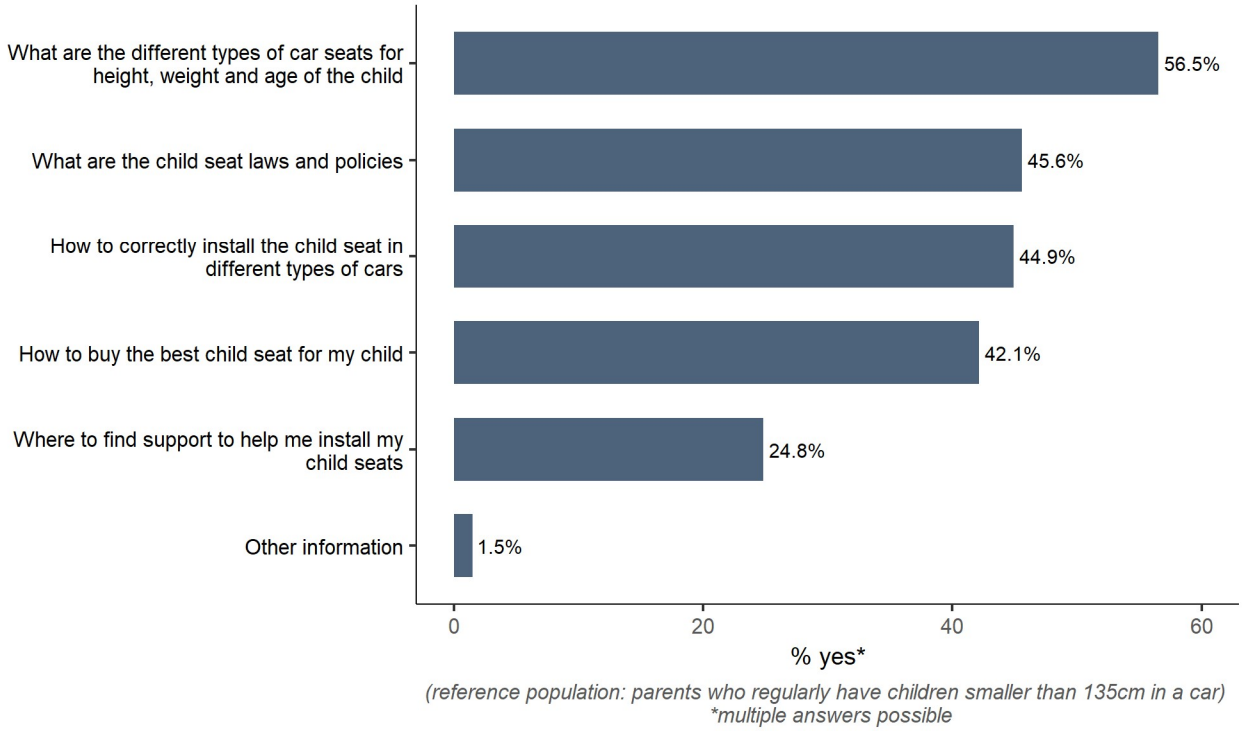

Figure 21 Needs for information about the correct use of child seats.

More mothers than fathers indicate a need for information on 'the different types of car seats for height, weight and age of the child would' (63.5% vs. 48.3%), 'child seat laws and policies' (49.4% vs. 41%), and 'how to buy the best child seat for my child' (45.2% vs. 38.4%).

Regional differences are observed for the need of information on 'the different types of car seats for height, weight and age of the child' and 'child seat laws and policies'. Flemish parents need more information about the legislation on child seats than parents from Brussels (48.3% vs. 36.1%) and Walloon parents need more information about the different types of child seats than Brussels parents (62.3% vs. 47 .7%).

3.3 Limitations of the study

The initial aim of this study was to provide deeper insights into the road safety perceptions of children and parents based on a combined approach of qualitative and quantitative study methods. The idea was to meet children at school to assess their perceptions related to road safety using qualitative approach and to assess parents' perceptions through a quantitative online panel survey. Due to the ongoing covid restrictions in Belgian schools, during the period of this project, a school survey was not feasible. Therefore, the study designed had to be adapted and we decided to expand the online survey in a way to also collect information from children.

This online survey has some general limitations which are linked to online panel surveys and to self-declared behaviour in general.

We used quota on age, gender and region with respect to the population of children, to improve the representativity of the sample for the children aged 0-14 years living in Belgium. Since we work with an online panel, this is always prone to systematic effects of other sociodemographic differences for which we have not controlled in the analysis of this report. In further analysis of the current data, additional sociodemographic variables should be taken into account (e.g., regression models). Furthermore, the study design did not allow to control if the information of the children were provided by the children themselves or by the parents instead. Nor can we assess if the parents filled in the information with the child, which could have led to a potential respond bias (social desirability bias). These critical remarks are not only specifically related to this research but also general ones in online panel survey research.

Survey research using self-declared information is always fraught with general response tendencies and biases, (e.g., Lajunen et al., 1997; Tellis & Chandrasekaran, 2010), the tendency of respondents to provide answers

which present a favourable image of themselves (social desirability bias), the misunderstanding of questions (e.g., questions with difficult words or long questions), or unintentional faulty answers due to memory errors (recall error) (Choi & Pak, 2005; Krosnick & Presser, 2010; Pires et al., 2020); some examples: (1) we do not assess actual accident risk of a certain behaviour, but we assess children's perception of the risk; (2) we do not assess the actual quality of the neighbourhood or the traffic education of the child, but we assess the parents' perception on these topics, which could be biased by e.g., regional (cultural) differences in expressing critical points of view; (3) we do not know if self-declared (unsafe or even illegal) behaviour is underestimated, as the children do not dare to admit it; (4) we do not know if self-declared behaviour is underestimated, because the children do not remember if they have done it in the last 30 days.

Furthermore, it should be emphasised that some subgroup comparisons might not have been identified as significant differences, because the sample sizes of the subgroups were too small (lack of power).

A major limitation of the study design was the difficulty to assess information from children aged 0 to 9 years old. Seen the cognitive and physical development of a child, questionnaires, and the procedure of asking children must be adapted to the needs of the child. As the current study design was limited to online panel survey, we tried to assess some more information on younger children, by asking parents to answer some questions for their children aged 0-9 years. This approach was apparently too complex. The data cleaning showed that there were inconsistencies due to the fact the parent either gave his/her own perception or answered for another child (e.g., for a few children under the age of 1 year, parent reported that they are taller than 135cm, that they go to secondary school or that they use a stand-up scooter, skateboard or ride a bicycle). Therefore, it was decided to not include this information in the analysis of this report. Another limitation of this survey was, that it was piloted only on a small sample of children and parents. Moreover, due to GDPR considerations, the survey did not ask the age of all children in the household of the parent. Therefore, we were not able to analyse if parents with young children have other perceptions and opinions on road safety than parents with older children.

In a follow-up study the initial idea to use a qualitative approach to assess the perceptions of the children will be continued (see also section 4.3).

4 Conclusions and recommendations

Traffic systems must be designed in a way that children can participate in traffic safely. Children are vulnerable road users which need protection (ETSC, 2018). The Safe System approach aims at increasing the road safety. It helps to protect children as it puts the focus on human vulnerability and fallibility and aims at improving all layers of a protective system (All For Zero, 2023; European Commission, 2018b). Furthermore, in Belgium the so called "child norm" approach, which aims at creating an environment in which children can participate in traffic safely, is of high importance in the Federal and regional traffic safety plans and also emphasized by the Belgium family association (i.e., 'Gezinsbond'). Therefore, this final chapter does not only summarize the major findings of this study, but also gives an overview of the general recommendations on how to improve children's road safety. Furthermore, it gives suggestions for further research.

The conclusion is divided into two sections: major findings from the answers of: (1) the children (10-14y) and (2) the parents of children (0-14y). If possible, a tentative comparison with the general adult population living in Belgium was made based on the results of the ESRA2 survey[9] (Meesmann et al., 2022; Schinckus et al., 2021) and the most recent NVOV survey[10] (Vias institute, 2023). The general recommendations on how to improve children's road safety are based on and partly cited from the following two reports: European Commission (2023a), Vias institute (2022).

4.1 Major findings from this study

4.1.1 Children (10-14y)

The following information is based on the self-declared behaviours, subjective personal perceptions and opinions of children aged 10-14 years, which have been reported in this Belgian study.

Use of transport modes and commuting

In Belgium, the most frequently used transport modes by children aged 10-14 years, are walking, being a passenger in the car, cycling and using public transport. Compared to adults living in Belgium, children tend to cycle more often than adults (Furian et al., 2021; Schinckus et al., 2021). Most children aged 10-14 years go to school by walking (31.2%), followed by public transport (18.9%), being a passenger in a car (17.9%) or by cycling (17.7%). About half of the children report they frequently go to school alone and if they are not alone, children are mostly accompanied by an adult from the household.

Safety feeling

Children aged 10-14 years feel the safest while they are a passenger in a car, followed by public transport and by walking. They feel less safe when using a skateboard, other transport modes or being a passenger on a bicycle. For adults living in Belgium, the safest transport modes in the ESRA2 survey are public transport, being a car driver, walking and as a car passenger (Furian et al., 2021; Schinckus et al., 2021). In the NVOV survey those are, public transport, van/minibus, car passenger, walking and car driving (Vias institute, 2023).

Self-declared traffic behaviour

The results of this study show, that most children report a safe behaviour in traffic. The most frequently reported unsafe cycling behaviour is 'cycling without a helmet'. A quarter of the children (26.3%) report they never 'cycled without a helmet in the last 30 days'. This means that three quarters of the children adapted this behaviour at least once in the last 30 days. In this comparison, the most frequently reported pedestrian behaviour is 'walking down the streets while using a mobile phone': 25.0% of the children reported they never 'walked while calling with a mobile phone in the last 30 days'; 26.4% never 'walked while texting a message' and 27.5% never 'walked while reading a message or checking social media'. All these behaviours are legal according to Belgian law.

[9] The second edition of the global 'E-Survey on Road users' Attitudes', conducted in Belgium in 2018.
[10] The 2023 edition of National Road Safety survey ('Nationale Verkeersonveiligheidsenquête'), conducted in Belgium in 2023.

Compared to the self-declared behaviour of adults, children tend to perform better, i.e., for using the helmet as a cyclist. 26.3% of the children report they never 'cycled without helmet in the last 30 days', while among the adults in the ESRA2 survey this only 17.2%. Mainly the use of a mobile phone while cycling tends to be higher among children compared to adults in the ESRA2 survey. Only 61.5% of the children report that they never 'cycled while reading or texting a message or check social media/news' while for adults this is 77.5% (Achermann Stürmer et al., 2020; Schinckus et al., 2021). Two thirds of the children (66.1%) say that they never 'travelled as car passenger without wearing the seatbelt over the last 30 days', which tends to be similar to the self-declared behaviour of adults (Nakamura et al., 2020; Schinckus et al., 2021). These two behaviours are infractions according to the Belgium Traffic Code.

