



GENDER AND (SMART) MOBILITY

GREEN PAPER 2021



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GENDER AND MOBILITY

Dear reader,

Thank you for your interest in this report about gender and mobility.

The report has been developed by Ramboll Smart Mobility in partnership with and supported by the Ramboll Foundation, Helsinki Region Transport (HSL), Region Stockholm and Trafikverket in Sweden and VBB in Berlin Germany. We are very thankful for their support and the cooperation around this report. We would like to thank the Steering Committee - Sini Puntanen, Elina Brandt and Reetta Koskela, HSL Helsinki; Helen Maalinn, Region Stockholm; Verena Löw and Gabriela Felder, VBB Berlin; Neel Strøbæk and Mikko Leppänen, Ramboll Foundation and Jukka-Pekka Pitkänen, Markku Kivari, Erik Hedman and Hinrich Brümmer from Smart Mobility leadership team for their valuable input.



Helsinki Region Transport is a joint local authority managing public transport and the transport system in the Helsinki region. HSL is responsible for the preparation of the Helsinki Region Transport System Plan. HSL plans and organizes public transport in the region and improves its operating conditions. Helsinki Region Transport also procures bus, tram, metro, ferry, and commuter train services and approves the public transport fare and ticketing system as well as ticket price. HSL is responsible for public transport marketing and passenger information and organizes ticket sales and is responsible for ticket inspection.



VBB Verkehrsverbund Berlin-Brandenburg (VBB) is the public transport authority for the German metropolitan region including the city state of Berlin and the surrounding state of Brandenburg. As such, it is one of the biggest public transport authorities in Europe. More than four million passengers use the buses, metros, trains and ferries of around 40 transport operators organised within VBB on a daily basis.

VBB strategizes public transport services and is responsible for public tenders, a fair distribution of ticket revenues and the design of a common fare, ticketing, and information system in all of Berlin and Brandenburg.



Region Stockholm is responsible for all publicly-financed healthcare and public transport in Stockholm County. The Region Stockholm Assembly is also responsible for other overall issues within the county, such as regional planning and cultural subsidies.



Trafikverket is responsible for the overall long-term infrastructure planning of road, rail, sea and air transport in Sweden. Trafikverket's assignment also includes the construction, operation and maintenance of state roads and railways. Trafikverket are developers of society and plan ahead for a holistic integration of the entire transport system. In order for society to develop, the country's transportation must work. Increased accessibility is becoming increasingly important.



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EXPERTS, DATA PROVIDERS AND WOMEN IN GROUP INTERVIEWS

We also owe a big thank you to the gender and mobility experts that made themselves available to us for interviews so we could pick their brain and learn more about gender differences in transport and mobility. A big thank you to Professor Malene Freudendal-Petersen, Aalborg University, Senior Research Planner at TØI, Tanu Priya Uteng, Lector at Gøteborg University Ana Gil Sola, Affiliated Researcher at Chalmers University Tiina Männistö-Funk, designer and engineer Lieke Ypma, Dr. Ines Kawgan-Kagan, consultant Lena Osswald, Dr. Kalpana Viswanathan from Safetipin, Professor Wong Yiik Diew, Nanyang Technological University, Professor Gopinath Menon, former Chief Engineer of the Singapore Land Transport Authority and Mia Hyun, senior gender consultant from the Asia-Pacific region. Articles presenting their research, views and reflections in relation to gender and mobility make up part two of this report.

We would also like to give a big thank you to the 40 women who spent their free time sharing their thoughts around and experiences with traveling around their city.

In addition, we would like to thank the many organizations who have kindly provided us with gender segregated data: MaaS Global, VOI, Lime, Donkey Republic, Swapfiets, GoMore, Rejsekortet, Saga projektet and Movia.

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EXECUTIVE SUMMARY

THE PREMISE OF THIS PAPER

In Ramboll Smart Mobility we are committed to actively contributing to achieving The Sustainable Development Goals by providing access for all, ensuring effective mobility for all, improving safety for all, and securing green mobility for all.

In the spring of 2019, Ramboll in Germany was invited to take part in Chancellor Angela Merkel's "Girls Day" at the chancellery in Berlin. We had the pleasure of introducing young women to our work in the transport sector. Transport is part of the STEM sectors (science, technology, engineering, and math) where women have a significantly lower representation than men.¹

In the same week, we were also invited by the cycling organisation ADFC in Berlin to give a keynote at an event at the Danish Embassy and taking part in an all-female panel debate about the gender gap in the transport sector and the gender differences in transport and mobility in general.

Our participation in these two events sparked an internal debate and interest in the topic of gender and mobility. We decided to make this part of our green paper series² and contribute to bridging the data gender gap in transport. We ultimately wish to shed light on the need to include gender in transport planning, in design of new mobility services and in the creation of better mobility opportunities for everybody.

WHY GENDER DIFFERENCES IN TRANSPORT AND MOBILITY MATTER

In 1997 the United Nations Economic and Social Council (ECOSOC) endorsed "Gender mainstreaming" as a critical and strategic approach for achieving gender equality. The concept of Gender Mainstreaming is defined as follows:

"Mainstreaming a gender perspective is the process of assessing the implications for women and men of any planned action, including legislation, policies or programs, in all areas and at all levels. It is a strategy for making women's as well as men's concerns and experiences an integral dimension of the design, implementation, monitoring and evaluation of policies

and programs in all political, economic and societal spheres so that women and men benefit equally and inequality is not perpetuated. The ultimate goal is to achieve gender equality."³

Research shows that when gender is not explicitly part of the planning process, the solutions are most likely to primarily benefit men. Whereas the explicit consideration of gender throughout the process of planning, design, implementation, monitoring, and evaluation is more likely to create more gender equal solutions.⁴

Low representation of women among both decisionmakers, researchers, planners, engineers and designers in many sectors such as science, medicine, engineering and technology, combined with unconscious bias towards the average male are some of the reasons why gender-neutral and "planning for all" benefit men more than women.

Transport and mobility are not gender neutral. International Transport Forum has concluded that "gender is one of the most robust determinants of transport choice".⁵ Still, gender mainstreaming is not systematically included in transport and mobility planning and projects. In addition, gender segregated data on travel behavior, trips, needs and concerns in mobility is either not collected or not analyzed systematically. This creates an unconscious bias towards men in transport and mobility planning and design.

So how does this manifest itself - and what does it mean for everyday life?

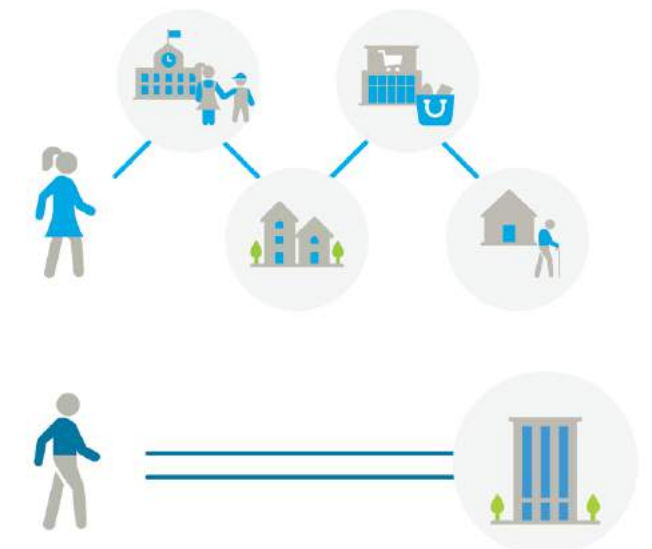
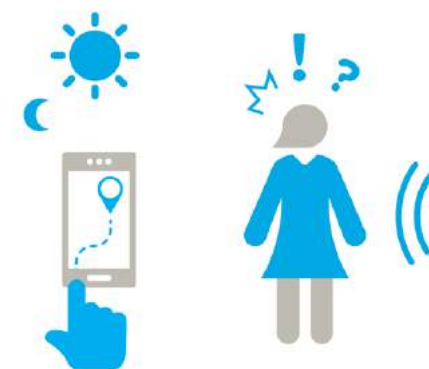
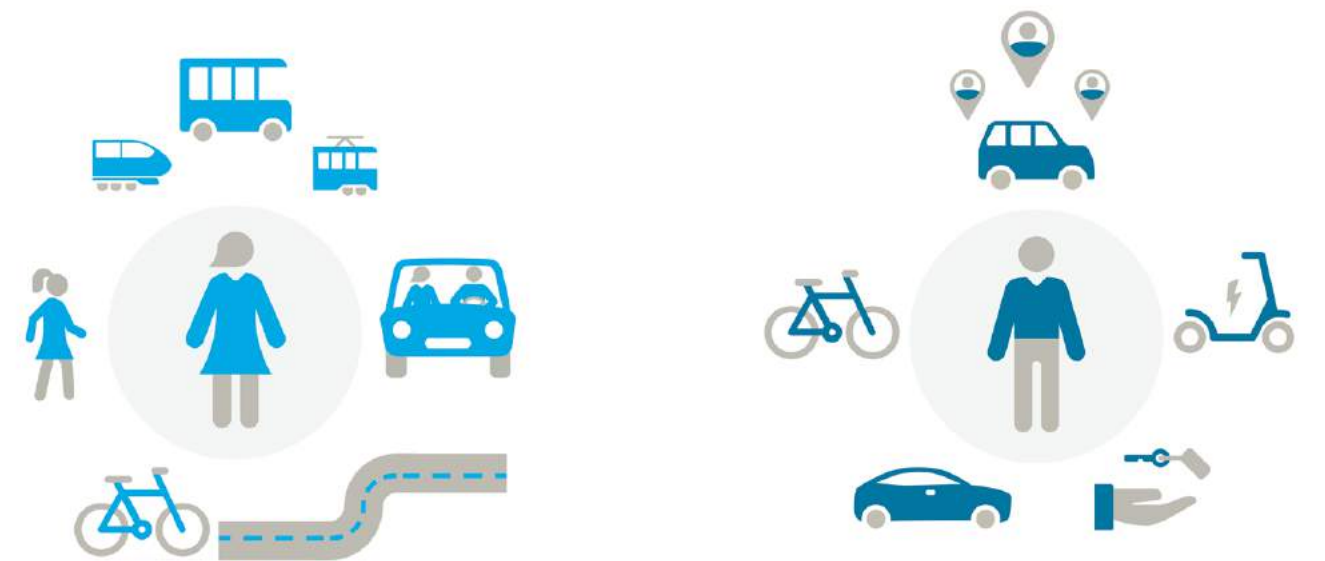
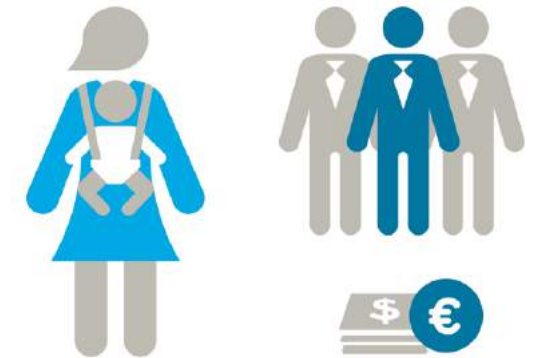
The existing international research shows that women walk and use public transport (especially busses) more than men. Men drive cars, cycle and use new mobility services like carsharing, ridesharing, bike sharing and e-scooters more than women. However, when cycling infrastructure is safe and coherent we see that women and men cycle equally as much. Men are also more likely to have a driver's license and have access to a car than women, while women are more likely to be a passenger than to drive themselves.

