

**PROMOTING WALKING IN VIENNA OR HOW TO PROMOTE WALKING EXEMPLIFIED  
ON VIENNA**  
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**ABSTRACT**

Nearly everyone is walking, but hardly anyone considers himself as a pedestrian. Walking is taken for granted, and maybe because of this fact the exigencies connected to walking, and the needs of pedestrians, are often neglected. Moreover, pedestrians often feel unsafe, which is best reflected by the fact that parents are often reluctant to let their children walk to school alone. As input for Cost Action Nr. 358 *Pedestrians' Quality Needs* (international co-operation started in autumn 2006) a study on life quality, safety and infrastructure for pedestrians was initiated in Vienna (Austria) in 2006. This study "Safety and contentment of pedestrians in dependence of various mobility conditions" corresponds to the superior aim to enhance walking to a greater extent and also configuring it more safety. Based on the examination of the correlation between the design of public space, traffic safety and life quality, conclusions for the design of infrastructure and a reasonable organisation of the public space friendly to vulnerable road users can be drawn. The results of this study will help to implement measures for the improvement of (subjective) traffic safety and, in connection with that, for the improvement of life quality (in Vienna).

**1. WE ARE ALL WALKING**

Walking is not only the oldest and the most natural way of moving, but also the most important mode of transport: Every single trip, independently if one goes by car, by bicycle or by public transport starts and ends with a walking trip. Nearly everyone is walking, but hardly anyone considers himself as a pedestrian. Walking is taken for granted. This may be the reason that exigencies connected to walking, and the needs of people who want to walk, or are forced to do it, rely on it as one of their main mode, are often neglected. The conditions for walking are, thus, frequently unsatisfying.

**2. FACTS ABOUT WALKING**

There are many reasons why walking should be promoted and should be treated preferentially in the traffic policy:

- Walking is environmental-friendly,
- Walking is free of emissions,
- it is not noisy,
- it preserves our resources and
- improves the quality of the urban climate.

**2.1. Walking is healthy**

Walking is not only healthy due to these positive ecological effects, which have a direct impact on the state of health of every inhabitant, but due to the physical activity. Physical activity is the cheapest drug [1]. According to the WHO cardiovascular diseases,

depressions and overweight will become the most frequent health threats and causes of death in the Western civilisations until the year 2020 [2]. Treatment of diseases costs billions per year.

Exercise can contribute significantly to the prevention of these diseases. International health recommendations – half an hour a day of moderate physical exercise or three times a week half an hour of more intense exercise – are rarely considered [3].

Regular walking in this context (including trips to the bus or train stops) would make sense. Current studies, however, show that the average Austrian citizen only moves 15 to 20 minutes a day, but eats more than his ancestors [4].

## 2.2. Good walking conditions increase our life quality

A network of good footpaths is also an important contribution to life quality in town. Good footpaths are not expensive, when they have been planned with foresight [5].

## 2.3. Walking is socially compatible

Furthermore walking is socially compatible. Pedestrians do not harm others, but they themselves are especially endangered. Studies of former EU-projects such as WALCYNG, ADONIS and MASTER [6], and the OECD workgroup [7] stated pedestrians as well as bicyclists as the so called “vulnerable” road users.

## 2.4. Walking should be supported

Cycling has been emphasised in the last years but walking issues still seem to be of minor priority. In accident statistics pedestrians accidents do not occur. But surveys in Europe [8] show that road users explicitly wish more investment of money and know-how in alternative means of transport – especially in walking and bicycling. The capabilities for an advancement of walking are existing yet:

- 15% of all distances covered by car are shorter than 1 km, this means a walking distance of 10 to 15 minutes [9-11].
- More than 50% of the population cannot use cars as drivers: children, teenagers under 17 years, many older, disabled and ill people as well as poor people” [12].
- In 1/3 of all households there is no car available [13].

The disregard of pedestrians’ needs, a motor car oriented development, the present urban, regional and traffic planning are reasons why walking becomes more and more unattractive and that at the same time the number of short car trips increases. For example in smaller and medium-sized towns in Austria many shopping centres have been built at the periphery which hardly can be reached on foot and furthermore are often not adequately connected to the public transport network.