Risk perception

Most children aged 10-14 years, consider 'crossing the road when a traffic light is red' (for cyclists: 73.0%; for pedestrians: 68.6%) and 'not using bicycle lights' (69.2%) or 'reflective equipment as a pedestrian' (52.6%) to be risky cycling and pedestrian behaviours. 'Using a mobile phone' is perceived to be risky while cycling for more than half of the children (reading or texting: 69.0%; talking on hand-held mobile phone: 53.4%) but for less than half of the children while being a pedestrian (writing a message 44.2%; reading a message 41.3%; calling 33.4%). In Belgium the use of a hand-held mobile phone is illegal for cyclists, but not for pedestrians. 'Cycling without a helmet' (48.3%) and 'the use of a mobile phone while walking' (33.4%) are the least frequently perceived risky traffic behaviours in this comparison for cyclists and pedestrian. Both behaviours are legal in Belgium. In most cases infractions are perceived as riskier than behaviours which are legal, except for 'not wearing reflective material as a pedestrian when it is dark'. This behaviour is not obliged, but still children perceive the not-waring of it as very risky behaviour. Those, behaviours which are perceived as riskier, are also less often reported than others.

Acceptability of unsafe traffic behaviour

In general, the results show that children's' acceptability of the unsafe cycling behaviours is rather low. Furthermore, children rather accept unsafe pedestrian behaviour compared to unsafe cycling behaviour. Among the assessed cycling behaviours, 'cycling without a helmet' is by most of the children (30.4%) accepted and 'cycling while reading or texting a message or check social media/news' by least of the children (14.1%). For pedestrians this is accordingly 'walking on the streets while calling with a mobile phone' (47.7%), and 'walking through the red traffic light' (19.9%). The two behaviours which were least accepted by the children, are both infractions according to the Belgian Traffic Code.

Age differences

With respect to age, the results highlight that the use of public transport, going alone to school and i.e., unsafe cyclist and pedestrian behaviour (autonomous transport modes) show strong statistical differences. Reported unsafe pedestrian behaviour even almost doubled in the group of 12-14-year-olds compared to the 10-11-year-olds. Consistently with this result, unsafe cycling and pedestrian behaviour are more frequently perceived as risky and unacceptable by children aged 10-11 years than children aged 12-14 years.

Gender differences

The results show very little differences according to gender. This is true for the use of transport modes, commuting to school, the perceived safety, risk perception or acceptability of unsafe traffic behaviours. Most striking gender differences can be observed in unsafe cycling behaviour. Boys tend to report more frequently unsafe cycling behaviour than girls. This last result is in line with gender differences among adults, but in general we observe less significant gender differences among children compared to adults (Schinckus et al., 2021; Vias institute, 2023).

Regional differences

The results show some differences according to region. Most striking regional differences identified in this study are the higher prevalence of children using public transport in Brussels and the higher prevalence of cycling in Flanders. These differences can also be observed among adults (Schinckus et al., 2021; Vias institute, 2023). Furthermore, children in Brussels and Wallonia walk more frequently to school than in Flanders. The study shows no regional differences with respect to perceived safety feeling, unsafe traffic behaviour, risk perception and acceptability of unsafe traffic behaviour.

4.1.2 Parents of children (0-14y)

The following information is based on personal perceptions and opinions of parents of children aged 0-14 years, which have been reported in this Belgian study.

Family neighbourhood

The **accessibility** of the neighbourhood as a pedestrian is perceived as positive by most parents. Margin for improvement is mainly seen for the 'way to walk to school or day care' and for more 'places where the child can walk to alone or with other kids'.

With respect to the perceived traffic **safety** of their neighbourhood, major concerns of the parents are streets which are not safe for the children to play, cars which usually do not drive slowly and cycling which is perceived dangerous because of the traffic.

With respect to **walking and cycling infrastructure**, most parents report that 'there are sidewalks on most of the streets' (75.7%). Margin for improvement is mainly seen for bikeways. Only about half of the parents say that 'there are bikeways on most of the streets' (48.5%), and even less say that 'bikeways are separated from the road/traffic' (39.1%). Six out of ten (59.7%) report 'there are bicycle sheds (at supermarkets, schools, bus stops...)'.

Support for policy measures

In general, the support for policy measure with respect to children's road safety is high among parents. Interestingly for those variables, which can be compared between the present study and ESRA2 results (6 out of 9 measures), the support among parents is lower than the support of the same measures in the general adult population in Belgium. For example: (1) the measure 'requiring cyclists under the age of 12 to wear a helmet' is supported by 83.8% of the adults in the ESRA2 survey and by more than 80% of the adults in all NVOV survey between 2019 and 2023. Among the parents in the current study this measure is supported by 73.9% of the parents; (2) the measure 'requiring pedestrians to wear reflective material when walking on the streets in the dark' is supported by 60.2% of adults in the ESRA2 survey and by 59.4% (2019) and 54.7% (2020) of the adults in the NVOV survey, while only 48.1% of the parents support this measure in the present study (Furian et al., 2021; Schinckus et al., 2021; Vias institute, 2023). More than seven out of ten parents support a legal regulation requiring: 'all new cars to have a seatbelt reminder system for the front and back seats' (75%; this measure is for new cars compulsory[11]), 'cyclists under the age of 12 to wear a helmet' (73.9%), and 'cyclist to wear reflective material when cycling in the dark' (70.7%). The least supported measure is 'forbidding the use of headphones (or earbuds) while walking on the streets' (38.8%). A legal obligation to wear reflective material is more supported for cyclists (70.7%) than for pedestrians (48.1%).

Opinions about traffic education at schools

About half of the parents see margin in improving the education and practicing of traffic rules at schools. Only six out of ten parents feel that 'the child masters traffic rules' (57.1%) and less than half of the parents think that 'the child knows well about the danger of blind spots' (44.5%).

Need for information about the correct use of child seats

The parents, who have small children (<135cm) in a car, indicate a need for information about the correct use of child seats. Most of them state that information on 'the different types of car seats for height, weight and age of the child' would help them (56.5%). They express less need for information on 'where to find support to help installing the child seat' (24.8%).

Age differences

The results show no differences according to age of the parents for: walking and cycling infrastructure and opinions about traffic education at schools. No clear pattern is found for the accessibility of the neighbourhood and the need for information about the correct use of child seats. The support of policy measures tends to

[11] Regulation (EC) No 16 of the Economic Commission for Europe of the United Nations (UNECE) — Uniform provisions concerning the approval of I. Safety-belts, restraint systems, child restraint systems and ISOFIX child restraint systems for occupants of power-driven vehicles; II. Vehicles equipped with safety-belts, safety-belt reminders, restraint systems, child restraint systems, ISOFIX child restraint systems and i-Size child restraint systems [2018/629]

increase with age, which is a general pattern which can also be observed among the general adult population (Schinckus et al., 2021; Van den Berghe et al., 2022). Besides, young parents (18-24-year-old) have a more positive general safety perception of their neighbourhood.

Gender differences

The results show a general pattern, in which mothers are more critical about the accessibility, safety and presence of walking and cycling infrastructure in their neighbourhood than fathers. Mothers are also more in favour of policy measures with respect to children's road safety, they are more critical about traffic education at schools and express more frequently the need for information on the correct use of child seat, than fathers. Among the general adult population, we also observe, that female road users are more in favour of policy measure than male road users (Schinckus et al., 2021; Van den Berghe et al., 2022).

Regional differences

The results show a clear pattern with respect to regional differences, which is for most assessed topics at the detriment of parents living in Wallonia. Most striking examples are the accessibility, safety and walking and cycling infrastructure of the neighbourhood and the opinions about traffic education at schools. For many policy measures the support is higher among parents from Wallonia compared to parents from Brussels and Flanders. An exception is the 'need for information about the correct use of child seats', in which no clear regional pattern can be found. In this case the difference between parents from Brussels and Flanders are rather small. Only a few indicators show significant differences between Brussels and Flanders. More parents from Brussels, compared to Flemish parents, indicated that: 'From our home, it is easy to walk to school or day care', 'It is easy to walk from one place to another (there is no motorway, railway or river)' and 'There are sidewalks on most of the streets'. More Flemish parents compared to parents from Brussel indicated that: 'There are bicycle sheds (at supermarkets, schools, bus stops...)' and were in favour of 'Requiring pedestrians to wear reflective material when walking on the streets in the dark' and the need for information on 'child seat laws and policies'.

4.2 General recommendations to improve children's road safety

To improve children's road safety, the Safe Systems approach is of high importance. As described in the introduction of this report, the Safe System approach integrates all elements of a traffic system and puts the human vulnerability and fallibility in focus (European Commission, 2018b; SWOV, 2021). Furthermore, in Belgium the so called "child norm" approach, which aims at creating an environment in which children can participate in traffic safely, is integrated into the Federal and regional traffic safety plans and emphasized by the Belgian family association (i.e., 'Gezinsbond'). Children in particulate are vulnerable road users. The Safety System approach is a 'forgiving road system': if one part of the system fails, other parts are still able to protect the road user. To improve the system, all elements need to be improved. Belgium as well as the other European member states follow this approach to achieve the common goal of Vision Zero (All For Zero, 2023). The five key elements of the Safe System approach are: safer roads, safer speeds, safer vehicles, safer (behaviour of) people and post-crash care (U.S. Department of Transportation, 2022). In line with these elements the following measures can be taken to improve children's road safety: safer and forgiving road infrastructure, safer speeds, safer vehicle technology, the use of protective equipment such as bicycle helmets and child restraint systems, consistent enforcement of traffic laws, adequate sanctions, and last but not least education and awareness-raising campaigns to promote children's road safety and a participatory approach involving children in the development of a safe traffic system.

General outlines of these measures are given below, but for more detail on current policy recommendations at national and EU levels see the PIN Flash 43 report of ETSC (2022). The follow subchapters are for a large part directly cited from the following two reports: 'Road Safety Thematic Report – Children' from the European Commission (2023a) and 'Briefing - Kinderen en verkeersveiligheid' from Vias institute (2022).

4.2.1 Safer roads and safer speeds

Within the Safe System approach the authorities are responsible for organizing mobility in a way that i.e., vulnerable road users are protected. Children relatively often travel as vulnerable road users (i.e., as a pedestrian or cyclist). Therefore, a road infrastructure that promotes the safety of pedestrians and cyclists is very important.