Men and women have different trip patterns. Women's participation in the labour market is lower than men's and women oversee 75% of the unpaid care work in the world. This means women are more likely to trip

chain making several, shorter trips while carrying groceries and/or accompanying children or older family members. Men's trips are more likely to be individual trips commuting to and from work. The male trip pattern has shaped our transport policies and transport systems. This means our transport networks and systems do not serve women's needs for multiple, shorter trips in off peak hours.

Fear of harassment and assaults also mean that women worry more than men about which routes to take and what time they travel. Additionally, transport pricing structures don't always take trip-chaining into account. Public transport hubs and stations are not always designed for people traveling with kids, prams, strollers, and groceries or accompanying people with reduced mobility.⁶

By increasingly gaining insights into gender differences in mobility, we hope to contribute to creating better and more equitable mobility for women, while at the same time making mobility better and easier for everybody as 'women-friendly' designs and solutions also work for men traveling with kids, groceries, accompanying family members, etc.



SCOPE

The purpose of this report is to shed light on gender inequalities and differences in transport and mobility and to contribute to bridging the data gender gap to create better mobility for all.

This report takes its starting point in international research. It then zooms in on seven national contexts (Finland, Norway, Denmark, Sweden, Germany, India, and Singapore) for which local expert interviews, surveys and focus groups in the seven capital cities were conducted.

The report is an attempt to create more awareness of the importance of gender in transport and mobility planning and design by identifying gender differences in behavior, views, and challenges that the users are facing in their daily lives. Through the focus group interviews we provide a voice to real-life women to understand their thoughts, needs, experiences, fears and joys and to spark a discussion about different ways to secure more gender equality in the transport sector.

METHODOLOGY

Through desktop research we have collected both national and local gender split travel behaviour data available in the seven chosen geographies covering both modal split, trip purpose, trip length, car ownership and gender split in users of new mobility services and digital mobility tools. Selected data is presented in the report.

We have conducted interviews with gender and mobility experts in our geographies and asked them to explain the current local status, structural barriers, and potential for change. The experts' insights can be read individually if you are particularly interested in a specific geography. But together, they provide an overview of the structures, cultures, challenges, problems, and solutions in the different countries we're looking into.

Based on the insights from the expert interviews, we designed and conducted surveys in seven capital cities. The surveys were conducted by the YouGov analysis institute. A total of 3,525 CAWI interviews⁷ took place with people aged 18-69 living in Helsinki, Espoo and Vantaa, and the greater capital areas of Oslo, Copenhagen, Stockholm, Berlin, New Delhi, and Singapore.

The survey was conducted during the Corona pandemic. In the questions related to usage of different modes and purposes related to these, the respondents were asked to report their behaviour before the Corona lock down. In the questions related to their perceptions and challenges related to different modes, Corona was included in the survey.

The purpose of the survey was to identify gender differences in mode preferences, the associations and challenges related to different modes and potential gender differences related to the use of digital mobility services.

Last but not least we conducted focus group interviews with women in all of the seven capitals in order to get more insights into their transport and mobility preferences, experiences and concerns, as well as the reasoning behind their choices.

WHAT DID WE FIND?

International research, the expert interviews and the collected existing data in Finland, Norway, Sweden, Denmark, Germany, India and Singapore show that there are gender differences in mode choice and that these are linked to a number of structural gender inequalities in society – gender power gap, gender work participation gap, gender pay gap, unpaid care work gap and parental leave gap.

Historical, cultural, and commercial definitions of the roles of women and men influences our reasons for traveling and how we prefer are required to travel in our daily lives. But these structural differences not only influence modal choice and trip purposes it has also influenced the design of our transport systems. We have prioritized individual commuting in peak hours and to a great extent failed to include other needs in planning and design.

Even though the purpose of our survey was not to identify travel behaviour differences, but rather to survey gender differences in associations and concerns related to different modes, both the global and the local results show the following gender difference in mode usage in an average month:

- Women walk more than men
- Women use bus and metro significantly more than men
- Men drive car significantly more than women
- Women are significantly more a passenger in a private car
- Men cycle significantly more than women
- Men ride motorcycles significantly more than women
- Men use new mobility services like e-scooters more than women
- Men and women use local train and tram/light rail and taxis equally much

The same results with small deviations are seen in Helsinki, Oslo, Stockholm, Copenhagen, Delhi, and Singapore. However in Berlin the modal usage differences are not as clear as in the other capitals.

WALKING

According to existing research, the experts we have consulted and the locally collected data women walk more than men. Walking is primarily used for grocery shopping, running household errands (other than groceries) and going to sport and other everyday leisure activities.

The gender distribution for the different trip types for walking are quite equal – except for “Leisure trips in the evening – going out to dinner, drink, theatre, cinema in the evening etc.” where more men than women indicate that as trip purpose for walking.

More women than men associate walking with “Active” and more men than women associate walking with “Slow”. In December 2020 when the survey was conducted, women to a greater extent than men also associate walking with being Corona safe.

With regard challenges and concerns, women to a greater extent than men point to traveling with groceries and bags and concern for personal safety (harassment, assault) as a challenge for walking.

Fear of harassment and assault when walking is one of the gender differences identified both in international research, by the local experts and by the women in our focus groups. When walking at night women in all the geographies share how they have different strategies to deal with their fear – from staying away from certain areas, not staying out too late, choosing shoes they can run in to carrying their keys in between their fingers in their pocket as a potential weapon.

CYCLING

About two thirds of the people surveyed have access to a functional bicycle. But the numbers mask big local differences. According to our survey, Singapore has the lowest bike ownership with 39% for women and 49% for men, whereas Denmark has the highest with 87% for women and 83% for men. Globally when asked to rate themselves in terms of experience, men significantly more than women rate themselves higher.

The number of people rating themselves as very experienced cyclists varies significantly across the seven capitals – from 10% for women and 26% of men in Oslo to 60% of women and 59% of men in Helsinki.

Cycling is primarily used for running household errands (other than groceries), going to sport and other everyday leisure activities and visiting friends and family locally.

As for associations to cycling, the global survey shows that more women than men associate cycling with being sustainable. In both Delhi and Singapore “Fun” is also top rated in relation to cycling. In Singapore it's clear from the focus group interviews that cycling for women is a leisure and exercise activity whereas it's for transportation in the Nordics.

The main challenges and concern identified in relation to cycling relates to “traffic safety”, which was identified by more women than men as a challenge. This sense of ‘not feeling safe’ was identified in the international research, by the local experts and by the women in our focus groups.

In Copenhagen where cycling is traffic safe women in the focus group interviews think of cycling as their “safe place” in relation to personal safety – they feel that they can out cycle any man on foot who would want to harm them. In both Oslo and Copenhagen women in the focus group interviews also identify fast “lycra guys” as a challenge as they cycle very fast. In India and Singapore, the lack of safe cycling infrastructure is identified as a barrier for cycling for transportation.

The market share of bike sharing schemes is still low, but data show that men use bike shares more than women. When asked how technology and digitization influence cycling, both women and men find it makes cycling easier.

PUBLIC TRANSPORT

The international research as well as the local data collected, show that women use public transport more than men. Across the different modes of public transport that we surveyed – bus, local train, tram/light rail and metro – the primary trip purposes were leisure trips in the city during the day – shopping, café, museums etc., visiting friends and family locally, leisure trips in the evening – going out to dinner, drink, theatre, cinema in the evening etc.

As for the challenges and concerns Corona safety, travel time and traveling with groceries and bags are identified globally as challenges and concerns related to public transport.

The survey not surprisingly given its timing, shows that Corona is top of mind when it comes to public transport. But what it also shows is that women significantly more than men identify and associate Corona with public transport. Since women use public transport more than men, this creates a real risk of growing inequalities as places open up and movement levels return in our cities.

How Corona will influence our travel and commuting habits only time will tell, but for public transport it is important to note that even though many people can and will be able to work from home to a greater extent than before Corona, many people cannot work from home. People in the service, hospitality, health and care sector cannot work from home and will still need access to public transport. The risk therefore is, as these sectors to a great extent employ women, the impact disproportionately effects women.

Women to a much greater extent than men identify personal safety and fear of harassment and assault as a concern in relation to public transport. In the focus group interviews, women from across geographies also expressed concerns and fears around waiting at bus stops and train stations. They said that fear of harassment and assault influence their travel behaviour – both in relation to the choice of mode and the time of day they traveled. Concerns were raised about both too few and too many people in these places, and

also that the design of public space, stops, stations and platforms and whether there are staff available influences how secure they felt.⁸ It is clear that the inclusion of considerations around women's fear of harassment and assault and the need to create public spaces and facilities where women feel secure when traveling alone is important. These considerations should be factored in and analysed more when developing new public transport facilities and improving the existing ones. When testing and developing autonomous public transport it's important to factor in how public transport personnel can give women a sense of security.

More women than men buy public transport tickets via apps and the majority of both women and men find that technology makes public transportation easier to use.

CARS

Both the international research, the experts we have interviewed, and our locally collected data show that men drive more than women. Men also to a greater extent than women hold a driver's license and have access to a car. Women are more likely to be a passenger in a car than men.

In our survey the use of a private car is primarily for leisure, weekend use, holiday trips out of the city, visiting friends and family locally, running household errands (other than groceries).

The survey shows that women to a greater extent than men think of the car as safe – both in relation to Corona and personal safety.

Women and men identify parking, price and CO² as challenges and concerns related to cars, but more women than men raised concerns that the car is not climate friendly.