All these mentioned facts lead to the conclusion that alternative transport modes should become more attractive and especially supported.

## 3. PREVIOUS ACTIVITIES AND RESULTS

In 1993 the Austrian traffic association “VCÖ” (Verkehrsclub Österreich) has developed several suggestions for measures to support walking [14]. The increase of traffic safety for

pedestrians had the highest priority. Additionally the evaluation of footpaths should consider on the one hand the technical conditions of footpaths, such as a minimum width of 2 metres of pavements, a continuous network of roads but also the individual security of women and girls (60 % of the daily ways are done by women on foot) and the increase of life quality for pedestrians.

Some improvements for pedestrians have been achieved, but there are still deficits. The individual use of cars is steadily increasing, the traffic space for particular road users is stronger limited and many of the proposed measures have not been implemented satisfyingly.

In the year 2004 FACTUM OHG initiated a workshop in co-operation with the Austrian municipality (MA18) with focus on social scientific background of the walking conditions in Vienna. In the frame of this workshop some projects dealing with walking in town have been presented and discussed [15]. In the following chapter some results of the discussions will be presented in brief.

#### **4. BARRIERS OF WALKING**

There exist lots of barriers for pedestrians:

- small and high pavements,
- pedestrian underpasses that can affect the feeling of subjective safety negatively,
- crossings where it is hard to keep one's overview, pedestrians feel discriminated in comparison to the other road users,
- long waiting times at traffic lights for pedestrians,
- lack of attractivity or aesthetics reducing the joy of walking.

Walking depends on personal factors, individual criteria (e.g. age), individual views, moral concepts and norms, which all affect the number of ways done on foot. Also physical and social external factors influence walking - on the one hand the infrastructure, such as the range of traffic products and structures, on the other hand social factors such as sex, nationality, socialisation and the behaviour of other road users. The main question is: in consideration of those factors mentioned to what extent can walking be experienced as satisfying or frustrating? Promoting walking successfully means to consider the users' needs [16].

#### **5. PROBLEMS AND NEEDS OF PEDESTRIANS**

##### **5.1. Safety:**

Pedestrians are suffering from safety problems. Actual statistics show that in Austria in 2005 4.277 accidents happened with pedestrians involved. 4.151 pedestrians have been injured and 97 pedestrians died in these accidents (= objective safety) [17].

Today the situation for citizens who want to walk in different areas of a town seems very unattractive and also dangerous, as a consequence of years of pro car planning processes. Also non-existing anticipatory urban and regional planning, were residential areas,

businesses and workplaces, places for regeneration and social meetings should be connected are missing in Austria. The results of that can be experienced by everyone while walking. Studies show that walking will become safer the higher their percentage in the population rises [18].

When asking pedestrians directly if they feel safe in traffic the answers do not really seem to reflect the objective data: The majority of the pedestrians feel quite safe. If you, however, ask parents about their childrens' safety many of them are afraid and even reluctant to let children walk alone in traffic [19]. There also exists fear of aggressions of other road users and ruthless car drivers, dark streets or even that "something" could happen. We also know that senior citizens have a stronger feeling referring to these factors, and therefore ask for more social (e.g. more staff at public transport) and police control (= subjective safety).

#### 5.2. Spontaneous mobility and Comfort:

Pedestrians often feel handicapped in their spontaneous mobility due to long waiting times at traffic lights, long ways around at crossings, discrimination at crosswalks etc. So these things disturb also their feeling of comfort. Pedestrians do not want to have barriers on their route or want to go in a wiggly line. Infrastructure for walking often has massive deficits (e.g. small and/or high sidewalks, bad paving).

#### 5.3. Respect, Social climate and Equality:

Pedestrians have problems with the lack of respect shown to them. In Europe, but especially in Austria [20] pedestrians feel like a "second class" road user [21]. They want equality: fair preconditions for all road users with no discrimination. Pedestrians have problems with the social climate: many conflict situations result from difficulties in interaction with other road users. E.g. cyclists feel that the pedestrians infiltrate their area, the pedestrians have to stop, maybe become injured or threatened, and as the weakest road user group in the traffic system they are forced to subordinate. Moreover there exist differences between women and men. "Women use public services more often so that poor transport services limit their involvement in economic, political and social life" [22].