Where vulnerable road users and motorised traffic mix, it is important to limit the speed of motorised traffic. ETSC (2022) recommends 30 km/h zones in areas with large numbers of pedestrians and cyclists and in particular near childcare facilities/schools. This is also foreseen in the "Stockholm Declaration" (2020) that aims to halve the number of traffic deaths by 2030, by introducing a general 30 km/h speed limit in all living areas where cars, cyclists, and pedestrians cross each other in 140 countries. Resolution 11 of this Declaration states that the attendees want to "focus on speed management, including the strengthening of law enforcement to prevent speeding and mandate a maximum road travel speed of 30 km/h in areas where vulnerable road users and vehicles mix in a frequent and planned manner, except where strong evidence exists that higher speeds are safe, noting that efforts to reduce speed in general will have a beneficial impact on air quality and climate change as well as being vital to reduce road traffic deaths and injuries" (Stockholm Declaration, 2020, p. 3).

Additional measures are for example, the implementation of so-called 'school streets' or 'bike streets'. In 'school streets' the authorities can close the area around school gates to most motorised traffic at the beginning and end of the school day. The 'school streets' are either closed completely for most motorised traffic or the drivers are not allowed to drive faster than on the walking pace. They need to keep the road free for pedestrians and cyclists, give them the right of way and, if necessary, they must stop. The regulations related to 'bike streets' are similar to what was just described but are not limited to school areas or school times. Another measure, which could improve children's road safety is the ban of trucks in inner cities and in particular in school areas at the beginning and end of a school day (between 7:00-9:00 and 15:00-17:00). All these measures need to be combined with public sensibilisation, consistent enforcement and adequate sanctions (Vias institute, 2022).

4.2.2 Safer vehicle technology

Vehicle safety equipment can help protect drivers and passengers, including children, in traffic. These systems can focus on speed limitation, collision avoidance, and reducing the severity of collisions.

Examples are:

- Intelligent Speed Assistance (ISA), which helps the driver to keep within the speed limits
- Autonomous Emergency Braking (AEB) with pedestrian and cyclist detection
- systems that reduce the blind spot of trucks and busses
- seatbelt reminder systems for front and back seats.

Many types of vehicle technology are or will become mandatory for passenger cars. On 6 July 2022 a range of safety systems became mandatory for all new type approvals, including ISA (Intelligent Speed Assist), Lane Keeping Assist, distraction and fatigue detection, and vulnerable road user detection (European Commission, 2019)[12]. From 7 July 2024 these safety systems also become mandatory for all new vehicles with existing type approvals.

When children do not travel as independent road users, but as passengers in a passenger car, various types of equipment can also improve their safety. Several studies (Kühn et al., 2019; Roynard & Lesire, 2012; Schoeters & Lequeux, 2018) point out the positive effect of an Isofix system on the correct installation of child restraint systems. Isofix is a system attaching child restraint systems without having to use the seatbelt. The seat is clicked directly into the anchorage holes of the car with anchorage hooks. Since 1 November 2012, Isofix is compulsory on the outer rear seats for type approval of cars (Regulation (EC) No 661/2009)[13]. As all other car passengers, older or taler children (in Belgium: children min. 18 years old or ≥1.35m tall) must use a seatbelt on the front and back seat (Belgian Traffic Code (art. 35.1.1). The compulsory reminder systems to wear a seatbelt on both front and back seats in new cars since September 2019, helps to improve the situation[14] (see also section 4.2.3).

[12] Regulation (EU) 2019/2144 of the European Parliament and of the Council of 27 November 2019 on type-approval requirements for motor vehicles and their trailers, and systems, components and separate technical units intended for such vehicles, as regards their general safety and the protection of vehicle occupants and vulnerable road users.
[13] Regulation (EC) No 661/2009 of the European Parliament and of the Council of 13 July 2009 concerning type-approval requirements for the general safety of motor vehicles, their trailers and systems, components and separate technical units intended therefor.
[14] Regulation (EC) No 16 of the Economic Commission for Europe of the United Nations (UNECE) — Uniform provisions concerning the approval of I. Safety-belts, restraint systems, child restraint systems and ISOFIX child restraint systems for occupants of power-driven vehicles; II. Vehicles equipped with safety-belts, safety-belt reminders, restraint systems, child restraint systems, ISOFIX child restraint systems and i-Size child restraint systems [2018/629]

4.2.3 Using protective equipment

Bicycle helmet

When children travel as cyclists, a bicycle helmet can protect them from injuries to the head and brain. In the event of a fall from the bicycle, a bicycle helmet absorbs the impact force on the head by means of an energy-absorbing foam layer (SWOV, 2019b). The hard outer shell distributes the impact of the fall over a larger area and prevents sharp objects from penetrating. The smooth exterior allows the helmet to glide on the ground with little resistance, thus preventing neck injuries. There is widespread scientific consensus about the effectiveness of a bicycle helmet in protecting the head. Wearing a bicycle helmet can be encouraged by campaigns and/or by making it compulsory. Twelve EU countries have made it compulsory for children to wear a helmet, including France (under-12s), Austria (under-12s) and Sweden (under-15s) (ETSC, 2020a). As can be seen in section 3.2.3, 73.9% of the parents support a legal regulation requiring 'cyclists under the age of 12 to wear a helmet'. In recent studies among the general adult population this percentage was even higher (ESRA2: 83.8% (Schinckus et al., 2021); NVOV: 83.1% in 2023 and always above 80% since 2019 (Vias institute, 2023).

Correct use of child restraint systems and seatbelts

The safety of children as car passengers can be increased when the proper use of child restraints and seatbelts improves. The last national measurement highlighted that in 2022, about eight out of ten children (85.0%) are buckled up with a CRS among children under 18 years old and less than 135 cm tall (Moreau et al., 2023). When combining seat belt or CRS use, the study reveals that 93.7% of children in this target group are restrained in the car. This also means that 6.3% of them are not fastened by any kind of restraint system in the car.

As mentioned earlier, both the non-use of child restraint systems or seatbelts and the incorrect installation and use of a seat increase a child's risk of serious injury in a crash. Better use of child restraints and seatbelts can be achieved through education and awareness, legislation and enforcement, and user-friendly technology (Schoeters & Lequeux, 2018):

- Education and awareness-raising campaigns can inform parents and carers about how to choose a suitable child restraint system and how to install it. Furthermore, they can highlight the importance of (correct) use of child restraints and seatbelts for a child's safety.
- European legislation can impose (has imposed) requirements on manufacturers regarding seatbelt reminder systems on front and back seats, or the user-friendliness of child restraint systems. For example, the use of Isofix, which reduces the chance of incorrect use, is already compulsory on the outer rear seats for type approval of cars by Regulation (EC) No 661/2009[15]. Baby seats and child seats with straps that are homologated by the UN R129 standard must always be installed using Isofix. Another example is Regulation (EC) No 16[16] which obliges manufactures to equip new cars since September 2019 with seatbelt reminder systems both on front and back seat.
- Strengthening police checks increases the chance of being caught while not using or incorrectly using child restraint systems and seat belts.
- To encourage the use of child restraints, the EU Directive 77/388/ECC categorises child restraints as an essential product to which Member States can apply a reduced VAT rate. This measure makes the purchase of a new child restraint more affordable and can avoid using second-hand seats that may have already been involved in a crash (ETSC, 2018).
- Technical adaptations to child restraint systems can improve their user-friendliness.
- See also recommendations on safer vehicle technology in section 4.2.2.

4.2.4 Consistent enforcement and adequate sanctions

Consistent enforcement of traffic laws and adequate sanctions are basic requirements to implement the Safe System approach. All mentioned legal regulations in the chapters above need to be enforced and infractions

[15] Regulation (EC) No 661/2009 of the European Parliament and of the Council of 13 July 2009 concerning type-approval requirements for the general safety of motor vehicles, their trailers and systems, components and separate technical units intended therefor.
[16] Regulation (EC) No 16 of the Economic Commission for Europe of the United Nations (UNECE) — Uniform provisions concerning the approval of I. Safety-belts, restraint systems, child restraint systems and ISOFIX child restraint systems for occupants of power-driven vehicles; II. Vehicles equipped with safety-belts, safety-belt reminders, restraint systems, child restraint systems, ISOFIX child restraint systems and i-Size child restraint systems [2018/629]

must be sanctioned. This is about general traffic law infractions (e.g., speed controls, driving under influence of alcohol or drugs, not respecting street signs, driving a car without technical control or insurance, etc.) as well as specific legal regulations related to children's road safety. Those are e.g., the correct use of child restraint systems, the use of lights on a bike in the dark, not using a hand-held mobile phone while cycling, not crossing the streets when a traffic light is red, cycle next to the cycle lane, cross the street next to a pedestrian crossing. Furthermore, police officers play a role in sensitization and traffic education of children.

4.2.5 Education and awareness-raising

Traffic education includes any form of education aimed at teaching and improving the knowledge, insight, skills and attitudes necessary to participate safely in traffic (SWOV, 2017). Although traffic education can be used for all road users, it plays an important role in the development of children as traffic participants. The content of the traffic education and the methods to educate are strongly dependent on the age of the children.

Providing good quality traffic safety and mobility education at schools is one prerequisite. As can been seen in section 3.2.4 the parents of this study also express the need for improving the education and practicing of traffic rules at schools. The 'LEARN! Key Principles' and the 'LEARN! Manual' provide recommendations and examples of good quality traffic education (ETSC, 2020b, 2021).

In addition to formal education, which takes place mainly at school, informal education plays an important role, including practice, gaining experience in daily traffic, and learning from the behaviour of others. Parents play a vital role in informal education (Hoekstra & Twisk, 2010): they need to be made aware of this and educated how to best fulfil this role (SWOV, 2019a). Thus, the parents themselves are also an important target audience for traffic education and awareness-raising campaigns and children themselves can also play an important role in teaching their own parents how to behave properly in traffic (e.g., "Papa, you drive too fast", 'Mama, you also have to wear a bike helmet".). The influence of peers should also be emphasized in this context, especially for teenaged children (e.g., Dodd et al., 2022; Icenogle & Cauffman, 2021).

It is also important to make other road users aware of the presence and limitations of children in traffic. More generally, it is recommended that the responsibility for children's road safety should lie with adults and not with children themselves (ETSC, 2018).