This also comes through in some of the focus groups where several women expressed that they did not feel comfortable driving in the city, or that their husband drive when they are both in the car. Several felt that the car takes up too much space in the city and is not sustainable.

When it comes to technology half of all women and men noted that technology makes both car driving easier and living without a car easier. The latter corresponds with women using digital services for public transport more than men, and to them driving less.

NEW MOBILITY SERVICES AND DIGITALIZATION

According to existing research, the experts we have consulted and the locally collected data men use new shared mobility services like bike sharing, e-scooters, carsharing and ridesharing more than women.

In relation to e-scooters our survey shows that women and men both identify e-scooters as traffic unsafe. «Traffic unsafe» is the most associated word for both men and women across all geographies and the primary challenge and concern for both genders. Women to a greater extent than men identify it as a challenge and concern.

For carsharing, our survey shows that women and men identify carsharing as sustainable, but women to a greater extent than men. Price is also identified as a primary challenge and concern globally.

In relation to ridesharing, Corona and sustainability are the primary associations. With regards to Corona the majority of women identified this as a concern. Significantly more women than men also identify personal safety as a challenge and concern related to ridesharing. This was also addressed in the focus group interviews, where the discussions focused on what was seen as more safe – private ridesharing or taxis – and how different providers and apps have incorporated women's concern for personal safety into their solution (via sharing location, rating of driver etc).

DIGITALISATION AND TECHNOLOGY

According to our survey men and women use technology equally much – with the majority of women using it for public transport and men for new mobility solutions and route planning services related to car driving.

An argument often heard in relation to this is that women adapt slower to technology than men. But this does not shine through in the results of either the survey or the focus groups. The women demonstrated that they loved how easy apps and travel planning maps and services make traveling and how it can help them “optimize” their time. They also identify how apps can help make new mobility services like ridesharing feel more personally secure. That women use shared services like carsharing, ride sharing and e-scooters less than men does not, therefore, seem to be because the services are digital but rather because the services does not fit their needs. For instance, when they are required to trip chain with groceries and bags, accompanying children or other family members, or where they have concerns related to either traffic safety or personal security. But it also seems that there is a significant potential for designing new services that cater for these needs – and thus at the same time cater for men with the same needs and concerns.

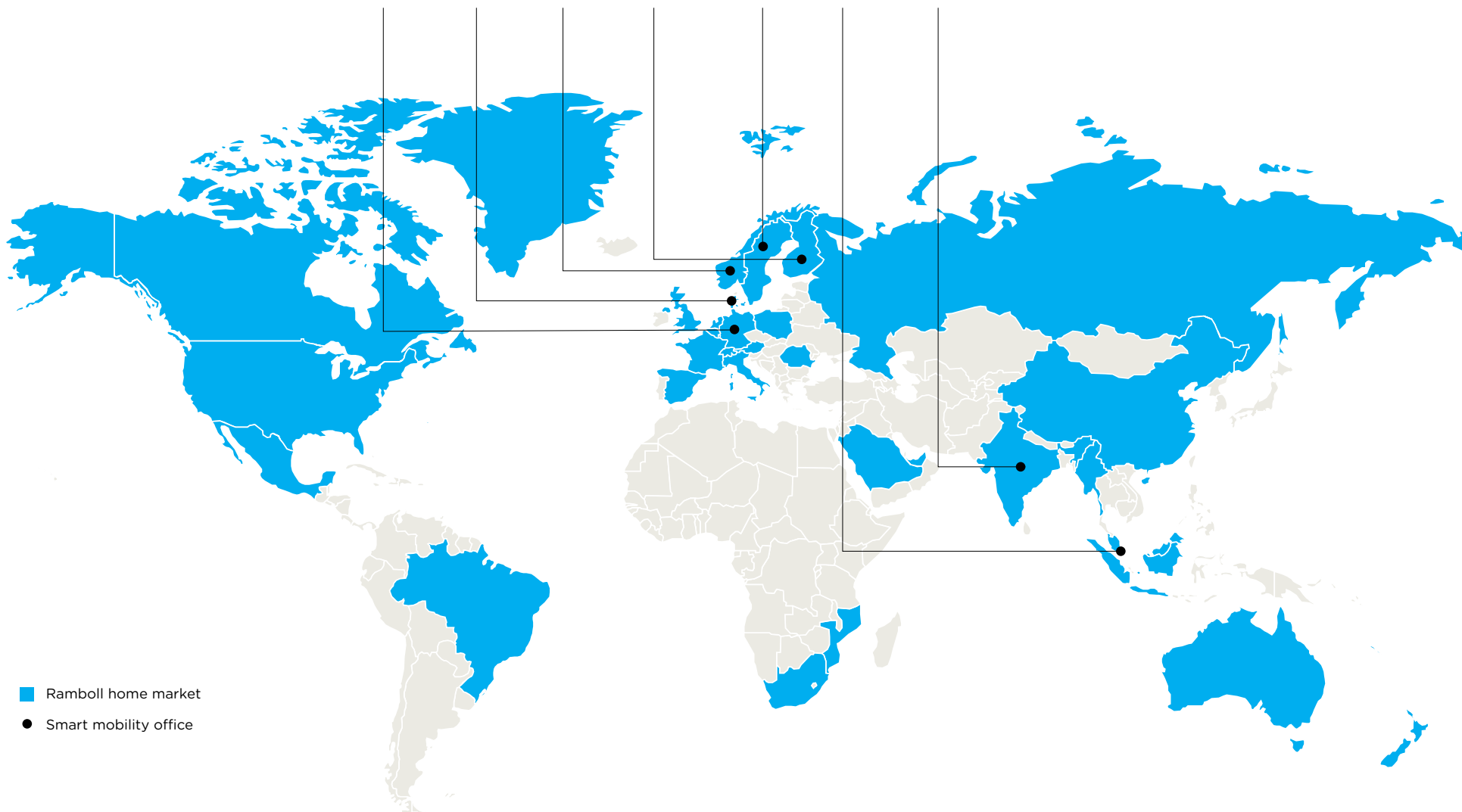
SUSTAINABILITY

Women to a greater extent than men travel by sustainable modes and consider sustainability in relation to their modal choices. Creating a more sustainable, CO²-neutral, and green transport sector means making sure it is attractive for women to continue to be able to travel the way they do and making it more attractive for more men to change to more sustainable modes.



THE PREMISE OF THIS PAPER

Ramboll Smart Mobility is a division in Ramboll Transport with about 200 people working with traffic and mobility planning. Geographically we cover seven countries – **Finland, Norway, Sweden, Denmark, Germany, India, and Singapore**. This report covers these seven countries and a team of both women and men from Smart Mobility has worked on this report.



■ Ramboll home market
● Smart mobility office

Gender split employees in Ramboll 2021	Male	Female	Not declared
Ramboll Total	65%	34%	1%
Ramboll Transport	69%	30%	1%
Ramboll Smart Mobility	74%	26%	

This paper came into being for two main reasons.

In Ramboll Smart Mobility we are actively contributing to archiving The Sustainable Development Goals⁹ by providing access for all, ensuring effective mobility for all, improving safety for all, and securing green mobility for all.

As part of our work with sustainable mobility we choose every year to produce a green paper, a discussion paper that addresses how we can make transport and mobility more smart and more sustainable. The purpose of these papers is both to investigate a topic to educate ourselves and to engage in discussion with our clients, partners, as well as other stakeholders in the transport industry. In 2019 we published the report "WHIMPACT - Insights from the world's first Mobility-as-a-Service (MaaS) system". In 2020 we published "ACHIEVING SUSTAINABLE MICRO-MOBILITY" addressing how identification of tangible key performance indicators (KPIs) for micro-mobility could help cities better understand how sustainable their micro-mobility programs are.¹⁰

In the spring of 2019 Ramboll in Germany was honoured to be chosen to take part in Chancellor Angela Merkel's "Girls Day" at the chancellery in Berlin. We had the pleasure of introducing young

women to our work in the transport sector. Transport is part of the STEM sectors (science, technology, engineering, and math) where women have a significantly lower representation than men. According to the European Commission only 22% of people working in the transport sector in Europe are women. According to OECD women account for less than 20% of the transport sector Worldwide.¹¹

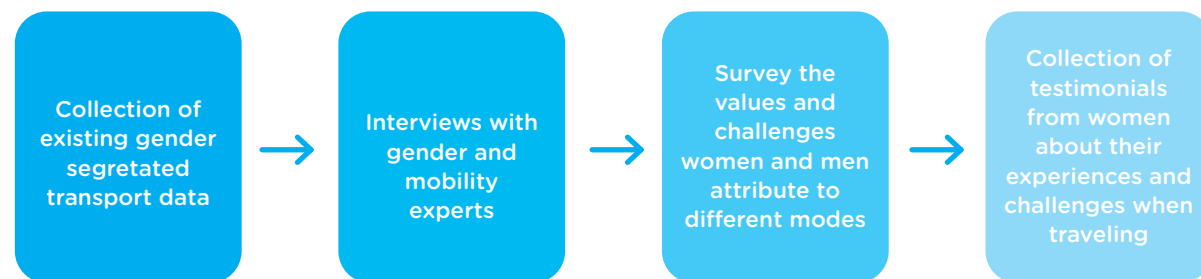
In the same week we were also invited by ADFC in Berlin to give a keynote at an event at the Danish Embassy and taking part in an all-female panel debate about both the gender gap in the transport sector and the gender data gap in transport and mobility in general.¹²

Taking part in these two events sparked an internal debate and interest in the topic of gender and mobility and we decided that our 2021 green paper should be about gender and mobility. We want to make our contribution to bridging the data gender gap in transport and put focus on the need for including gender in transport planning and design of new mobility services.

THE SCOPE OF THE REPORT

The purpose of this report is to shed light on gender differences and inequalities in transport and mobility and to contribute to bridging the data gender gap to create better mobility for all.

To do so we have collected and compared gender segregated data and knowledge from seven countries through desktop research, expert interviews, surveys and focus group interviews.



We have collected both national and local gender split travel behaviour data available covering both modal split, trip purpose, trip length, car ownership and gender split in users of new mobility services and digital tools. Selected data is presented in the report.

To learn more about the reasons – structural as well as cultural - behind the gender differences in the local transport behaviour, we identified distinguish gender and mobility experts in seven geographies. We conducted semi-structured interviews with the experts and present their views and knowledge about gender and mobility in the form of articles. They can be read individually if you are interested in a specific geography or you can read them all and get an overview of the structures, cultures, challenges, problems and solutions related to gender and mobility in the different countries we are looking into. All articles reflect the experts research and views.