#### 5.4. Quality of Residence, Aesthetics and Attractivity:

The quality of residence in public spaces often is inadequate from the pedestrians' point of view. The planning and the designing of streets and public places is orientated on the needs of the individual motorised traffic (parking sites, traffic signs etc.). Seating accommodations often are not existent. Last but not least pedestrians but also habitants want more green and appealing places.

All these needs have to be considered when talking about the conditions of walking.

One important project on EU level in the fifth framework programme is named *HOTEL* – "How to evaluate life quality" [23]. In the frame of this project an instrument has been developed which enables to assess how life quality is influenced by prevailing mobility conditions. In the Swedish town Kristianstad the instrument was tested in an empirical pilot study. Citizens were asked how infrastructural measures implemented for pedestrians (e.g. shorter crossing distances, longer waiting times etc.) have influenced their personal feeling of life quality. A comparable study was carried out in Vienna in February 2007. The results of both studies allow to draw conclusions with respect to concrete structuring and designing of traffic infrastructure, the traffic organisation and the public space. The first results of this Viennese project will be presented in the following chapter.

## 6. SAFETY AND CONTENTMENT OF PEDESTRIANS IN DEPENDENCE OF VARIOUS MOBILITY CONDITIONS

The current project was carried out on behalf of the Municipality of Vienna department "Traffic Organisation and technical Traffic Issues" (MA 46) in the frame of the European COST action 358 "*Pedestrian Quality Needs*" (PQN).

COST is an intergovernmental European framework for international co-operation between nationally funded research activities. COST creates scientific networks and enables scientists to collaborate in a wide spectrum of activities in research and technology. The COST Action 358 is named "Pedestrians' Quality Needs" (PQN) Project and has been established to identify what people need for their safe and agreeable mobility in public space and to show the added value of a systems approach compared with sectoral approaches. The main objective of the COST Action 358 is to provide an essential contribution to systems knowledge of Pedestrians' Quality Needs and how those needs relate to structural and functional interventions, policy making and regulation to support walking conditions across the EU and other involved countries. The project is expected to network 25 countries and is being supported by the COST office of the European Commission.

As input for this Cost Action 358 Pedestrians' Quality Needs a study on life quality, safety and infrastructure for pedestrians was initiated in Vienna (Austria) in 2006. This national study is based on a pilot study implemented within the EU-project *HOTEL* – "How to evaluate life quality" and aims at an enclosing empirical analysis of life quality in relation to mobility conditions. In detail, the (subjective) evaluation of certain improvements of road infrastructure for pedestrians have been screened.

Based on the examination of the correlation between the design of public space, traffic safety and life quality, conclusions for the design of infrastructure and a reasonable organisation of the public space friendly to vulnerable road users were drawn. Further emphasis was put on safety aspects (which preconditions are beneficial for the safety of pedestrians, problems at crossings, line-of-sight- obstructions etc.). Furthermore, gender aspects were a special focal point of this study, as this affects the use of public space, the (typical) modes of traffic etc.

### 6.1. Goals

The goals of this Viennese study are:

- Promotion of walking, more safety for pedestrians
- Replication and comparison of parts of the pilot study of Kristianstad, Sweden (part of *HOTEL* research)

The design of different places in public space such as pavements, crossings, access to public transport etc., the organisation of the motorised traffic regarding the pedestrians (e.g. the speed of the individual road users in dependence of various functions of the traffic space, waiting time at traffic lights, co-ordination of the pedestrians with cars turning right) and the space that is provided for walking and their safety (e.g. the width of pavements, barriers such as dustbins, parking cars) have influence on the safety of walking and the experienced life quality. The focus of the study was a "subjective" one and lies on the 'emotional' perspective of the current situation.

The results of this study will help to implement measures for the improvement of (subjective) traffic safety and, in connection with that, for the improvement of life quality. Therefore, the study is an instrument for the enhancement of walking and, at the same time, of safety for pedestrians.

## 6.2. Performance

- Assessment of infrastructure and traffic organisation with help of traffic participants
- Standardised survey, 411 interviews (representative sample)
- 4 special infrastructure elements which have been implemented recently
- Duration of survey: February 2007

The survey (data collection) was conducted as representative questionnaire. The respondents were asked to evaluate the qualities of certain infrastructure elements and aspects of traffic organisation on Likert-scales.