4.2.6 Participatory approach involving children

Last but not least, the importance of a participatory approach in developing policy measure is highlighted. Children should be involved in the development of these measures. It is important that children are heard and that their opinions and needs are well understood (bottom-up approach). Initiatives such as the YOURS Academy of the Global Youth Coalition for Road Safety (claimingourspace.org/yours-academy) are good examples of organizations which give children and teenagers a voice in road safety planning. Explorative studies, such as the present study, can help to enrich the knowledge and understanding of the road safety situation of children. Research helps to understanding the children's perceptions and opinion and can as such support the public debate on this topic.

4.3 Further research on children's perception of road safety

This study provides first insights on the self-declared behaviours and the perceptions on road safety of children aged 10-14 years living in Belgium. It also provides insights on parents' opinions on their neighbourhood, support for policy measures, traffic education and needs for information on the correct use of child seat.

The study design of the current study did not allow assessing information of children under the age of 10. Furthermore, the current information on children's perception of road safety is rather limited. Therefore, it is recommended to enrich the presented information with a follow up study.

For a follow-up study on children's perception of road safety, a qualitative approach is recommended, and classrooms would be an ideal place to implement it. Such a study could enrich the existing information on children's perceptions - giving them a voice - and contribute to improving road safety for children in Belgium.

In order to collect these perceptions, the focus group method is highly recommended as it allows to take advantage of the group dynamics to access the knowledge and experiences of the children participating, to examine not only what children think, but also how they think and why they think so.

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Attachment

Attachment 1 Questionnaire – English version

Label	English version
	Introduction
I1	In this questionnaire, we focus on road safety of children (≤14 years). We ask you questions about yourself and about your perception of your child. Please select one child, which is younger than 15 years, for whom you fill in this questionnaire. In case you have several children, who fulfil these criteria, please select the child who will be the next to celebrate a birthday. There are no right or wrong answers; what matters are your perceptions. If the child for whom you fill in this questionnaire is between 10 and 14 years old, some questions should be filled in by the child him/herself. Those questions will be highlighted. In this case, please fill in this questionnaire at a moment when also your child can answer a few questions
	Socio-demographic information - Part 1 - reported by the parent
Q1	Are you …
answer	male
	female
Q2	How old are you (in years)?
Dropdown menu	(1-99)
Q3	How many children (0-18y) live in your household (min. 40% of the time)?
Dropdown menu	(1-20)
Q4	Is there at least one child living in your household (minimum 40% of his/her time) under the age of 15years?
answer	yes
	no
Q5	What is the main langue which you talk at home?
answer	Dutch
	French
	German
	Arabic
	Turkish
	Italian
	Bulgarian
	Romanian
	other if so, which one [open text field]
I2	Note: Please select one child in your family for whom you fill in this questionnaire. The child should be under the age of 15 years and live at least 40% of its time with you. In case you have several children, who fulfil this criterion, please select the child who will be the next to celebrate a birthday. The following questions concerns the child for whom you fill in the questionnaire. There are no right or wrong answers; what matters are your perceptions of the child.
Q6	How old is the child (in years)?
Dropdown menu	(0-14; ≥15)
Q7_1	You answered that the child is between 10 and 14 years old. Does the physical and mental condition of the child enable him/her answering some questions in this survey?
answer	yes
	no
Q7_2	Do you agree that the child will answer some questions in this survey?
answer	yes
	no
Q8	Did the child live at least 40% of its time with you during the 2021-2022 school year?
answer	yes
	no

Q9	Is the child …
	male
	female
Q10	How tall is the child?
	Smaller than 135cm
	Taller than 135cm
Q11	What is the child's rank in the sibling group (taking into account all children in the household)?
info	The oldest child has ranking 1.
Dropdown menu	(1st child - 20th child)
Q13_1	During the 2021-2022 school year, did the child go at least 2 times a week to …?
answer	day care (incl. private childcare, grandparents, another family member or family friend)
	preschool
	primary school
	primary school for special educational needs
	secondary school
	secondary school for special educational needs_
	none of the above (e.g., home-schooling; not yet in the day care/private childcare)
Q13_2	You indicated 'primary school'. In which year was the child during the 2021-2022 school year?
Dropdown menu	(1-6)
Q13_3	You indicated 'secondary school'. In which year was the child during the 2021-2022 school year?
Dropdown menu	(1-6)
Q14	During the 2021-2022 school year, what is the distance in (km) between your home and the child's school or day care?
Dropdown menu	(0-99) _____km
Q15	In which region do you live?
answer	Flanders
	Wallonia
	Brussels
Q16	Which phrase best describes the area where you live?
answer	the countryside including villages
	the suburbs of a city
	a city
	Perceptions of the neighbourhood - reported by the parent
Q17	To what extent do you agree with each of the following statements about your neighbourhood?
info	You can indicate your answer on a scale from 1 to 6, where 1 is "strongly disagree" and 6 is "strongly agree". The numbers in between can be used to refine your response.
6-points scale	strongly disagree (1)
	strongly agree (6)
	Accessibility
items	From our home, it is easy to walk to school or day care.
	There are many places where the child can walk to, alone or with other kids.
	It is easy to walk from one place to another (there is no motorway, railway or river).
	It is easy to walk to a play garden or a park.
	Walking/cycling facilties
items	There are sidewalks on most of the streets.
	There are bikeways on most of the streets.
	Bikeways are separated from the road/traffic.
	There are bicycle sheds (at supermarkets, schools, bus stops...).

	Traffic safety
items	Walking is dangerous because of the traffic.
	Cycling is dangerous because of the traffic.
	Cars usually drive slowly.
	Our streets have good lightning in the dark.
	There are crosswalks, traffic lights and/or road signs to help pedestrians to cross busy streets.
	It is safe to play on the streets.
I3b	Hello, in this questionnaire we are interested in the road safety of children under 15 years old. We are going to ask you some questions about yourself and your behaviour when you travel. Not all children live with both parents. If you sometimes live with one parent and sometimes with the other, please describe your travel behaviour while you are in the house in which you are now.
	Transport modes used - reported by the child (10-14y)
Q18_1b	Please indicate how often you usually use the following modes of transportation. This can be as a driver or as a passenger
answer	(almost) every day
	a few times per week
	a few times per month
	a few times per year
	never
items	walking
	stand-up scooter
	skateboard
	be a passenger on a bicycle (including trailer bicycle; excluding speed pedelecs)
	cycle as a cyclist
	public transport
	moped (including speed pedelec)/motorcycle as passenger
	be a passenger in a car
	other (e.g., unicycle, inliner)
	Commuting to school - reported by the child (10-14y)
Q19b	During the 2021-2022 school year, what was your principal mode of transportation to go to school or day care in general (the most frequent mode of transportation or the mode of travel with which you travelled the most miles if different modes of transport were used for the same trip)?
	E.g.: If you usually went to school by bicycle and were you only brought by car in exceptionally bad weather, then enter the bicycle as the main mode of transport here. If you walked 100 metres to the metro station and then travel 1 km by metro to get to the school, then enter the metro here.
answers	walking
	stand-up scooter
	skateboard
	be a passenger on a bicycle (including trailer bicycle; excluding speed pedelecs)
	cycle as a cyclist
	public transport
	moped (including speed pedelec)/motorcycle as passenger
	be a passenger in a car
	other (e.g., unicycle, inliner)
Q20_1b	During the 2021-2022 school year, did you usually complete the route to school on your own?
	You can indicate your answer on a scale from 1 to 6, where 1 is "yes, almost always" and 6 is "no, never". The numbers in between can be used as well.
6-points scale	yes, (almost) always (1)
	no, (almost) never (6)

Q20_2b	Which sentence best describes by whom you were mostly accompanied to school during the 2021-2022 school year, when you are not alone?
answer	I was accompanied by an adult who lives in my house
	I was accompanied by an adult who does not live in my house
	I was accompanied by another child who lives in my house
	I was accompanied by another child who does not live in my house
	Self-declared traffic behaviour - reported by the child (10-14y)
Q23b	During the last 30 days, how often have you…?
	You can indicate your answer on a scale from 1 to 5, where 1 is "never" and 5 is "(almost) always". The numbers in between can be used as well.
5-points scale	never (1)
	(almost) always (5)
	Car as a passenger
items	travelled as a car passenger without wearing the seatbelt
	travelled as a car passenger without using a child restraint system
	Bicycle as a passenger
items	been a passenger on a bicycle without wearing child restraint systems
	been a passenger on a bicycle without wearing a helmet
	Bicycle as a rider
items	cycled without a helmet
	cycled while listening to music through headphones/earphone
	cycled while talking on a hands-free mobile phone
	cycled while talking on a hand-held mobile phone
	cycled while reading or texting a message or check social media/news
	crossed the road with a bicycle when a traffic light is red
	cycled on the road next to the cycle lane
	cycled in the dark without wearing a white/ yellow light in front and a red light behind
	cycled in the dark without wearing reflective material
	Pedestrian
items	walked on the streets while listening to music through headphones/earphone
	walked on the streets while calling with a mobile phone
	walked on the streets while reading a message or check social media/news
	walked on the streets while texting a message
	crossed the road as a pedestrian when a pedestrian light is red
	crossed the road at places other than at a nearby (distance less than 30m) pedestrian crossing
	walked on the streets in the dark without wearing lights and/ or reflective material
	Risk perception of certain traffic behaviours - reported by the child (10-14y)
I4b	Note: in the following questions, please report what you feel or perceive nowadays. There are no right or wrong answers; what matters are your own feelings/thoughts.
Q24b	How safe or unsafe do you feel when using the following transport modes?
info	You can indicate your answer on a scale from 0 to 10, where 0 is "very unsafe" and 10 is "very safe". The numbers in between can be used as well.
11-points scale	very unsafe (0)
	very safe (10)
Q25b	According to you, what level of risk do you perceive when you are…
info	You can indicate your answer on a scale from 1 to 5, where 1 is "low risk" and 5 is "high risk". The numbers in between can be used as well.
5-points scale	low risk (1)

	high risk (5)
	Pedestrian
items	walking on the streets while listening to music through headphones/earphone
	walking on the streets while calling with a mobile phone
	walking on the streets while reading a message or check social media/news
	walking on the streets while texting a message
	crossing the road as a pedestrian when a pedestrian light is red
	crossing the road at places other than at a nearby (distance less than 30m) pedestrian crossing
	walking on the streets in the dark without wearing lights and/ or reflective material
	Cyclist as a rider
items	cycling without a helmet
	cycling while listening to music through headphones/earphone
	cycling while talking on a hands-free mobile phone
	cycling while reading or texting a message or check social media/news
	crossing the road with a bicycle when a traffic light is red
	cycling on the road next to the cycle lane
	cycling in the dark without wearing a white/ yellow light in front and a red light behind
	cycling in the dark without wearing reflective material
	Acceptability of certain traffic behaviours - reported by the child (10-14y)
Q26b	According to you, how acceptable is it for you to …?
info	You can indicate your answer on a scale from 1 to 5, where 1 is "unacceptable at all" and 5 is "fully acceptable". The numbers in between can be used as well.
5-points scale	unacceptable at all (1)
	fully acceptable (5)
	Pedestrian
items	walk on the streets while listening to music through headphones/earphone
	walk on the streets while calling with a mobile phone
	walk on the streets while reading a message or check social media/news
	walk on the streets while texting a message
	cross the road as a pedestrian when a pedestrian light is red
	cross the road at places other than at a nearby (distance less than 30m) pedestrian crossing
	walk on the streets in the dark without wearing lights and/ or reflective material
	Cyclist as a rider
items	cycle without a helmet
	cycle while listening to music through headphones/earphone
	cycle while talking on a hands-free mobile phone
	cycle while reading or texting a message or check social media/news
	cross the road with a bicycle when a traffic light is red
	cycle on the road next to the cycle lane
	cycle in the dark without wearing a white/ yellow light in front and a red light behind
	cycle in the dark without wearing reflective material
I8b	Thank you for answering our questions.
	Support for policy measures - reported by the parent
I5)	Note: The last questions focus on your personal opinions as a parent. There are no right or wrong answers.
Q29	Do you oppose or support a legal regulation …?
info	You can indicate your answer on a scale from 1 to 5, where 1 is "strongly oppose" and 5 is "strongly support". The numbers in between can be used to refine your response.