On the basis of the expert interviews we designed and carried out surveys in the seven capitals. The surveys were conducted by the YouGov analysis institute. A total of 3,525 CAWI¹³ interviews took place with people aged 18-69 living in Helsinki, Vantaa and Espoo in Finland and the greater capital areas of Copenhagen, Denmark; Stockholm, Sweden; Berlin, Germany; New Delhi, India and Singapore during the period of 14-22 December 2020.

The survey was conducted during the Corona pandemic. In the questions related to usage of different modes and purposes related to these, the respondents were asked to report their behavior before the Corona lock down. In the questions related to their perceptions and challenges related to different modes Corona was included in the survey.

We address urban trips in and around the seven capitals. We have included all local modes available in the survey. However, where the base data is very low we have not included them in the report or the data appendix. We have not included intercity trains, long distance busses and planes in the data collection or survey.

In the following we present selected gender segregated results structured by mode covering the total survey and investigate how the local results in the seven capitals surveyed corresponds or differ from the overall results. In the appendix you find gender segregated charts of the seven local surveys. We have taken out results and charts that covered less than 30 respondents.

In this report we have presented the main findings of the YouGov survey. The survey results were analyzed especially with regard to mode usage, associations of various quality attributes to different modes and concerns with specific modes by gender. The results have been in most cases presented by gender, but additional



analyses have also been carried out to see, if gender is the explaining factor for differences consistently when comparing different age groups, employment situation, family situation and availability to car usage. These further analyses indicated that in general the gender difference is consistent; however, some interesting exceptions were noticed. That have been reported as well.

Mobility is about people's needs to move around in our daily lives. With this report we want to shed light on the gender differences in transport and mobility related to the perception and availability as well as challenges related to different modes and traveling around the seven capitals. We want to dig a little deeper below anonymous numbers and give voice to real women traveling around the seven selected capitals to understand their thoughts, needs, experiences, fears, and joys.

To do that we have conducted semi-structured focus group interviews with women in the seven capitals covered in this report in January and February 2021.

The original plan was to conduct the interviews in person, but because of the Corona lockdown they ended up being conducted online via MS Teams. The women's views and stories are presented through several articles organised by capital. As with the expert interviews they can be read individually or as a whole. The testimonials do not represent the views of all women, but shed light on some women's experiences, strategies, preferences, thoughts, and fears about transport and mobility.

The scope has been to zoom in from the general international research, to the seven national contexts for which the local surveys and focus groups in the seven capitals have been conducted in.

Based on the different data sources – reports, existing travel data, expert interviews, our own survey, and the focus group interviews, we present some recommendations. It's not an exhaustive list but should be seen as a starting point for discussion about how to secure more gender equality in the transport sector and in mobility and transport planning.

GENDER

We use the term "gender" in this report. We use the term to reference the socially constructed characteristics of women and men, not the biological sex. We also want to stress that when we talk about "men" and "women" we reference the general characteristics identified in data and research. That does not mean that all women are the same, or that all men have the same behaviour. The point is that if we identify the challenges women face and design solutions that make that easier it also benefit all the men doing the same.

In the survey respondents could indicate gender as:

- Woman
- Man
- Other
- Do not want to disclose

Globally 0,43% indicated "Other" and 0,31% "Do not want to disclose". These responses are not included in the gender segregated data but are otherwise included in the total data.

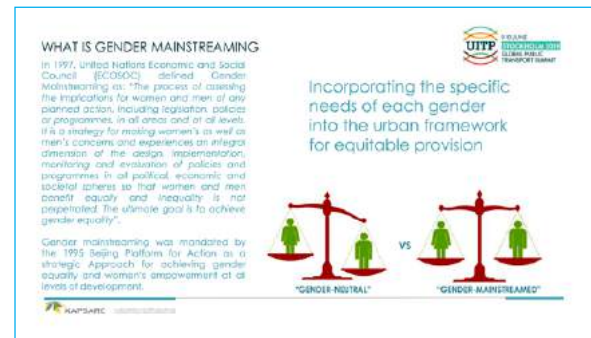
WHY GENDER MATTERS IN TRANSPORT AND MOBILITY

In 1997 the United Nations Economic and Social Council (ECOSOC) endorsed "Gender mainstreaming" as a critical and strategic approach for achieving gender equality. The concept of Gender Mainstreaming is defined as follows:

"...the process of assessing the implications for women and men of any planned action, including legislation, policies or programmes, in all areas and at all levels. It is a strategy for making women's as well as men's concerns and experiences an integral dimension of the design, implementation, monitoring and evaluation of policies and programmes in all political, economic and societal spheres so that women and men benefit equally and inequality is not perpetuated. The ultimate goal is to achieve gender equality... Gender mainstreaming does not replace the need for targeted, women-specific policies and programmes or positive legislation, nor does it substitute for gender units or gender focal points."¹⁴

At the UITP Global Public Transport Summit in Stockholm in 2019 Dr. Anvita Arora, Program Director, Transport & Urban, Infrastructure, KAPSARC illustrated in a presentation the difference between "Gender-neutral" planning and "Gender-mainstreaming". She argued that research shows that when gender is explicit not part of the planning processes the solutions are most likely to primarily benefit men. Whereas looking specifically at gender throughout the process of planning, design, implementation, monitoring, and evaluation is more likely to create more gender equal solutions. Low representation of women among decisionmakers and in general in many sectors like science, medicine, engineering, and technology, in addition to unconscious bias, contribute to why gender-neutral and "planning for all" benefit men more than women.¹⁵

Contrary to what many believe transport and mobility are not gender neutral. That has been established in many studies. International Transport Forum has concluded that "gender is one of the most robust determinants of transport choice"¹⁶ Nevertheless, gender main-



streaming is not systematically included in transport and mobility planning and projects. Gender segregated data about travel behaviour, trips, needs and concerns in mobility are either not collected or used systematically when planning transport and mobility.

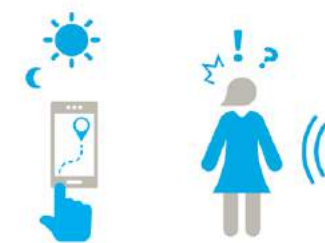
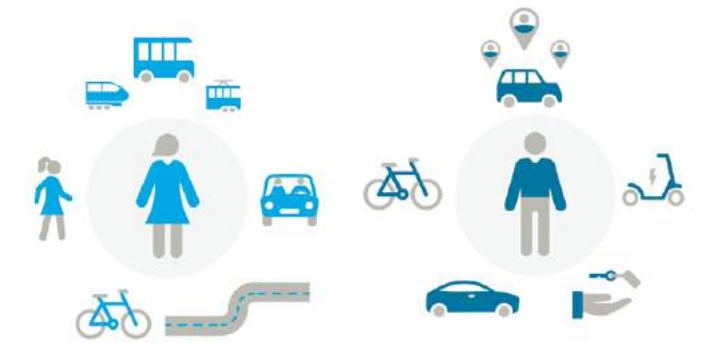
The existing international research shows that women walk and use public transport (especially busses) more than men. Men drive cars, cycle and use new mobility services like carsharing, ridesharing, bike sharing and e-scooters more than women. Men are also more likely to have a driver's license and have access to a car than women, while women are more likely to be a passenger than to drive themselves.

Men and women also have different trip patterns. Women's labor work participation is lower than men's and women oversee 75% of the unpaid care work in the World. That means that women are more likely to trip chain making several, shorter trips while carrying groceries and/or accompany children or older family members. Men's trips are more likely to be individual trips commuting to and from to work. The male trip pattern has shaped our transport policies and transport systems. That means that our transport networks and systems does not to the same extent serve women's needs for multiple, shorter trips off peak hours.

Fear of harassment and assaults also mean that women worry more than men about which routes to take and what time they travel and because of the gender pay gap also don't have the same resources available for transport and mobility.¹⁷

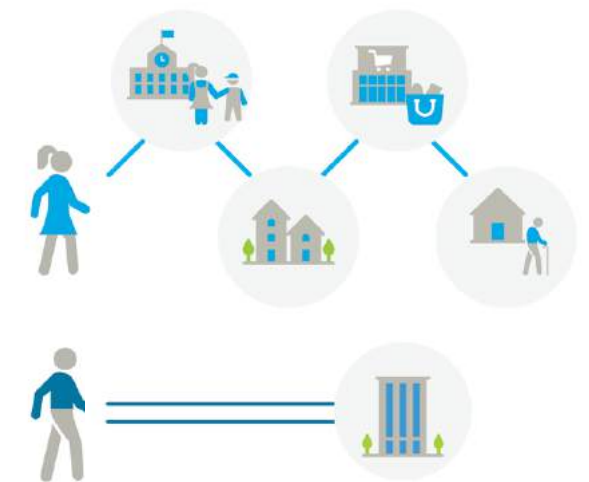
GENDER DIFFERENCES IN MODES

1. Women walk more than men.
2. Women use public transport more than men.
3. Women cycle less than men if there's no or poor cycling infrastructure.
4. Men drive more than women. Women are often the passenger.
5. Men use new mobility services more than women.



GENDER DIFFERENCES IN TRIPS

1. Women travel shorter distances per trip than men.
2. Women trip chain and have multiple stops to a greater extent than men, who generally have an A to B trip pattern.
3. Women to a greater extent than men accompany children or other family members and/or carry bags and groceries.



GENDER DIFFERENCES IN THE WORKFORCE

1. Women's work participation is lower than men.
2. Women to a greater extent than men work part time.
3. Women in general earn less than men.
4. Women in general have the majority of the parental leave.

In the following articles the local expert's will elaborate upon these internationally research findings and put them into the local context in the seven countries that we focus on in this report. As you will learn, the same gender patterns are present in all the seven countries. The seven experts highlight in the articles some of the complex explanations for these differences and what needs to change in order to create more gender equal transport and mobility.



INTERVIEW WITH HISTORIAN TIINA MÄNNISTÖ-FUNK

GENDER AND MOBILITY IN HELSINKI, FINLAND

Gender data is and has been compiled quite comprehensively in Finnish transport statistics. Statistics on current and past times show that gender is one of the most focal and dividing factors which explains differences in mobility behaviour. Over time, change has occurred in different parts of life which concern patterns and differences between men and women. However, in transport choices and possibilities many historical patterns and unconscious biases are still having an impact on the way we travel today. Historical studies can improve our comprehension on current trends in gender and mobility.