## 6.3. Questionnaire

The Questionnaire was built up upon the Questionnaire of the *HOTEL* pilot study conducted in Kristianstad, Sweden.

Table 1: Questionnaire used at the HOTEL project

1. The following questions refer to what changes you experienced during the last years in (name of the city).  
Please choose appropriate rank on scale

Traffic is now				
1 much less safe	2 less safe	3 neutral	4 safer	5 much safer
Children are now				
1 much less safe	2 less safe	3 neutral	4 safer	5 much safer
I feel now				
1 much less safe	2 less safe	3 neutral	4 safer	5 much safer
Elderly and disabled persons are now				
1 much less safe	2 less safe	3 neutral	4 safer	5 much safer
Traffic flow for pedestrians is now				
1 much worse	2 worse	3 neutral	4 better	5 much better
Traffic flow for cyclists is now				
1 much worse	2 worse	3 neutral	4 better	5 much better
Traffic flow for car drivers is now				
1 much worse	2 worse	3 neutral	4 better	5 much better
Equity between traffic groups				
1 much worse	2 worse	3 neutral	4 better	5 much better
Ease and comfort for pedestrians are now				
1 much worse	2 worse	3 neutral	4 better	5 much better
Ease and comfort for car drivers are now				
1 much worse	2 worse	3 neutral	4 better	5 much better
Ease and comfort for cyclists are now				
1 much worse	2 worse	3 neutral	4 better	5 much better
Usability for elderly and disabled persons is now				
1 much worse	2 worse	3 neutral	4 better	5 much better
Environment (air, noise...) is now				
1 much worse	2 worse	3 neutral	4 better	5 much better
Social interaction with other persons is now				
1 much worse	2 worse	3 neutral	4 better	5 much better
Quality of life is now				
1 much worse	2 worse	3 neutral	4 better	5 much better
This district is now				
1 much uglier	2 uglier	3 neutral	4 more beautiful	5 much more beautiful
To stay in this district is now				
1 much less convenient	2 less convenient	3 neutral	4 more convenient	5 much more convenient

2. Mention the most important element in traffic that makes traffic safer (your opinion)

3. Mention the most important element in traffic that makes traffic unsafe (your opinion)

4. Man  Woman

5. Age

< 15	15 – 34	35 – 64	65 – 74	75+
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6. What district of Vienna do you live in?  (01 to 23)

7. How often do you go by

Bus, tram, metro

Every day	Several times a week	Once a week	Once a month	Hardly ever, never
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by train/commuter train

Every day	Several times a week	Once a week	Once a month	Hardly ever, never
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By car

Every day	Several times a week	Once a week	Once a month	Hardly ever, never
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By bicycle

Every day	Several times a week	Once a week	Once a month	Hardly ever, never
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Do you walk on whole trips from start to goal (shopping, work, leisure, etc.?)

Every day	Several times a week	Once a week	Once a month	Hardly ever, never
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Do you use special transport service for the disabled?

Every day	Several times a week	Once a week	Once a month	Hardly ever, never
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Others?  
Which ones: \_\_\_\_\_

#### 6.4. Selected infrastructure

The following infrastructure elements were evaluated in the present study:

Table 2: Infrastructure elements

More zebra crossings
Red framed zebra crossings
Lane division
Extension of pavement
Raised pedestrian crossings
Raising of the whole intersection
Traffic lights

Of special interest for the Municipality of Vienna were the following infrastructure elements which have been implemented recently:

Table 3: Selected infrastructure

Infrastructure elements	n	%
Extension of pavement	101	24,6%
Raised pedestrian crossings	100	24,3%
Red framed zebra crossings	110	26,8%
Lane division	100	24,3%
total	411	100%

The pictures 1 and 2 show some examples of the infrastructure elements.

Picture 1 & 2: Red framed zebra crossing and Lane division



#### 7.5. Respondents

411 people were interviewed. 91,7% of the respondents were living in Vienna, the other 8,3% stated to travel often (several times in a week) in Vienna. 48,9% were male, 51,1% female.