5-points scale	strongly oppose (1)
	strongly support (5)
	car drivers
Items	limiting the speed limit to 30 km/h in all built-up areas (except on main thoroughfares)
	requiring all new cars to have a seatbelt reminder system for the front and back seats
	pedestrians
Items	requiring pedestrians to wear reflective material when walking on the streets in the dark
	forbidding the use of headphones (or earbuds) while walking on the streets
	cyclists
Items	requiring all cyclists to wear a helmet
	requiring cyclists under the age of 12 to wear a helmet
	requiring cyclists to wear reflective material when cycling in the dark
	forbidding the use of hands-free mobile phone use while cycling
	forbidding the use of headphones (or earbuds) while riding a bicycle
	Opinions about traffic education at school - reported by the parent
Q30	Please indicate to what extent you agree with each of the following statements:
info	You can indicate your answer on a scale from 1 to 6, where 1 is "strongly disagree" and 6 is "strongly agree". The numbers in between can be used to refine your response
6-points scale	strongly disagree (1)
	strongly agree (6)
items	I think sufficient attention is dedicated to teach traffic rules at school.
	I think sufficient attention is dedicated to practice traffic rules at school.
	I have the feeling that the child masters traffic rules.
	I think the child knows well about the danger of blind spots (area around the vehicle that cannot be observed by the driver).
	Needs for information about the correct use of child seats - reported by the parent
Q32_1)	Do you regularly transport children in your car who are smaller than 135cm?
answer	yes
	no
Q32_2	In the following list, please tick the type(s) of information that would support you in the use of child restraint systems in a car:
answer	How to correctly install the child seat in different types of cars?
	What are the child seat laws and policies?
	How to buy the best child seat for my child?
	What are the different types of car seats for height, weight and age of the child?
	Where to find support to help me install my child seats?
	Other information: if so, on which topic? _____
	Socio-demographic information - Part 2 - reported by the parent
I6	Note: The survey is almost finished. We only need some more information on you as a parent. There are no right or wrong answers.
Q33	What is the highest qualification or educational certificate that you have obtained?
	none
	primary education
	secondary education
	bachelor's degree or similar
	master's degree or higher
Q34	Which of the descriptions comes closest to how you feel about your household's income nowadays?
	We live comfortably on present income
	We cope on present income

	We find it difficult on present income
	We find it very difficult on present income
	Social desirability scale - reported by the parent
Q35	To what extent do the following statements apply to you personally?
info	You can indicate your answer on a scale from 1 to 5, where 1 is "doesn't apply at all" and 5 is "applies completely". The numbers in between can be used to refine your response
5-points scale	doesn't apply at all (1)
	applies completely (5)
items	In an argument, I always remain objective and stick to the facts.
	Even if I am feeling stressed, I am always friendly and polite to others.
	When talking to someone, I always listen carefully to what the other person says.
	It has happened that I have taken advantage of someone in the past.
	I have occasionally thrown litter away in the countryside or on to the road.
	Sometimes I only help people if I expect to get something in return.
I7_1	Thank you for answering our questions.
I7_2	Thank you for answering our questions. We now have some questions which should be filled in by the child you described. Can you please ask the child to answer the remaining questions. If possible, let the child fill in the questions alone as much as possible in order to not influence his/her answers.

Attachment 2 Distribution of the population, the sample and weights, by region*gender*age group of the children.

	Flanders		**Brussels**		**Wallonia**	
	Male	Female	Male	Female	Male	Female
Population						
0-2y	5.13%	4.94%	1.27%	1.21%	2.90%	2.78%
3-5y	5.49%	5.24%	1.28%	1.22%	3.10%	2.98%
6-9y	7.85%	7.48%	1.68%	1.61%	4.47%	4.28%
10-11y	4.07%	3.88%	0.84%	0.80%	2.34%	2.25%
12-14y	6.01%	5.75%	1.16%	1.11%	3.53%	3.36%
Sample						
0-2y	4.07%	4.07%	1.08%	0.96%	2.52%	2.40%
3-5y	5.09%	4.91%	1.26%	1.14%	3.30%	2.88%
6-9y	8.15%	7.49%	1.80%	1.38%	4.85%	4.31%
10-11y	4.43%	3.89%	1.02%	0.78%	2.40%	2.64%
12-14y	6.71%	6.11%	1.68%	1.02%	4.07%	3.59%
Weights						
0-2y	1.26	1.21	1.18	1.26	1.15	1.16
3-5y	1.08	1.07	1.02	1.07	0.94	1.03
6-9y	0.96	1.00	0.94	1.17	0.92	0.99
10-11y	0.92	1.00	0.82	1.02	0.98	0.85
12-14y	0.90	0.94	0.69	1.09	0.87	0.93

Attachment 3 Tables with details on descriptive results and group comparisons by age-group, gender, region of the child (10-14y)

Table 4 Use of transport modes, by age group, gender, and region (% at least a few times per month).

	Walking	**Stand-up scooter**	**Skateboard**	**Passenger on a bicycle**	**Cycle as a cyclist**	**Public transport**	**Passenger on a moped/ motorcycle**	**Passenger in a car**	**Other**
Age group									
10-11y	89.6%	30.5%	15.8%	23.8%	71.2%	46.0%	12.3%	85.2%	14.5%
12-14y	89.1%	34.8%	19.0%	23.1%	74.8%	66.4%	13.3%	85.6%	17.5%
p-value [(1)]	*0.896*	*0.273*	*0.314*	*0.869*	*0.334*	***<0.001***	*0.751*	*0.882*	*0.323*
Gender									
Male	86.7%	35.8%	20.6%	22.9%	73.6%	56.3%	14.3%	87.5%	14.2%

Female	92.0%	30.2%	14.6%	23.9%	73.1%	60.1%	11.4%	83.3%	18.4%
p-value [(1)]	***0.039***	*0.142*	*0.058*	*0.824*	*0.891*	*0.350*	*0.306*	*0.130*	*0.176*
Region									
Brussels	95.2%	45.5% [a]	15.9%	28.0%	69.0% [a,b]	90.2% [a]	14.0%	79.8%	10.9%
Flanders	87.4%	29.0% [b]	19.7%	24.3%	80.2% [a]	52.2% [b]	11.7%	83.5%	17.2%
Wallonia	90.5%	35.7% [a,b]	14.9%	20.2%	63.1% [b]	57.5% [b]	14.5%	90.7%	16.4%
p-value [(1)]	*0.137*	***0.025***	*0.354*	*0.398*	***<0.001***	***<0.001***	*0.654*	*0.036*	*0.424*
Total	89.3%	33.1%	17.7%	23.4%	73.3%	58.2%	12.9%	85.4%	16.3%
Sample size*	586	586	586	586	586	586	586	586	586

*NOTES: questions answered by the children: 'Please indicate how often you usually use the following modes of transportation. This can be as a driver or as a passenger' – multiple answers possible; [(1)] p-value of Chi-squared Test of independence; [a,b] regions with different superscript letters differ significantly from each other, for each variable (p < 0.05); * total number of children aged 10-14 years - weighted.*

Table 5 Accompaniment to school (2021-2022 school year), by age group, gender, and region.

	Completed the route to school on his/her own % frequently (1-3) [(1)]	**Who mostly accompanied the child to school when he/she was not alone** (%) [(2)]			
		an adult from my household	an adult who is not part of my household	another child of my household	another child who is not part of my household
Age group					
10-11y	35.7%	62.6% [a]	11.9% [a]	14.9% [a]	10.6% [a]
12-14y	51.3%	38.2% [b]	15.2% [a]	14.7% [a]	31.9% [b]
p-value [(3)]	***< 0.001***	***< 0.001***			
Gender					
Male	46.3%	47.1%	16.1%	14.9%	21.9%
Female	43.7%	51.2%	11.2%	14.7%	23.0%
p-value [(3)]	*0.388*	*0.504*			
Region					
Brussels	49.3%	48.3% [a,b]	7.2% [a]	20.8% [a]	23.7% [a,b]
Flanders	46.6%	43.7% [b]	15.4% [a]	14.8% [a]	26.0% [a]
Wallonia	41.0%	58.8% [a]	12.9% [a]	12.8% [a]	15.5% [b]
p-value [(3)]	*0.375*	***0.041***			
Total	45.1%	49.0%	13.7%	14.8%	22.4%
Sample size	560*	438**			

*NOTES: [(1)] questions answered by the children: 'During the 2021-2022 school year, did you usually complete the route to school on your own?" – % frequently: answers 1-3 in a scale from 1 to 6, where 1 is "yes, (almost) always" and 6 is "no, (almost) never"; [(2)] 'Which sentence best describes by whom you were mostly accompanied to school during the 2021-2022 school year), when you were not alone?'; [(3)] p-value of Chi-squared Test of independence; [a,b] age groups, genders, and regions with different superscript letters differ significantly from each other, for each transport mode (p < 0.05); * number of children aged 10-14 years who went to primary/secondary school during the 2021-2022 school year – weighted; ** number of children aged 10-14 years who went to primary/secondary school during the 2021-2022 school year accompanied at least some times – weighted.*

Table 6 Primary mode of transportation to go to school (2021-2022 school year), by age group, gender, and region (%).