LACK OF GENDER AND MOBILITY RESEARCH

Historically Finnish transport statistics have focused on motorised transport, and therefore possibilities to make conclusions on more sustainable transport modes or long-term changes in travel choices are limited. Many historical statistics lack gender data which influences

our understanding of the impact of gender and mobility regarding transport planning and the status of today's statistics. Even though Finnish transport statistics have improved over decades and gender related data is now collected more comprehensively, we are still lacking in research on gender and mobility. Historian **Tiina Männistö-Funk** points out that even though we see the differences in mobility patterns of men and women, we have not acknowledged its importance.

TIINA MÄNNISTÖ-FUNK

Mrs. Tiina Männistö-Funk received her Doctoral diploma in 2014 and has been granted a docent title in History at the University of Turku, Finland. She has studied environmental issues and gender roles in urban mobility and public space. She has concluded a historical research study focusing in role of gender in walking by studying thousands of street photographs taken between late 19th century to late 20th century in the city of Turku. In the research she studied walking and cycling, transport mode changes and their evolutions through time, spatially and by gender.



Transportation might seem gender equal to many, and individuals might feel their mobility choices are not impacted by gender. Observing the data and statistics by conducting research can help us to identify statistical differences between genders, but also to understand the deeply ingrained societal and cultural reasons behind the numbers. Where are men and women travelling to? Do these trips involve other people? Which tasks or errands are determining the need to travel? Which wants and needs might men and women have while travelling? – some examples of the questions we should ask ourselves and focus our resources in research in the future. Männistö-Funk emphasizes that “Different factors that affiliate to the way we travel, such as need for trip chaining, origin or destination locations, selected transport modes and whether you are travelling alone or with company, determine how well transport system supports our travel patterns. Without data, research, and good knowledge we are not able to improve equality in our transport system and change patterns that originate far back in history.”

Männistö-Funk also notes that the historical point of view helps to gain a better understanding of today's transport system and the role of different modes. The way our transport system and public spaces are built up over decades, are dependent on various trends in different times. By understanding the impact of different actions in the past, we can create change with clear vision of the present and the future.

FEMININE MOBILITY CHOICES ARE MORE SOCIAL AND SUSTAINABLE

“Historically Finnish transport system hasn't promoted all mobility choices equally”, Tiina Männistö-Funk says. Since the mid-twentieth century, city-planning has facilitated and encouraged moving in a fast and efficient way that promotes the use of personal car. Furthermore, in this paradigm sustainable mobility choices and other feminine mobility patterns were ignored and harmed by the car-centric city planning. Nowadays sustainability of all forms has become a focal element in transport planning.

Women are more likely to be passengers in a car than men, and men are more often the owners or main users of family cars in Finland. Even the lower share of women's driving license ownership doesn't fully explain the difference. Historically the same kind of pattern can be seen for example in the way in which working men often controlled the use of one expensive bicycle in the family, in the beginning of the 20th century. The underlying structural issue is women's continuously poorer access to the most expensive modes of mobility. As a result, women travel more by other means than by car.

Statistics show that Finnish women travel shorter distances than men but spend more time travelling. Women also make more daily trips than men. Women travel more to visit family or friends, do shopping, and accompany others whereas men travel more than women for work related trips. Männistö-Funk's research points out that historical pictures reflect the same phenomena: for instance, female pedestrians being the most numerous and continuously large group on the urban streets, reveals gendered patterns and practices of walking. Walking women are often accompanied by children or other women, or they carry items while walking. Trips made together promote social interaction which can help strengthen tolerance and trust within the society. We don't want to promote a transport system which steers us to travel alone but instead to support and encourage sociality. “By promoting mobility choices that are characteristic for women, we promote both sustainability and sociality in mobility”, Männistö-Funk says.

CULTURAL NORMS STEER OUR CHOICES

Our choices in transport reflect cultural norms that we learn starting from children's upbringing and continuing into adulthood. E.g. when promoting cycling, we know that the readiness to make changes in one's mobility patterns originates from what is normalised in local culture.

In Helsinki capital region, it's more common for women to use shared city bikes than men. Tiina Männistö-Funk underlines, that to make reliable conclusions, this is a matter that should be researched further by qualitative methods. Nevertheless, she brings up a possible explanation that city bikes being parallel to public transport, women might be more receptive also to this shared mobility mode. It's a matter of cultural normalisation as in Finland women use public transport more often than men. On the other hand, city bikes might also fit well with women's need for trip chaining and their multifunction way of travel. Similarly, men might use a car or e-scooters more often because of a cultural normalisation which encourages boys to have interest in motors, other technical solutions, and new innovations in technology. There can also be other explanations, but regardless, we can't escape the impact of culture in our behaviour.

Cultural changes are slow, and history shows us that regulation, such as seat belts and speed reduction, have played a great role in change of attitudes. Männistö-Funk notes, “To develop more sustainable transport is a big challenge, but the greatest challenge is to replace the old-fashioned ways of thinking, e.g. regarding personal car driving being efficient. By succeeding in this, we bring more equity to mobility.”

MÄNNISTÖ-FUNK HAS PUBLISHED SEVERAL ARTICLES E.G.:

1
Title: The gender of walking: female pedestrians in street photographs 1890-1989 (2019)

Publisher: Urban History (2019), 1-21 (in open access).

2
Title: Recovering Sustainable Mobility Practices: A Visual History of Turku's Streetscape 1950-1980 (2020) Publisher: A U-turn to the Future, a Sustainable Urban Mobility since 1850. Brehahn Books.



THIS ARTICLE IS BASED ON AN INTERVIEW WITH TANU PRIYA UTENG, SENIOR RESEARCHER AT TØI

GENDER AND MOBILITY IN NORWAY

Gender differences in mobility and transport will widen if the design and deployment of smart solutions keeps favoring young, educated, high-income, Caucasian men and thus end up favoring a relatively small group more than others.

Norwegian men and women have the same travel pattern differences as men and women around the world, but a more regulated transport sector in countries of the global north like Norway, have affected these differences.

Tanu Priya Uteng, a senior researcher at TØI (Institute of Transport Economics) in Oslo, Norway, thinks that role demarcation and preferences are the main reasons for these differences in Norway. Priya Uteng says: "Women have a stronger preference for public transport, walking, cycling, and they don't have an emotional attachment to cars like a majority of men do." Masculinity, to a great extent, has been defined by

strong attachments to cars and other machines, were they bond emotionally to them. Branding and marketing are also an explanation, where cars traditionally have been marketed for men and not for women. On the other hand, machines like dishwashers, and vacuum cleaners were, and are still primarily targeted at female consumers.

When it comes to traditional role delineations, women are still the primary care takers of children. This role delineation very much exists in the global north as well, even though gender roles have been diluted in recent decades.



TANU PRIYA UTENG

Tanu Priya Uteng has over 16 years of experience of topics related to gendered mobilities. She is a senior researcher at TØI (Institute of Transport Economics) in Oslo, Norway. Priya Uteng has a Bachelor and a Master's degree in the field of urban planning, and defended her PHD in transport planning on the topic of interlocking of gender and ageing in the transport planning domain.

In March 2020, Priya Uteng published her third book, *Gendering Smart Mobilities*, in the series of her works on mobilities. The book takes a critical look at the idea that technical solutions will blindly solve the future mobility challenges and points out that developments so far have excluded certain groups in society, especially related to gender. Her first book in the series, *Gendered Mobilities*, was published in 2008.

THE CHALLENGES AND THE SOLUTIONS

In Norway, there is both a written and unwritten understanding towards achieving gender equality, but when it comes to the transport sector, there is very little knowledge on how to move forward. This leads to planning the urban and transport systems which end up serving primarily men. "A lot of work has been done in the research domain, but the practice domain is still lagging. It is about a continued focus on building knowledge and how to integrate this knowledge in practice." Priya Uteng says.

Traffic impact and environmental studies are a part of the routine processes of transport planning, but no such pre-feasibility studies are undertaken from a social point of view. Priya Uteng thinks that pre-analysis of gender and demographics, and who benefits from the different kinds of implementations and measures, are one way of taking control of the gender divide. And there is not just one solution. She says: "It's basically about being conscious of the fact that transport has huge social repercussions. And the first step is to simply acknowledge this fact and then build both data collections and analyses towards that end." It is thus necessary that disaggregated data collection and analyses inform transport decision making.

GENDER SPLIT IN NEW MOBILITY AND TECHNOLOGY

When it comes to new mobility solutions such as bike sharing, studies have shown there continues to be a difference in usage between men and women and oftentimes these are perpetuated by the system design. For example, the docking stations for the shared bike system in Oslo were initially placed only in central areas where mostly men dominated employment sectors are located. The peripheral areas, where a relatively high share of women is both working and living, did not see the provision of these docking stations in the initial stages and thus women's uptake of the city bike system was relatively delayed. This gap was reduced after docking stations were placed in the city's peripheral areas. Priya Uteng concludes that the differences in use of shared bikes, was therefore strongly connected to their availability in Oslo. Further, literature review reveals that issues related to costs, access to a credit card, internet on the mobile phone etc., have also affected men and women differently.

For another upcoming smart solution, car sharing, it was found that families with young children, especially those living in the central areas, are willing to use it and forego car ownership, but issues such as non-availability of child seats affected the actual uptake of this solution.

"If you ignore 50 % of the population, you're not really making a solution that is sustainable. If you want to make sustainable solutions, it has to address both genders and the different demographic groups."

Tanu Priya Uteng
senior researcher
TØI

Regarding the question whether smart technologies even out or widen the differences between men and women, Priya Uteng thinks that it will lean towards the latter if the design and deployment of smart solutions are not handled properly. "If you keep launching smart solutions which mostly favor young, educated, high-income, Caucasian men like research on sharing services indicate, smart mobility solutions will end up favoring a relatively small group much more than other groups".

THE IMPORTANCE OF GENDER IN TRANSPORT PLANNING

Transport projects are sticky. Transport infrastructure has a lifespan of at least 50-60 years, meaning that any problems they cause cannot be 'unraveled' so easily. Also, investment costs are considerably high. Priya Uteng's point is that it is absolutely essential to do some (social, and not just environment and economic) homework before going ahead with infrastructure projects, rather than regret the outcome later.

In other words, we need to make gender and social impact assessments part of the routine in planning processes just like studies conducted on traffic, economic, and environmental effects. Pre-feasibility and post-feasibility studies need to be undertaken

to answer questions like who is using the system and how are they using it, as well as why is it not favoring certain groups, how can it be made better, etc. It is of paramount importance to bring research and practice together. If this doesn't happen, the potential net-effect is essentially zero.