Table 4: Habitation of respondents

	n	%
Not in Vienna	34	8,3%
Vienna	377	91,7%
total	411	100%

Table 5: Gender

	n	%
male	201	48,9%
female	210	51,1%
total	411	100%

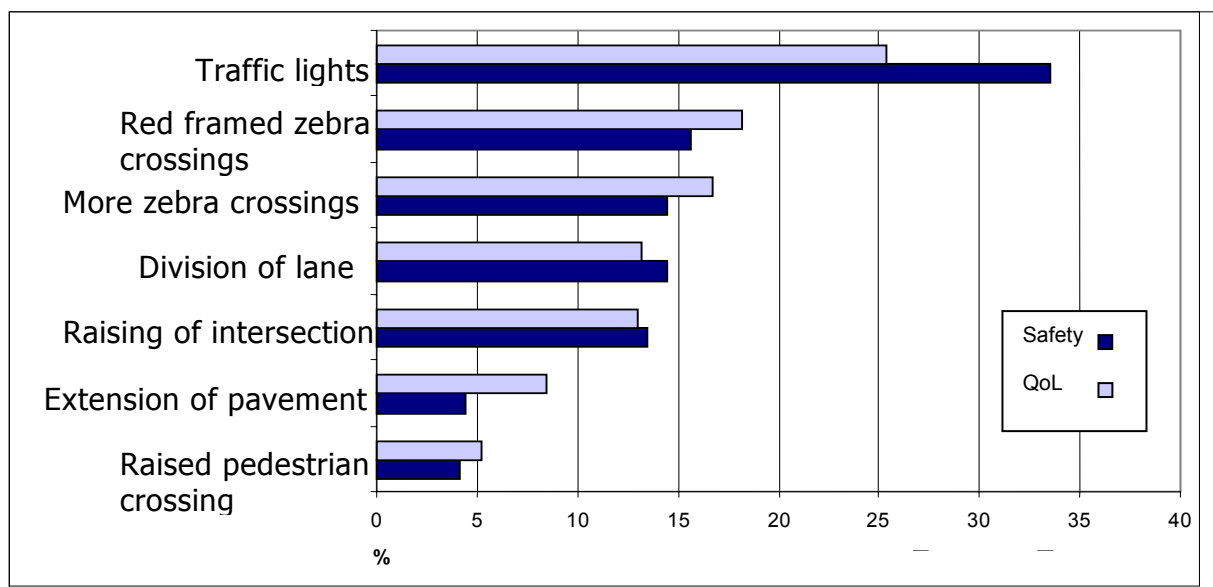
Table 6: Self definition of respondents regarding mode choice

	n	%
Pedestrian	116	28,5%
Cyclist	29	7,1%
Car driver	74	18,2%
User of public transp.	186	45,7%
Else	2	0,5%
total	407	100%