	Walking	**Stand-up scooter**	**Skateboard**	**Passenger on a bicycle**	**Cycle as a cyclist**	**Public transport**	**Passenger on a moped/ motorcycle**	**Passenger in a car**	**Other**
Age group									
10-11y	37.6% [a]	3.1% [a]	4.2% [a]	6.7% [a]	16.1% [a]	8.3% [a]	0.8% [a]	22.9% [a]	0.4%
12-14y	26.9% [b]	5.8% [a]	4.3% [a]	2.9% [b]	18.8% [a]	26.2% [b]	0.6% [a]	14.5% [b]	0.0%
p-value [(1)]	***< 0.001***								
Gender									
Male	28.6% [a]	5.4% [a]	7.0% [a]	4.6% [a]	17.0% [a]	19.6% [a]	0.3% [a]	17.1% [a]	0.3%
Female	33.9% [a]	4.0% [a]	1.4% [b]	4.3% [a]	18.4% [a]	18.2% [a]	1.0% [a]	18.7% [a]	0.0%
p-value [(1)]	*0.053*								
Region									
Brussels	43.8% [a]	3.3% [a]	7.4% [a]	1.3% [a]	10.4% [a]	17.1% [a]	1.7% [a]	15.1% [a,b]	0.0%
Flanders	25.2% [b]	5.3% [a]	5.3% [a,b]	5.4% [a]	27.6% [b]	16.1% [a]	0.6% [a]	14.1% [a]	0.3%

Wallonia	37.2% [a]	4.2% [a]	1.4% [b]	3.8% [a]	3.3% [a]	24.3% [a]	0.4% [a]	25.4% [b]	0.0%
p-value [(1)]	***< 0.001***								
Total	31.2%	4.7%	4.2%	4.4%	17.7%	18.9%	0.7%	17.9%	0.2%
Sample size*	584								

*NOTES: questions answered by the children: 'During the 2021-2022 school year, what was in general your primary mode of transportation to go to school (the most frequent mode of transportation or the mode of travel with which you travelled the most kilometers if different modes of transport were used for the same trip)?' – one answer possible; [(1)] p-value of Chi-squared Test of independence; [a,b] age groups, genders, and regions with different superscript letters differ significantly from each other, for each transport mode (p < 0.05); * total number of children who go to school - weighted.*

Table 7 Perceived safety feeling, by age group, gender, and region (mean score of a scale from 0 to 10, where 0 is "very unsafe" and 10 is "very safe").

	Walking	**Stand-up scooter**	**Skateboard**	**Passenger on a bicycle**	**Cycle as a cyclist**	**Public transport**	**Moped/ motorcycle as passenger**	**Passenger in a car**	**Other**
Age group									
10-11y	6.7	5.4	4.7	4.7	6.0	6.9	5.4	7.8	4.9
12-14y	7.1	5.5	5.3	5.7	6.1	7.2	5.7	7.9	5.2
p-value [(1)]	*0.092*	*0.879*	*0.139*	***0.014***	*0.664*	*0.202*	*0.531*	*0.386*	*0.410*
Gender									
Male	7.0	5.5	5.3	5.3	6.2	7.1	5.6	8.0	5.2
Female	6.9	5.4	4.7	5.2	5.9	7.1	5.4	7.8	5.0
p-value [(1)]	*0.602*	*0.787*	*0.111*	*0.798*	*0.231*	*0.934*	*0.676*	*0.265*	*0.668*
Region									
Brussels	7.1	5.1	4.1	5.7	5.9	7.5	5.7	7.6	4.1
Flanders	7.0	5.4	5.2	5.2	6.2	7.0	5.5	7.9	5.2
Wallonia	6.7	5.7	5.0	5.2	5.8	6.9	5.6	7.9	5.1
p-value [(1)]	*0.290*	*0.482*	*0.182*	*0.654*	*0.225*	*0.291*	*0.936*	*0.578*	*0.294*
Total	6.9	5.4	5.0	5.3	6.1	7.1	5.5	7.9	5.1
Sample size*	564	274	172	181	507	444	116	545	166

*NOTES: questions answered by the children: 'How safe or unsafe do you feel when using the following transport modes?" – mean score of a scale from 0 to 10, where 0 is "very unsafe" and 10 is "very safe"; (1) p-value of ANOVA; * number of children aged 10-14 years who use the transport mode at least a few times per year - weighted.*

Table 8 Self-declared traffic behaviour as a car passenger, by age group, gender, and region (% never in the past 30 days).

	Travelled as a car passenger without wearing the seatbelt
Age group	
10-11y	68.0%
12-14y	64.7%
p-value [(1)]	*0.432*
Gender	
Male	61.9%
Female	70.7%
p-value [(1)]	***0.039***
Region	
Brussels	60.0%
Flanders	63.7%
Wallonia	71.6%
p-value [(1)]	*0.128*
Total	66.1%
Sample size*	500

*NOTES: questions answered by the children: 'During the last 30 days, how often have you …?" – % never in the past 30 days: answer 1 in a scale from 1 to 5, where 1 is "never" and 5 is "(almost) always"; [(1)] p-value of Chi-squared Test of independence; * number of children aged 10-14 years who have been car passenger at least a few times per month - weighted.*

Table 9 Self-declared traffic behaviour as a bicycle rider, by age group, gender, and region (% never in the past 30 days).

	Cycled without a helmet	Cycled while listening to music through headphones/earphone	Cycled while talking on a hands-free mobile phone	Cycled while talking on a hand-held mobile phone	Cycled while reading or texting a message or check social media/news	Crossed the road with a bicycle when a traffic light is red	Cycled on the road next to the cycle lane	Cycled in the dark without wearing a white/ yellow light in front and a red light behind	Cycled in the dark without wearing reflective material
Age group									
10-11y	32.5%	61.3%	69.7%	68.8%	67.5%	61.9%	49.6%	62.6%	52.1%
12-14y	22.3%	46.2%	58.3%	57.7%	57.7%	56.0%	41.6%	48.4%	35.3%
p-value [(1)]	***0.018***	***0.002***	***0.017***	***0.022***	***0.041***	*0.221*	*0.112*	***0.003***	***0.001***
Gender									
Male	22.6%	47.4%	60.1%	57.3%	57.3%	50.9%	39.5%	48.2%	37.3%
Female	30.2%	57.1%	65.6%	67.0%	65.9%	66.1%	50.2%	60.2%	46.7%
p-value [(1)]	*0.077*	***0.045***	*0.235*	***0.038***	*0.062*	***0.002***	***0.026***	***0.012***	***0.048***
Region									
Brussels	38.8%	48.0%	63.6%	57.6%	61.2%	46.8%	32.1%	47.5%	46.6%
Flanders	24.2%	50.1%	62.4%	61.4%	59.0%	59.0%	46.2%	57.7%	41.7%
Wallonia	26.1%	58.1%	63.4%	65.1%	67.1%	61.1%	46.2%	48.3%	40.4%
p-value [(1)]	*0.162*	*0.338*	*0.948*	*0.625*	*0.338*	*0.225*	*0.155*	*0.117*	*0.770*
Total	26.3%	52.1%	62.8%	62.0%	61.5%	58.3%	44.7%	54.0%	41.9%
Sample size*	430	430	430	430	430	430	430	430	430

*NOTES: questions answered by the children: 'During the last 30 days, how often have you …?" – % never in the past 30 days: answer 1 in a scale from 1 to 5, where 1 is "never" and 5 is "(almost) always"; [(1)] p-value of Chi-squared Test of independence; * number of children aged 10-14 years who ride a bicycle at least a few times per month - weighted.*

Table 10 Self-declared traffic behaviour as a pedestrian, by age group, gender, and region (% never in the past 30 days).

	Walked on the streets while listening to music through headphones/earphone	Walked on the streets while calling with a mobile phone	Walked on the streets while reading a message or check social media/news	Walked on the streets while texting a message	Crossed the road as a pedestrian when a pedestrian light is red	Crossed the road at places other than at a nearby (distance less than 30m) pedestrian crossing	Walked on the streets in the dark without wearing lights and/ or reflective material
Age group							
10-11y	51.7%	38.4%	42.2%	42.1%	61.2%	41.3%	39.4%
12-14y	24.9%	15.9%	17.5%	15.7%	47.6%	26.7%	26.8%
p-value [(1)]	***<0.001***	***<0.001***	***<0.001***	***<0.001***	***0.002***	***0.001***	***0.002***
Gender							
Male	35.1%	22.6%	24.9%	24.6%	47.4%	29.8%	28.4%
Female	36.4%	27.3%	30.1%	28.1%	58.8%	35.4%	35.4%
p-value [(1)]	*0.720*	*0.216*	*0.197*	*0.361*	***0.008***	*0.191*	*0.091*
Region							
Brussels	30.8%	25.7%	30.4%	29.1%	42.8%	34.3%	28.5%
Flanders	37.4%	26.3%	28.6%	28.0%	52.7%	28.6%	30.3%
Wallonia	34.9%	22.5%	24.6%	22.7%	57.5%	38.6%	35.9%
p-value [(1)]	*0.597*	*0.646*	*0.563*	*0.370*	*0.134*	*0.077*	*0.407*
Total	35.8%	25.0%	27.5%	26.4%	53.1%	32.6%	31.9%
Sample size*	523	523	523	523	523	523	523

*NOTES: questions answered by the children: 'During the last 30 days, how often have you …?" – % never in the past 30 days: answer 1 in a scale from 1 to 5, where 1 is "never" and 5 is "(almost) always"; [(1)] p-value of Chi-squared Test of independence; * number of children aged 10-14 years who walk (pedestrian) at least a few times per month - weighted.*

Table 11 Risk perception as a cyclist rider, by age group, gender, and region (% risky).