Priya Uteng suggests that Norway already has a lot of data to do meaningful assessments of existing gender gaps, but there is a lack of analysis; the government should take action to ascertain such analysis are undertaken and considered in decision making.

Things are moving in a more 'inclusive' direction under the aegis of the zero-growth objective, impacting restrictions on car driving, and compact city development. This has shifted the focus towards public transport, bicycling, and walking, and thus better favouring the modes primarily used by women. Priya Uteng thinks that urban and transport planning should be more consistent and should not focus exclusively on core city areas, but also on suburbs and smaller towns. Priya Uteng: "If you ignore 50 % of the population, you're not really making a solution that is sustainable. If you want to make sustainable solutions, it has to address both genders and the different demographic groups."



PUBLISHED BOOKS BY TANU PRIYA UTENG:

1

Title: Gendering Smart Mobilities, 2020
Editors: Tanu Priya Uteng, Hilda Rømer Christensen and Lena Levin
Publisher: Routledge

2

Title: Urban Mobilities in the Global South, 2017
Editors: Tanu Priya Uteng and Karen Lucas
Publisher: Routledge

3

Title: Gendered Mobilities, 2016 (1st edition 2008)
Editors: Tanu Priya Uteng and Tim Cresswell
Publisher: Routledge



THIS ARTICLE IS BASED ON AN INTERVIEW WITH ANA GIL SOLÁ,
ASSOCIATE SENIOR LECTURER IN HUMAN GEOGRAPHY AT UNIVERSITY OF GOTHENBURG, SWEDEN

GENDER AND MOBILITY IN SWEDEN

In order to bridge the gender data gap, Social Impact Assessments (SIA) and other qualitative methods for assessing impacts of traffic planning projects, should be included, and prioritized to a much greater extent in traffic planning.

Sweden has considered gender in policymaking for many years, but it is still not common practice and not yet an integral part of transport and mobility planning, according to **Ana Gil Solá**, Associate Senior Lecturer in Human Geography at University of Gothenburg, Sweden. This is a problem since transport planning and the solutions offered impact people's daily lives to a great extent.

Ana Gil Solá points out that, to have a gender-inclusive perspective on mobility, the options offered by transportation infrastructure must be seen in relation to the structures that define the schedules of daily life. She emphasizes that "People's lives are, to a considerable extent, about keeping times – preschool's closing, expectations on working hours at the workplace, etc. [...] If the responsibility of leaving and picking up the children at certain places and times lies more on the



ANA GIL SOLÁ

Ana Gil Solá is an Associate Senior Lecturer in Human Geography at University of Gothenburg, Sweden. She is widely published in the field of gender equality and mobility with publications on women's and men's work trips, gender equality in municipal transport planning, development of methods for assessing social impacts, and sustainable accessibility. Presently, Gil Solá is working on a project studying how men and women use adjacent services and places in the city where they live (the 5-minute city). This develops knowledge on what strategies women and men use in their daily lives to handle everyday life; how and why they make trips and choose the modes that they do – by choice or coercion? Most of the current research and planning processes assume that all points of destination or interest must be close and accessible within a short trip. But it is not necessarily the closest destinations that are chosen, we also tend to travel further away than necessary.

"Some of the gender (and social) inequalities within mobility is closely linked to an in-equal labor market."

Ana Gil Solá
Associate senior lecturer in human
geography at University of Gothenburg,
Sweden

woman in a household, then her strategy for daily life will in many ways be based on these times and places. This greatly affects a woman's possibilities of travel options and in some cases even more than the actual infrastructure."

According to Gil Solá, it is important to understand the traveler's different options and solutions for moving about. If women in general have a more complex way of combining trips, this must be studied. What type of trips do these combinations and chains consist of? Where, and for what need, do women travel? What is needed at the nodes and points of interchange?

GENDER AND THE LABOUR MARKET

Commuting to and from work is a big part of many people's daily lives. In Sweden, data shows that men generally commute longer than women. This might contribute to a household's prioritization of a man's choice of workplace over a woman's and even make the household move to a different city in favor for the man's choice of workplace. Gil Solá argues that the difference in how often this sacrifice for longer commutes and moving to another place happens may depend on more than just systematic and disproportionate income levels for men and women - dominating factors in play will have an element of both choice and coercion. Difficulties finding a job close to your home that matches your competence might occur regardless of your level of education. Therefore, one could argue that some of the gender (and social) inequalities within mobility is closely linked to an unequal labour market. This relation between gender and labor is a big obstacle for a fully equal transportation system.

WHAT DATA AND KNOWLEDGE IS NEEDED?

When describing people's mobility and travel habits, it is important to distinguish between the concepts of accessibility and mobility. Mobility described through national travel surveys, gives a basic understanding of how people travel, but the services and activities which are accessed through these trips - and why - is more difficult to describe through this type of data.

Accessibility, on the other hand, depends on other factors outside the actual movement, such as opening hours and how dispersed activities and services are. If well dispersed, people will need to travel further. One can have similar levels of accessibility to a specific service in the sense of ease but with different travel distances or time.

In transport planning, there is a tradition of working with quantitative data. In general, these methods are not questioned or criticized in the same way as qualitative methods such as interview studies or focus groups. According to Gil Solá, there is often a distrust of qualitative data with a great focus on its weaknesses. A general opinion of why there is less of a focus on qualitative data and it is not prioritized, is that it can be seen by some as less relevant within the field of traffic planning. Nonetheless, a qualitative approach is key to understanding the complex relationships people have in their day-to-day life. The 'everyday' is a complex system of time and space which cannot be understood through only a questionnaire or survey – it demands deeper interviews and focus groups that pinpoint why people make the choices they make. Qualitative methods deserve a higher status in the transport sector assessment. It should not replace or substitute quantitative methods, but rather work as a complement or input to that basis of knowledge.

Travel Habit Surveys (THS) raise deeper questions regarding purpose and motive which cannot be answered by the data provided within the surveys. Gil Solá notes that this demands more questions focused on the causes behind the choices and why people act a certain way: "The THS must be complemented with qualitative data. We must understand what lies behind decisions when travelling. There is a reason as why women may choose to use public transport more often and in different ways than men. It's important to distinguish the motives behind the trips – is it made by choice or coercion," Gil Solá says.

UNCONSCIOUS BIAS IN TRANSPORT PLANNING

Gil Solá also points to the fact that planners, to a great extent, rely on their own private experiences in their professional roles which creates an unconscious bias in transport planning: "Decision makers and planners consist mostly of a highly educated middle class people who may believe they have knowledge of the conditions of other socio-economic groups. [...] Planners of traffic and infrastructure must consider including people's experiences in daily life as a base for knowledge."

Gil Solá argues that planners and decision-makers need more theoretical knowledge of gender inequalities within the transport sector (and in general) to better substantiate the need to collect more qualitative data and information. Politicians may say that they want to implement a more gender equal transportation system, but it is oftentimes left to planners to understand what this means in practice. This can be exceedingly difficult when the transport sector lacks knowledge about how to equitably define problems and challenges - let alone solutions and ways for improvement. There is a need for a shift in power – hierarchical power structures and biases behind decision-making processes in the transportation sector must be identified and addressed as clearly as any other problem. To do so, a clear strategic direction should be established by politicians and other decision-makers.

Gil Solá recommends that transport planners utilize Social Impact Assessments (SIA) to a greater extent, compared to assessments of socio-economic and environmental impacts. Planning should also focus more on collection of qualitative knowledge and understanding of causes, contexts, and conditions for different socio-economic groups (for example, women), as well as other factors that affect travel patterns and behaviors.

FACT BOX

The 2020 employment rate in Sweden was 70.5 percent for men and 66.1 percent for women. Sweden is among the top countries with respect to female employment rates. The gap between male and female salaries is also narrowing. In 2016 and 2017, women's average earnings as a percentage of men reached 96 percent, when controlled for occupation, age, education, sector, and number of working hours.

Source: Published by Statista Research Department, Jun 30, 2020



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Planners of traffic and infrastructure must consider including people's experiences in daily life as a base for knowledge.

Ana Gil Solá
Associate senior lecturer in human geography
at University of Gothenburg, Sweden



MALENE FREUDENDAL-PEDERSEN

Malene Freudendal-Pedersen is a professor in Urban planning at Aalborg University. She has a multi-disciplinary background, combining sociology, geography, urban planning and sociotechnical systems. Her research is in the mobility paradigm of social science.

THIS ARTICLE IS BASED ON AN INTERVIEW WITH INTERVIEW WITH PROFESSOR MALENE-FREUDENDAL-PEDERSEN, PROFESSOR IN URBAN PLANNING AT AALBORG UNIVERSITY

GENDER AND MOBILITY IN DENMARK

Contrary to the general consensus in the transport and mobility sector in Denmark, men and women have different trip patterns, needs and values when it comes to transport and mobility. But that's not addressed in transport planning.

There's a consensus in Denmark is that men and women are equal, so equal that we do not have to address gender in transport planning and policy making. And those who do, are labeled fanatics or weak. That's the reality in Denmark in 2020 according to **Professor Malene Freudendal-Pedersen**. Freudendal-Pedersen is an expert in urban mobility and how digitalization and technologies influence daily life and mobility. "Men and women are fairly equal in their mobility patterns in Denmark - up until we have children. The long maternity leave and the fact that it's primarily women who takes care of the child the first year, will in most

families mean that the man continue to do what he did before the child arrived, whereas having a child means changes for the mother", says Freudendal-Pedersen. "The longer paternity leave the father has, the more equal distribution of responsibilities in the family afterwards. The mother's responsibility for the children is often rooted in the fact that she spends more time with the children when they are small."

"To care about the values attached to daily life, children, partners, family etc. is seen as "female" even though these values do not mean less to men. But we have created a world where caring about these values are attributed to women."

Malene Freudendal-Pedersen
Danish professor in City planning
Aalborg University

very male gendered, says Freudendal-Pedersen. She continues: "It's a barrier for creating a more sustainable transport and mobility sector. We talk about hard and soft measures. Hard and soft mobility. Hard and soft data. And the connotations linked to hard and soft are gendered. Soft is not seen as important as hard. The only way to have more equality in transport and mobility in Denmark is to start making sure that there is an equal distribution of men and women among decision-makers in transport in Denmark. We have to start at the top and it will filter down through the system."