## 6.5. Results

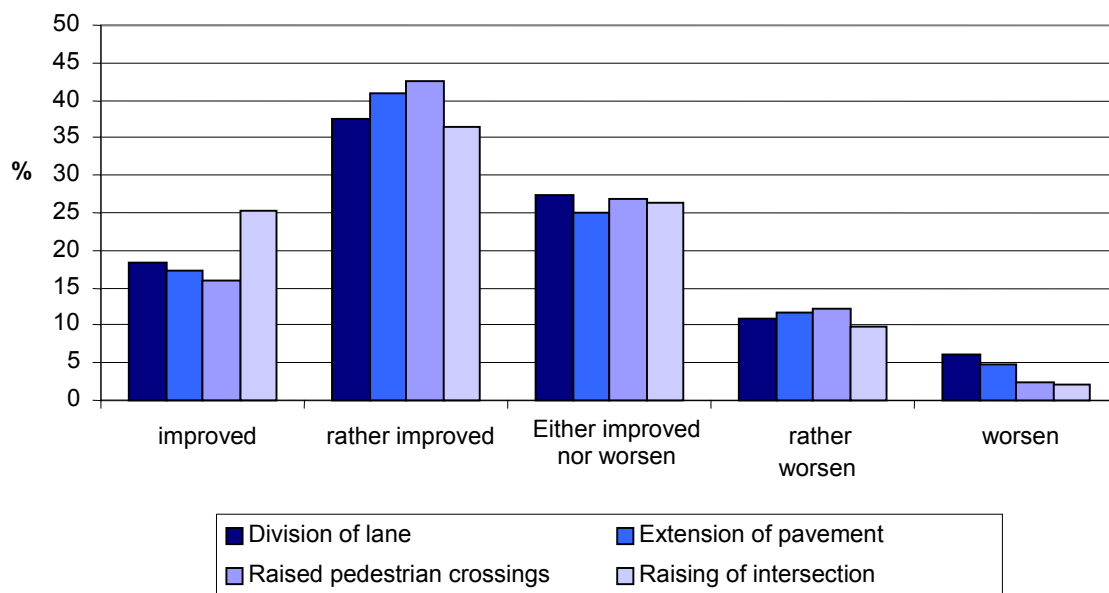
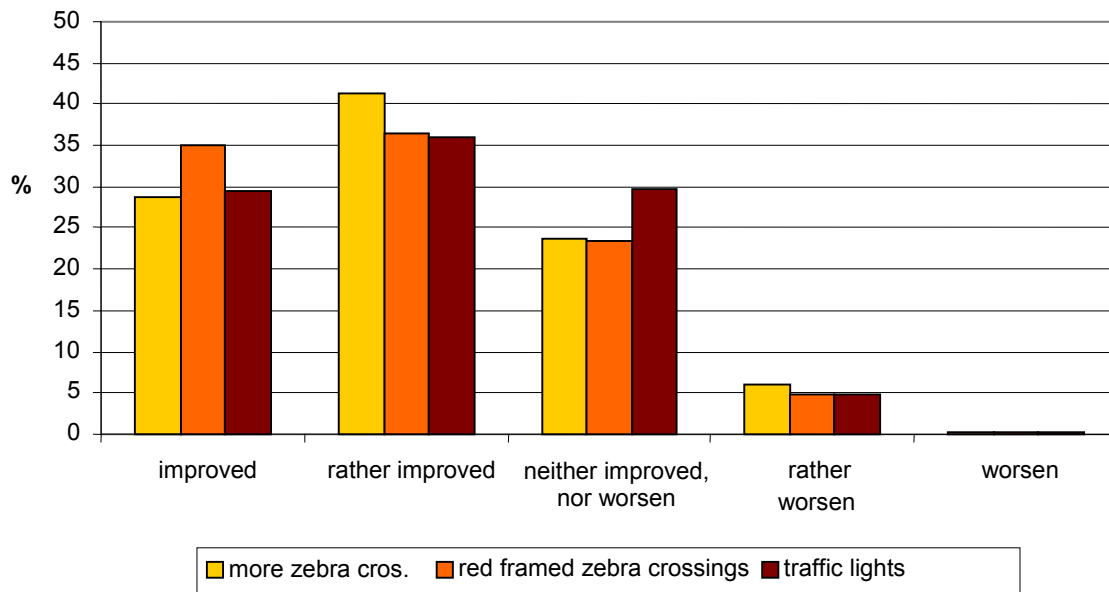
The answers of the respondents to the questions regarding safety and life quality are displayed below.

Figure 1: Which infrastructure has most importance for your personal safety and quality of life (QoL)?



Some questions concerned the implication of different measures regarding if the situation for pedestrian has improved or worsen.

Figure 2: How do you think the following infrastructure elements changed the situation for pedestrians?



## 6.6. Conclusions

### Safety and quality of life aspects:

- Traffic lights are estimated subjectively as being the best infrastructure measure – especially regarding safety for all traffic participants
- Differences between pedestrians and car-drivers regarding the estimation of infrastructure. Pedestrians assess red framed zebra crossings and the raising of the crossing significantly better for the comfort and safety of pedestrians than car drivers and cyclists do.

### Especially regarding the four selected infrastructure measures:

- Extension of pavement is the most appreciated one among the four measures in question regarding pedestrians

- No differences have been found between the four measures regarding:
  - safety of children,
  - safety of elderly,
  - comfort for pedestrians.
- All four measures in question were estimated as equally effective regarding safety.

Differences between respondents:

- No gender differences
- No significant differences between pedestrians and users of public transport means

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