	Cycling without a helmet	Cycling while listening to music through headphones /earphone	Cycling while talking on a hands-free mobile phone	Cycling while reading or texting a message or check social media/ news	Crossing the road with a bicycle when a traffic light is red	Cycling on the road next to the cycle lane	Cycling in the dark without wearing a white/ yellow light in front and a red light behind	Cycling in the dark without wearing reflective material
Age group								
10-11y	55.8%	60.1%	59.7%	71.8%	74.8%	60.0%	72.0%	68.5%
12-14y	43.5%	47.7%	49.4%	67.1%	71.8%	58.7%	67.3%	63.8%
p-value (1)	***0.007***	***0.008***	***0.020***	*0.273*	*0.507*	*0.791*	*0.268*	*0.282*
Gender								
Male	48.3%	52.0%	55.6%	68.3%	69.0%	56.5%	66.1%	64.1%
Female	48.2%	53.1%	51.1%	69.6%	77.1%	62.0%	72.3%	67.2%
p-value (1)	*0.949*	*0.802*	*0.301*	*0.775*	***0.039***	*0.216*	*0.124*	*0.481*
Region								
Brussels	53.6%	47.1%	51.4%	78.5%	73.0%	51.8%	76.2%	73.5%
Flanders	47.8%	53.8%	56.7%	68.4%	71.7%	60.6%	68.9%	62.2%
Wallonia	47.3%	52.0%	47.8%	66.6%	75.4%	59.0%	67.1%	69.2%
p-value (1)	*0.704*	*0.586*	*0.220*	*0.241*	*0.715*	*0.468*	*0.386*	*0.141*
Total	48.3%	52.5%	53.4%	69.0%	73.0%	59.2%	69.2%	65.6%
Sample size*	507	507	507	507	507	507	507	507

*NOTES: questions answered by the children: 'What level of risk do you perceive in…" – % risky: answers 4-5 in a scale from 1 to 5, where 1 is "low risk" and 5 is "high risk"; (1) p-value of Chi-squared Test of independence; * number of children aged 10-14 years who ride a bicycle at least a few times per year - weighted.*

Table 12 Risk perception as a pedestrian, by age group, gender, and region (% risky).

	Walking on the streets while listening to music through headphones/ earphone	Walking on the streets while calling with a mobile phone	Walking on the streets while reading a message or check social media/news	Walking on the streets while texting a message	Crossing the road as a pedestrian when a pedestrian light is red	Crossing the road at places other than at a nearby (distance less than 30m) pedestrian crossing	Walking on the streets in the dark without wearing lights and/ or reflective material
Age group							
10-11y	42.7%	37.2%	48.2%	49.4%	71.1%	45.8%	55.8%
12-14y	35.3%	30.9%	36.6%	40.7%	66.9%	43.1%	50.5%
p-value (1)	*0.080*	*0.118*	***0.006***	***0.039***	*0.294*	*0.564*	*0.220*
Gender							
Male	38.6%	30.5%	39.9%	41.9%	69.2%	42.9%	49.7%
Female	38.0%	36.4%	42.8%	46.6%	67.9%	45.6%	55.7%
p-value (1)	*0.935*	*0.129*	*0.478*	*0.271*	*0.728*	*0.554*	*0.147*
Region							
Brussels	36.8%	36.3%	47.1%	49.8%	63.8%	52.7% [a]	47.8%
Flanders	38.7%	36.1%	42.3%	46.2%	66.0%	35.6% [b]	53.1%
Wallonia	38.2%	28.1%	37.7%	39.1%	74.4%	55.6% [a]	53.6%
p-value (1)	*0.944*	*0.167*	*0.344*	*0.190*	*0.094*	***<0.001***	*0.689*
Total	38.3%	33.4%	41.3%	44.2%	68.6%	44.2%	52.6%
Sample size*	564	564	564	564	564	564	564

*NOTES: questions answered by the children: 'What level of risk do you perceive in…" – % of risky: answers 4-5 in a scale from 1 to 5, where 1 is "low risk" and 5 is "high risk"; (1) p-value of Chi-squared Test of independence; [a,b] regions with different superscript letters differ significantly from each other, for each variable (p < 0.05); * number of children aged 10-14 years who walk (pedestrian) at least a few times per year – weighted;*

Table 13 Acceptability of certain traffic behaviour as a cyclist rider, by age group, gender, and region (% acceptability).

	Cycling without a helmet	Cycling while listening to music through headphones /earphone	Cycling while talking on a hands-free mobile phone	Cycling while reading or texting a message or check social media/ news	Crossing the road with a bicycle when a traffic light is red	Cycling on the road next to the cycle lane	Cycling in the dark without wearing a white/ yellow light in front and a red light behind	Cycling in the dark without wearing reflective material
Age group								
10-11y	24.2%	19.9%	27.1%	12.4%	15.4%	14.2%	13.1%	17.0%
12-14y	34.3%	31.7%	27.6%	15.3%	15.7%	23.9%	16.1%	21.0%
p-value [(1)]	***0.017***	***0.004***	*0.925*	*0.350*	*0.950*	***0.007***	*0.331*	*0.284*
Gender								
Male	27.9%	27.9%	25.7%	16.6%	17.0%	21.1%	17.2%	21.9%
Female	33.1%	26.4%	29.2%	11.5%	14.0%	19.1%	12.5%	16.8%
p-value [(1)]	*0.204*	*0.709*	*0.394*	*0.098*	*0.349*	*0.589*	*0.137*	*0.167*
Region								
Brussels	27.7% [a,b]	25.8%	27.0%	20.6%	25.9% [a]	29.8%	23.7% [a]	25.3%
Flanders	37.3% [a]	27.4%	26.9%	13.2%	16.1% [a,b]	20.7%	15.8% [a,b]	20.3%
Wallonia	17.8% [b]	27.3%	28.4%	13.6%	10.7% [b]	15.5%	10.0% [b]	15.7%
p-value [(1)]	***<0.001***	*0.971*	*0.941*	*0.380*	***0.033***	*0.091*	***0.046***	*0.244*
Total	30.4%	27.2%	27.4%	14.1%	15.6%	20.2%	14.9%	19.5%
Sample size*	507	507	507	507	507	507	507	507

*NOTES: questions answered by the children: 'What level of risk do you perceive in…" – % acceptability: answers 4-5 in a scale from 1 to 5, where 1 is "unacceptable at all" and 5 is "fully acceptable"; [(1)] p-value of Chi-squared Test of independence; [a,b] regions with different superscript letters differ significantly from each other, for each variable (p < 0.05); * number of children aged 10-14 years who ride a bicycle at least a few times per year - weighted.*

Table 14 Acceptability of certain traffic behaviour as a pedestrian, by age group, gender, and region (% acceptability).

	Walking on the streets while listening to music through headphones/ earphone	Walking on the streets while calling with a mobile phone	Walking on the streets while reading a message or check social media/news	Walking on the streets while texting a message	Crossing the road as a pedestrian when a pedestrian light is red	Crossing the road at places other than at a nearby (distance less than 30m) pedestrian crossing	Walking on the streets in the dark without wearing lights and/ or reflective material
Age group							
10-11y	39.9%	47.2%	32.1%	32.4%	18.5%	23.9%	27.7%
12-14y	44.1%	48.0%	41.9%	40.1%	20.8%	26.9%	32.0%
p-value [(1)]	*0.362*	*0.818*	***0.023***	*0.075*	*0.543*	*0.403*	*0.309*
Gender							
Male	44.9%	50.1%	42.4%	39.0%	21.0%	28.5%	33.4%
Female	39.8%	45.2%	33.4%	34.9%	18.7%	22.8%	27.0%
p-value [(1)]	*0.240*	*0.269*	***0.033***	*0.319*	*0.502*	*0.141*	*0.103*
Region							
Brussels	54.0%a	57.9%a	47.3%a	40.8%a	29.7% [a]	30.4% [a,b]	39.8%
Flanders	42.9%a	47.0%a	38.1%a	37.6%a	21.6% [a,b]	29.0% [a]	31.1%
Wallonia	37.7%a	45.4%a	34.7%a	34.7%a	13.8% [b]	18.6% [b]	25.7%
p-value [(1)]	*0.100*	*0.207*	*0.262*	*0.691*	***0.012***	***0.033***	*0.108*
Total	42.4%	47.7%	38.0%	37.0%	19.9%	25.7%	30.3%
Sample size*	564	564	564	564	564	564	564

*NOTES: questions answered by the children: 'What level of risk do you perceive in…" – % acceptability: answers 4-5 in a scale from 1 to 5, where 1 is "unacceptable" and 5 is "acceptable"; [(1)] p-value of Chi-squared Test of independence; [a,b] regions with different superscript letters differ significantly from each other, for each variable (p < 0.05); * number of children aged 10-14 years who walk (pedestrian) at least a few times per year – weighted.*

Attachment 4 Tables with details on descriptive results and group comparisons by age-group, gender, region of the parents of children (0-14y)

Table 15 Neighbourhood characteristics (accessibility), by age group, gender, and region (% agreement).

	From our home, it is easy to walk to school or day care	There are many places where the child can walk to, alone or with other kids	It is easy to walk from one place to another (there is no motorway, railway or river)	It is easy to walk to a play garden or a park
Age group				
18-24y	47.8% [a]	55.6% [a]	63.3%	71.8%
25-34y	58.7% [b]	43.5% [b]	67.2%	70.8%
35-44y	58.3% [b]	52.4% [a]	68.7%	71.2%
45+y	52.2% [a,b]	61.3% [a]	72.9%	69.0%
p-value [(1)]	***0.011***	***<0.001***	*0.187*	*0.921*
Gender				
Male	56.5%	57.0%	69.5%	72.9%
Female	56.0%	45.4%	66.4%	69.2%
p-value [(1)]	*0.824*	***<0.001***	*0.175*	*0.097*
Region				
Brussels	65.5% [a]	57.1% [a]	76.1% [a]	80.7% [a]
Flanders	56.1% [b]	53.2% [a]	66.8% [b]	74.1% [a]
Wallonia	52.8% [b]	44.1% [b]	66.5% [b]	61.6% [b]
p-value [(1)]	***0.008***	***0.001***	***0.028***	***<0.001***
Total	56.2%	50.8%	67.8%	70.9%
Sample size*	1669	1669	1669	1669

*NOTES: questions answered by the parents of children 0-14y: 'To what extent do you agree with each of the following statements about your neighbourhood?' – % agreement: answers 4-6 in a scale from 1 to 6, where 1 is "strongly disagree" and 6 is "strongly agree"; [(1)] p-value of Chi-squared Test of independence; [a,b] regions/age groups with different superscript letters differ significantly from each other, for each variable (p < 0.05); * number of parents of children 0-14 years old – weighted.*

Table 16 Neighbourhood characteristics (traffic safety), by age group, gender, and region (% agreement).