SMART MOBILITY IS GENDERED

Digitalization and technology continue to influence transport and mobility and has been seen to play a bigger and bigger role in transport planning decision making over recent years. But technology is not gender neutral. There is a tendency for men to be more engaged by technology, and all its possibilities. While women tend to be more focused on how that technology might influence their daily lives. "To care about the values attached to daily life, children, partners, family etc. is seen as "female" even though these values do not mean less to men. But we have created a world where caring about these values are attributed to women", says Freudendal-Pedersen. "Engineers are not trained to discuss how technology affects us as people and how it influences our daily lives. Our feelings, hopes and dreams are not included in the discussion around digitalization and automation of mobility. It's mostly about what is technological possible." And just because something is technological possible it does not mean that it will work in practice. As an example, Freudendal-Pedersen uses driverless cars. "Which parent - man or women - will place a child in a driverless car, say goodbye and hope that technology makes sure the child arrives safely to the destination?"

Technology can also divert the discussion - like with the climate and sustainability agenda. Freudendal-Pedersen says: "Instead of addressing the root of the problem, the structures and our systems, we look to technology for solutions, but what works in theory does not always match the reality of everyday life." Addressing the root of the problems - like the fact that we have too many cars and too many people driving in Denmark is very painful and emotional. The car is associated with many feelings, but this attachment is not addressed by decision makers. "A female expert in automation said it very well in a conference: Automation is the technology of the future. And it will continue to be that way," quotes Freudendal-Pedersen.

MEN AND CARS

The most significant difference between men and women's mobility in Denmark is seen in the choice of mode types and usage levels. In families with one car the man drives the car more, while the woman walks, cycles and uses public transport. Women also bring children to school and kindergarten, do the food shopping and run errands more than men. "We see it in the national travel survey data, but we actually do not understand the extent of it. Travel pattern data are not segregated by gender in the Danish national travel survey data", she explains.

The car itself is also gendered according to Freudendal-Pedersen. The car is a male technology, the car is a symbol of power. A powerful man has a great car. Some of the power attributed to the car is rooted in the inherent disparity in safety between those in cars and those walking or cycling.

GENDERED TRANSPORT AND MOBILITY

But even though the general consensus is that gender does not play a role in mobility and transport in Denmark, mobility in Denmark does have gender biases. Freudendal-Pedersen points out that the decision-makers in the transport sector from transport politicians, to decision-makers in public transport, to the transport experts and economists advising the decision-makers are usually men. The analysis of demand or values used in transport appraisal is also commonly not transparent or objective. What counts and has value, and to what extent that influence decisions has been decided by these people. And the choices are

BOOKS BY MALENE FREUDENDAL-PEDERSEN:

- 1 Freudendal-Pedersen, Malene & Sven Kesselring (2017) Exploring Networked Urban Mobilities - Theories, Concepts, Ideas - Volume 1. New York and London: Routledge
- 2 Freudendal-Pedersen, Malene et al. (2017) Experiencing Networked Urban Mobilities - Practices, Flows, Methods - Volume 2. New York and London: Routledge
- 3 Freudendal-Pedersen, Malene (2009) Mobility in daily life - between freedom and unfreedom. Farnham: Ashgate.



THIS ARTICLE IS BASED ON INTERVIEWS WITH GENDER AND MOBILITY EXPERTS LENA OSSWALD, INES KAWGAN-KAGAN AND LIEKE YPMA.

GENDER AND MOBILITY IN GERMANY

The need to feel safe, secure, especially while traveling with children, influences a women's mobility more than a man. It also means that many women develop strategies when traveling alone at night, they prefer safe and direct transport modes and are challenged by the fact that many new mobility services do not cater for people traveling with children or other family members.

Germany is one of the most developed countries in Europe, ranking number four on the Gender Development Index. Nevertheless, according to the German statistic data from 2018, 47% of women in Germany have a part time job. The primary reason given is that they are taking care of children or other family members.

Amongst men, only 9% have a part time job and their primary reason is sport trainings or for professional development. In the jobs market, having children influence women's mobility patterns and needs to a much greater extent than it does men.

“Men have fewer destinations, and women multiple, but shorter distances. From statistical data it is seen that the longest drive for women is to and from work.”

Mrs. Ines Kawgan-Kagan
Gender Mobility Expert

WOMEN AND PUBLIC TRANSPORTATION

Women in Berlin use public transportation and walk more than men. Women are also more multimodal and need flexible, safe and punctual services because they, to a greater extent than men, have unpaid care work in the household. Ines Kawgan-Kagan, mobility expert in gender differences in sustainable urban mobility, points out that men travel longer distances but have a simpler travel pattern, while women travel shorter distances, but their trip chains have multiple destinations during the day: “Men have fewer destinations, and women multiple, but shorter distances. From statistical data it is seen that the longest drive for women is to and from work.” she says.

Even though many public transport stations have a poor level of accessibility, public transport is still considered, by women, the safest and most punctual mode of transport in Berlin. It is also highly integrated with other transport modes in Berlin, which makes multimodal travel more flexible.

WOMEN AND SAFETY

Feeling safe is very important for women when moving around Berlin. If possible, many women avoid traveling alone at night, but if they have to, they tend to choose the mode that provides the most direct link to home. Lieke Ypma, an expert on mobility solution design, studied the different strategies women use when traveling at night. These might be walking with their keys visible in their hand to make potential attackers think that they live in the area, sticking the keys between the fingers so it can act like a weapon or pretending to be talking on the phone while walking alone. She also pointed out: “Based on our qualitative work for “Female Mobility – a Longread” we can say that when feeling unsafe, women traveling at night on public

transport develop a range of strategies, such as sitting close to a driver in a bus, so they can call for help or to avoid getting bothered in the first place”.

MEN AND CARS

Men drive private cars and use carsharing services more often than women. One of the main reasons for that is cost. In Berlin, as well as countrywide in Germany, women earn less than men. Ines Kawgan-Kagan, as well as Lena Osswald, who is an expert in gender mobility and climate protection, both highlight media and advertisements influence on men's use of private cars. Advertising has sold us the idea that a successful, powerful men drive big cars, and that a car ‘complete’ them. Statistics show that men commute longer distances than women, which could be connected to the stereotype of men needing to care financially for their families. Lena Osswald says: “In Germany, 76.4% of women have a drivers licence compared to 84.8% of men – which is not significantly different. Under the age of 35 this gap is reversed, and more women have drivers' licences. Still, only about one third of private cars are registered to women. The large majority are registered to men which means that women have less often access to their own car.”

WOMEN AND CARSHARING / CARPOOLING

Kawgan-Kagen and Ypma both point out that even the women who can afford to pay for carsharing service still do not find the option attractive. This is commonly because women, at some point in the day, will be travelling with one or several children and the common lack of child seats in car share vehicles limits their access to them. Mrs. Kawgan-Kagen explains: “In that case it will be very complicated to organize a safe trip. Going shopping with children using carsharing and carpooling is also very complicated – many of these solutions simply does not fit women's needs.”

Ypma points out that pricing of ridepooling service does not include the option for “family tickets” which results in higher cost for women when traveling with older family members or children. But there are more factors which also influence this, such as time and safety: “First of all, it is known that users are mainly male. For women with kids, sometimes, there is no flexibility for ordering a ridesharing having a child seat option directly in the App. The mother would need to call to an operator and order a car, which will provide a suitable baby seat. Therefore, a woman would wait longer for a special car and she will need to plan her trip much earlier than usual. She might also want to make a

“Going shopping with children using carsharing and carpooling is also very complicated – many of these solutions simply does not fit women’s needs.”

Mrs. Ines Kawgan-Kagen
Gender Mobility Expert

stopover on her trip, and ticket structures don’t cater for that. Limited safety, longer waiting and non-transparent ticketing for stopovers and families currently make ride pooling a less attractive option for mothers traveling with children. These limitations also apply in other situations, for instance for an elderly woman who required the support of a family member. In that case, a ride pooling does not provide ticket flexibility. This person would need to pay a double price: for herself and for her family member. In such a situation it is reasonable to order a taxi and feel more comfortable, as well as maybe enjoy better service”, she said. If car-sharing booking were to include cars with child seats and ride pooling were to include more flexible pricing, then these services would not only be more attractive to women, but also to men traveling with children or carers.

WOMEN AND CYCLING

When it comes to cycling, Mrs. Lena Osswald emphasizes the importance of safe infrastructure. Women cycle less than men, and the recent research from the Start-Up FixMyCity in Berlin shows that women, as well as men, prefer cycling infrastructure separated from a car traffic and pedestrians, cycle paths which are wide enough and car traffic speeds reduced or even car free.

Many women’s mobility patterns include trips with kids to grocery stores or malls with little or no available bicycle parking by the entrance. Osswald points out

that we need more data and insights into good bicycle parking solutions that takes children and other cargo into account. In relation to data collection, shopping malls and other big stores could learn from the DB’s (Deutsche Bahn) approach. Through monitoring and surveying passengers needs at railway stations, DB has secured better integration between bicycles and public transportation by providing and allocating more space for bicycle parking at several big railway stations.

All three experts agree that there’s a need to bridge the data gender gap and improve mobility for women. There’s a need for much more structured and transparent approach to collect, analyse and use gender segregated data in transport planning.

When developing new mobility solutions and services, data and insights into women’s needs, concerns, and preferences, should be included from the very beginning of the process. There is a huge potential for creating digital solution that could make women feel and be safer, make trip chaining and traveling with children easier, and make accessing shops and groceries easier.

“Based on our qualitative work for “Female Mobility – a Longread” we can say that when feeling unsafe, women traveling at night on public transport develop a range of strategies, such as sitting close to a driver in a bus, so they can call for help or to avoid getting bothered in the first place.

Lieke Ypma, Hello Impact Founding Partner



MRS. INES KAWGAN-KAGAN

Mrs. Ines Kawgan-Kagan is a gender mobility expert and wrote her dissertation about gender differences in sustainable urban mobility at the TU Berlin. Mrs. Ines Kawgan-Kagan founded the AEM Institute in November 2020 to push the topic of accessible and equitable mobility and consult mobility providers to implement these topics into their products and services. Mrs. Kawgan-Kagan studied traffic systems,

sociology, public administration and basic business studies at the TU Berlin and at the University of Applied Science for Public Administration and Law Berlin, Germany and the Linnaeus University, Sweden. She researched at the German Aerospace Center (DLR) in Berlin, at the HTW Berlin. Currently she lectures at the HTW Berlin about mobility, transport and society and methods in empirical social sciences with a focus on mobility. She is council member and the German Ambassador of the Association of European Transport, creating an active link with the German community and keeping the AET up to date for current German trends in a transportation sector.