	Walking is dangerous because of the traffic **	Cycling is dangerous because of the traffic **	Cars usually drive slowly	Our streets have good lightning in the dark	There are crosswalks, traffic lights and/or road signs to help pedestrians to cross busy streets	It is safe to play on the streets
Age group						
18-24y	32.6% [a]	41.4% [a]	42.6% [a]	63.7%	69.2%	40.8% [a]
25-34y	44.6% [b]	55.4% [b]	28.7% [b]	66.4%	66.8%	24.7% [b]
35-44y	42.1% [a,b]	60.2% [b]	28.1% [b]	68.8%	69.0%	29.4% [b]
45+y	43.6% [a,b]	62.7% [b]	27.1% [b]	73.1%	70.6%	26.8% [b]
p-value [(1)]	***0.013***	***<0.001***	***<0.001***	*0.156*	*0.728*	***<0.001***
Gender						
Male	42.0%	56.6%	38.0%	72.8%	72.1%	35.1%
Female	41.4%	55.4%	23.9%	63.3%	65.3%	24.1%
p-value [(1)]	*0.773*	*0.614*	***<0.001***	***<0.001***	***0.003***	***<0.001***
Region						
Brussels	39.7% [a,b]	57.7% [a,b]	41.4% [a]	71.3% [a,b]	74.6% [a]	34.9% [a]
Flanders	37.9% [a]	53.0% [a]	33.5% [a]	69.8% [a]	69.4% [a,b]	29.8% [a,b]
Wallonia	49.0% [b]	60.5% [b]	20.8% [b]	62.6% [b]	64.4% [b]	25.9% [b]
p-value [(1)]	***<0.001***	***0.019***	***<0.001***	***0.008***	***0.020***	***0.041***
Total	41.7%	55.9%	30.4%	67.7%	68.4%	29.2%
Sample size*	1669	1669	1669	1669	1669	1669

*NOTES: questions answered by the parents of children 0-14y: 'To what extent do you agree with each of the following statements about your neighbourhood?' – % agreement: answers 4-6 in a scale from 1 to 6, where 1 is "strongly disagree" and 6 is "strongly agree"; [(1)] p-value of Chi-squared Test of independence; [a,b] regions/age groups with different superscript letters differ significantly from each other, for each variable (p < 0.05); * number of parents of children 0-14 years old – weighted; ** questions in opposite direction.*

Table 17 Neighbourhood characteristics (walking/cycling facilities), by age group, gender, and region (% agreement).

	There are sidewalks on most of the streets	There are bikeways on most of the streets	Bikeways are separated from the road/traffic	There are bicycle sheds (at supermarkets, schools, bus stops...)
Age group				
18-24y	74.5%	54.6%	46.5%	65.8%
25-34y	77.9%	48.7%	37.5%	58.2%
35-44y	73.9%	46.3%	37.6%	60.3%
45+y	76.6%	46.8%	38.8%	54.3%
p-value [(1)]	*0.408*	*0.162*	*0.065*	*0.082*
Gender				
Male	78.9%	51.5%	44.3%	65.4%
Female	73.0%	45.9%	34.6%	54.9%
p-value [(1)]	***0.005***	***0.022***	***<0.001***	***<0.001***
Region				
Brussels	87.8% [a]	63.0% [a]	51.6% [a]	62.3% [a]
Flanders	79.2% [b]	57.6% [a]	44.8% [a]	73.6% [b]
Wallonia	64.9% [c]	26.9% [b]	24.4% [b]	34.5% [c]
p-value [(1)]	***<0.001***	***<0.001***	***<0.001***	***<0.001***
Total	75.7%	48.5%	39.1%	59.7%
Sample size*	1669	1669	1669	1669

*NOTES: questions answered by the parents of children 0-14y: 'To what extent do you agree with each of the following statements about your neighbourhood?' – % agreement: answers 4-6 in a scale from 1 to 6, where 1 is "strongly disagree" and 6 is "strongly agree"; [(1)] p-value of Chi-squared Test of independence; [a,b] regions with different superscript letters differ significantly from each other, for each variable (p < 0.05); * number of parents of children 0-14 years old – weighted.*

Table 18 Support for policy measures, by age group, gender, and region (% support).

	Limiting the speed limit to 30 km/h in all built-up areas (except on main thoroughfares)	Requiring all new cars to have a seatbelt reminder system for the front and back seats	Requiring pedestrians to wear reflective material when walking on the streets in the dark	Forbidding the use of headphones (or earbuds) while walking on the streets	Requiring all cyclists to wear a helmet	Requiring cyclists under the age of 12 to wear a helmet	Requiring cyclists to wear reflective material when cycling in the dark	Forbidding the use of hands-free mobile phone use while cycling	Forbidding the use of headphones (or earbuds) while riding a bicycle
Age group									
18-24y	39.0% [a]	61.0% [a]	34.7% [a]	32.7% [a]	42.3% [a]	61.3% [a]	55.4% [a]	47.6% [a]	41.4% [a]
25-34y	44.8% [a,b]	73.1% [b]	45.1% [b]	31.2% [a]	54.7% [b]	73.1% [b]	70.5% [b]	55.6% [a,b]	52.3% [b]
35-44y	50.8% [b]	80.2% [c]	54.5% [c]	44.5% [b]	58.3% [b]	78.9% [b]	74.9% [b]	60.6% [b]	64.4% [c]
45+y	51.5% [a,b]	81.8% [b,c]	53.6% [b,c]	51.4% [b]	57.0% [b]	76.5% [b]	77.4% [b]	65.9% [b,c]	69.6% [c]
p-value [(1)]	***0.005***	***<0.001***	***<0.001***	***<0.001***	***<0.001***	***<0.001***	***<0.001***	***<0.001***	***<0.001***
Gender									
Male	43.3%	68.0%	39.6%	38.7%	47.8%	67.5%	62.4%	52.2%	52.9%
Female	50.0%	80.9%	55.4%	38.9%	60.1%	79.5%	77.8%	62.0%	61.0%
p-value [(1)]	***0.006***	***<0.001***	***<0.001***	*0.946*	***<0.001***	***<0.001***	***<0.001***	***<0.001***	***0.001***
Region									
Brussels	44.9%	68.2% [a]	33.5% [a]	34.5%	55.0% [a]	64.9% [a]	70.8% [a,b]	59.2% [a,b]	55.6% [a,b]
Flanders	47.5%	74.2% [a,b]	49.9% [b]	39.1%	47.4% [a]	72.2% [a]	66.3% [a]	53.8% [a]	54.2% [a]
Wallonia	46.8%	78.8% [b]	50.5% [b]	39.9%	66.6% [b]	80.3% [b]	78.4% [b]	63.1% [b]	63.2% [b]
p-value [(1)]	*0.797*	***0.008***	***<0.001***	*0.390*	***<0.001***	***<0.001***	***<0.001***	***0.002***	***0.004***
Total	46.9%	75.0%	48.1%	38.8%	54.4%	73.9%	70.7%	57.5%	57.2%
Sample size*	1669	1669	1669	1669	1669	1669	1669	1669	1669

*NOTES: questions answered by the parents of children 0-14y: 'Do you oppose or support a legal regulation …?' – % support: answers 4-5 in a scale from 1 to 5, where 1 is "strongly oppose" and 5 is "strongly support"; [(1)] p-value of Chi-squared Test of independence; [a,b] regions/age groups with different superscript letters differ significantly from each other, for each variable (p < 0.05); * number of parents of children 0-14 years old – weighted.*

Table 19 Opinions about traffic education, by age group, gender, and region (% agreement).

	I think sufficient attention is dedicated to teach traffic rules at school	I think sufficient attention is dedicated to practice traffic rules at school	I have the feeling that the child masters traffic rules	I think the child knows well about the danger of blind spots (area around the vehicle that cannot be observed by the driver)
Age group				
18-24y	55.3%	55.3%	59.2%	43.5%
25-34y	52.7%	50.5%	56.1%	44.4%
35-44y	50.7%	50.0%	56.9%	43.2%
45+y	46.3%	51.1%	57.5%	49.2%
p-value (1)	*0.463*	*0.710*	*0.953*	*0.632*
Gender				
Male	56.6%	53.8%	61.1%	50.2%
Female	45.8%	48.4%	53.2%	38.9%
p-value (1)	***0.001***	*0.100*	***0.016***	***0.001***
Region				
Brussels	56.6% [a]	59.4% [a]	60.8% [a]	47.9% [a]
Flanders	58.5% [a]	55.9% [a]	64.6% [a]	50.7% [a]
Wallonia	36.3% [b]	39.5% [b]	42.6% [b]	32.5% [b]
p-value (1)	***<0.001***	***<0.001***	***<0.001***	***<0.001***
Total	51.2%	51.1%	57.1%	44.5%
Sample size*	893	893	893	893

*NOTES: questions answered by the parents with children aged 10-14y in primary school or secondary school: 'Please indicate to what extent you agree with each of the following statements: – % agreement: answers 4-6 in a scale from 1 to 6, where 1 is "strongly disagree" and 6 is "strongly agree"; (1) p-value of Chi-squared Test of independence; [a,b] regions with different superscript letters differ significantly from each other, for each variable (p < 0.05); * number of parents with children aged 10-14y in primary school or secondary school – weighted.*

Table 20 Needs for information about the correct use of child seats, by age group, gender, and region (% yes).

	How to correctly install the child seat in different types of cars?	What are the child seat laws and policies?	How to buy the best child seat for my child?	What are the different types of car seats for height, weight and age of the child?	Where to find support to help me install my child seats?	Other information
Age group						
18-24y	44.0%	39.5%	37.9%	48.9%	31.1%	0.8%
25-34y	45.6%	44.9%	45.4%	60.3%	25.4%	1.5%
35-44y	46.1%	50.0%	41.1%	55.2%	20.8%	1.6%
45+y	37.2%	38.3%	37.2%	56.3%	30.9%	2.2%
p-value (1)	*0.434*	*0.054*	*0.223*	*0.084*	***0.037***	*0.764*
Gender						
Male	45.0%	41.0%	38.4%	48.3%	23.1%	1.4%
Female	44.9%	49.4%	45.2%	63.5%	26.3%	1.6%
p-value (1)	*0.981*	***0.004***	***0.020***	***<0.001***	*0.229*	*0.715*
Region						
Brussels	46.8%	36.1% [a]	41.3%	47.7% [a]	28.3%	2.5%
Flanders	45.8%	48.3% [b]	41.9%	55.2% [a,b]	26.8%	0.8%
Wallonia	42.7%	44.5% [a,b]	42.8%	62.3% [b]	20.1%	2.4%
p-value (1)	*0.561*	***0.029***	*0.944*	***0.008***	***0.036***	*0.129*
Total	44.9%	45.6%	42.1%	56.5%	24.8%	1.5%
Sample size*	1114	1114	1114	1114	1114	1114

*NOTES: questions answered by the who regularly have children smaller than 135cm in a car: 'In the following list, please tick the type(s) of information that would support you in the use of child restraint systems in a car?' – % yes; (1) p-value of Chi-squared Test of independence; [a,b] regions/age groups with different superscript letters differ significantly from each other, for each variable (p < 0.05); * number of parents who regularly have children smaller than 135cm in a car – weighted.*

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