LIEKE YPMA

Lieke Ypma, MSc, is one of Hello Impact’s Founding Partners. She’s a Dutch innovation strategist, based in Berlin. With more than 15 years of experience, Ypma works on developing actionable strategies for mobility and beyond. Hello Impact takes a user centered perspective on strategy, driving multi-party collaborations to solve complex

problems. She has a great professional experience in mobility and user centered innovation topics. Trained as a designer and engineer, and based in Berlin, her specific experience in gender mobility covers research and design of mobility solutions to cover user needs. Lieke Ypma applies her strategic view on the entire development process, from explorative user research and participation, all the way to delivering services and products. Ypma is a lecturer at the Smart City Design Master Curriculum at the Macromedia University, an active lead of the Women in Mobility network, and a speaker at events that cover UX or Mobility, or both.



MRS. LENA OSWALD

Mrs. Lena Oswald works as a consultant on a positive transport transition. She helps social groups to build alliances in order to fight for green, inclusive, accessible transport for everyone. Her work connects with a climate protection in the

transport sector with organizational development and participation culture. As an activist she has worked with the Berlin Cycling Referendum and organisation Changing Cities for years in order to make transport in Berlin more human-centered. Her approach to feminist mobility is intersectional, as she is convinced that there is lots of overlapping layers of power structures and discrimination in the mobility sector and we need to address all at once.



the family. This also means that women must negotiate multiple trips (trip chaining) accompanied by children or elderly, oftentimes via a public transport system that is not sensitive to the needs of women. Third, is the issue of safety. Women in India face a lot of sexual harassment both using as well as waiting for public transport.

The challenges women face in transport and mobility are a direct consequence of the patriarchal nature of the society. Women are not given access to resources, and transport planning does not take women's needs and concerns into account. Dr Kalpana says: "Women are seen as weaker, unequal, property of the family, and are not given freedom."

According to Dr. Kalpana, the main challenges faced in India in terms of gender and mobility are safety and a lack of robust public infrastructure. She argues that investment in good, women-friendly public transport systems is needed. Dr Kalpana continues: "Since women do not have access to resources, in Delhi, when the free bus travel scheme came, women actually used public transport more. So, I think public transport should be highly subsidized so that more people use it, and more women use it." But public transport is not the only mode that should be improved. Improving infrastructure for cycling and walking would also benefit women in India. The public authorities should deal with severe harassment and violence that women are subject to in transport in India every day.

"Sexual harassment, violence, and poor infrastructure impact women's lives more than they impact men's lives."

Dr Kalpana Viswanath
Co-founder and CEO of Safetipin

THIS ARTICLE IS BASED ON AN INTERVIEW WITH DR KALPANA VISWANATH, CO-FOUNDER AND CEO OF SAFETIPIN

GENDER AND MOBILITY IN INDIA

Lack of personal resources, responsibility for unpaid care work, and subjection to sexual harassment and violence impacts the mobility of women every day in India.

Transport and mobility are not gender neutral. There is a lack of focus about women's trips, needs, and concerns in transport. In India as many places elsewhere in the world, there is limited focus on understanding women's travel needs and concerns, and subsequently, there is lack of data on the subject.

Dr Kalpana Viswanath, co-founder and CEO of Safetipin, a social organization working with a wide range of urban stakeholders including governments to make public spaces safer and more inclusive for

women sheds light on the current hurdles faced by women in India with respect to mobility: "Sexual harassment, violence, and poor infrastructure impact women's lives more than they impact men's lives."

The main differences between men and women's travel patterns in India arise primarily from three factors. First, women do not have the necessary monetary resources available in the family which limits the accessibility to different modes of transport. Second, women in India are responsible for unpaid care work in



DR. KALPANA VISWANATH

Dr Kalpana Viswanath is the co-founder and CEO of Safetipin. She has been working in the field of gender and urbanization for the past 20 years with several organizations, including UN Women, UN Habitat, and Jagori, among others. She has led large global projects and provided technical support on women's safety to several cities. She is a member of the Advisory Group on Gender Issues at UN Habitat, Chairperson of Jagori and a Board member of the International Centre for the Prevention of Crime. She was part of the committee that prepared a report on Women's Safety in Delhi for the city government.

Safetipin is a social organization working with a wide range of urban stakeholders including governments to make public spaces safer and more inclusive for women. They collect data through three mobile phone applications (My Safetipin, Safetipin Nite, and Safetipin Site) and present these to relevant stakeholders with recommendations. They also generate a safety score based on collected data and provide it in the My Safetipin app for users to make safe and informed decisions about their mobility.

More information at **Safetipin** | Safetipin, Creating Safe Public Spaces for Women | safetipin.com



THIS ARTICLE IS BASED ON INTERVIEWS WITH PROFESSOR WONG YIIK DIEW, NANYANG TECHNOLOGICAL UNIVERSITY, PROFESSOR GOPINATH MENON, FORMER CHIEF ENGINEER OF THE SINGAPORE LAND TRANSPORT AUTHORITY AND MIA HYUN, A SENIOR GENDER CONSULTANT FROM THE ASIA-PACIFIC REGION.

GENDER AND MOBILITY IN SINGAPORE

Patriarchal values, traditional mindsets and a male centric social system mean that women in Singapore are, to a greater extent than men, responsible for the unpaid care work of the family. This influences women's travel patterns and modes.

According to the United Nations (UN), Singapore is classified among countries known to have high equality between men and women. As measured by the UN Gender Development Index, Singapore achieved a score of 0.988, where the closer the ratio is to 1, the smaller the gap between women and men.

Equal opportunities have been provided to every Singaporean regardless of age, religion and gender. The compulsory education system in the country is one such example, where every Singaporean is guaranteed to receive at least basic education by one of the highest-ranked education systems in the world. As a democratic society, job opportunities have been offered to all, based on merit.

MEN DRIVE CARS, WOMEN USE PUBLIC TRANSPORT

Notwithstanding the availability of equal opportunities regardless of gender, gender disparities might be observed in certain aspects of the society, such as the mobility sector. Though families earning dual income are very common in Singapore, private vehicles are observed to be mainly driven by men instead of women. Professor Wong Yiik Diew, from the Nanyang Technological University, shared that it would be quite evident when one does a simple observation along the streets and finds that only one in 3 to 4 drivers are women.

Professor Wong added that this springs from the male centric social system ingrained in Singapore's society. While Singapore is a society where each race is encouraged to preserve its unique culture and traditions, most of these influences originated from the Asian culture where patriarchal values and traditional mindsets are deeply etched.

The gender disparity in mobility is not only seen within households but also within certain sectors of the transport industry. Professor Gopinath Menon, former Chief Engineer of the Singapore Land Transport Authority, highlighted that if one were to look at professional vehicle drivers in the society, there would be some female bus captains but almost no female heavy commercial vehicles driver for instance.

WOMEN ACCOMPANY CHILDREN, MEN TRAVEL ALONE TO WORK

As cultural values and mindset are found to be some of the potential reasons for gender disparity within Singapore's mobility scene, they could also have a significant impact on difference in travel patterns between men and women.

Based on the Land Transport Authority's Household Interview Survey conducted in 2016, 52% of the male population travel for work purposes, while only 37% of the female population travel for the same reason. A higher percentage of the female population is found to be travelling for other purposes such as dropping children to school, shopping, dining, and leisure compared to men. When interviewed, Mia Hyun, a senior gender consultant from the Asia-Pacific region, shared that due to the various purposes of travel, women generally need easily accessible forms of transport, such as MRT, buses, and walkable streets. She added that men tend to travel alone and usually have their workplace as the only destination from home.

In conclusion, gender disparity is not very often raised as a concern in Singapore due to the provision of a safe environment with equal opportunities. Measures such as implementation of CCTV cameras and reporting systems within the public transport system have ensured that convenient, secure and safe transport is made accessible to every Singaporean regardless of gender. The gender disparity observed within Singapore's mobility scene are mainly due to its cultural mindset causing a difference in travel patterns between men and women. While transport and gender experts who were interviewed all agree that mobility in Singapore is fairly gender-neutral, Professor Wong is of the view that precepts of the role of men and women in the work-place and the home are important soft data points that should be collated, as these precepts affect attitude and belief systems which translate to behavioural outcomes. He added that more education, and reduction in the in-grained notion that women should get married and be homemakers, shall help to level societal norms. Thus, creating a more gender-neutral society and mobility pattern.



MIA HYUN

Ms. Mia Hyun is a gender specialist who has over 27 years of experience working with multi-lateral, bi-lateral and non-government organizations across the Asia Pacific region. She has also been advising and coordinating government, development partners and civil society on gender related policy issues.



WONG YIIK DIEW

Mr. Wong Yiik Diew is Associate Chair (Academic) and an Associate Professor at the Nanyang Technological University. He is a Lead Principal Investigator in the Rapid Road Transit programme and author for 136 publications listed in Scopus. He is a Member of Singapore Road Safety Council, Member of Chartered Institute of Logistics & Transport Singapore, and Senior Member of Institution of Engineers Singapore. He is also a Chartered Engineer (C.Eng.) in Transportation Engineering.



GOPINATH MENON

Mr. Gopinath Menon has 47 years of experience in urban traffic planning, construction and management, including 27 years of experience in lecturing to graduate and undergraduate students on transport engineering at the Nanyang Technological University. He was effectively the Chief Transportation Engineer of Singapore from 1991 to 2001. He is a member of the Public Transport Council and the Active Mobility Advisory Panel of the Ministry of Transport and was Vice-Chairman of the Singapore Road Safety Council of the Ministry of Home Affairs from 2009-2015.

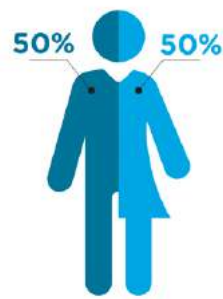
GENDER DIFFERENCES IN BEHAVIOR AND ATTITUDES - SURVEY IN SEVEN COUNTRIES

In December 2000 we carried out a survey in co-operation with YouGov analysis institute. They surveyed a total of 3525 respondents in Helsinki, Vantaa and Espoo in Finland and the greater capital area of Oslo, Stockholm, Copenhagen, Berlin, Delhi and in Singapore (500+ in each) during the period of 14-22 December 2020.

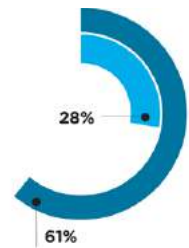
In the following we present selected results segregated by gender covering all capitals combined and relate these results to the local results in the national capitals. The gender segregated results for the local surveys are available separately pr. capital as appendix.

DEMOGRAPHY

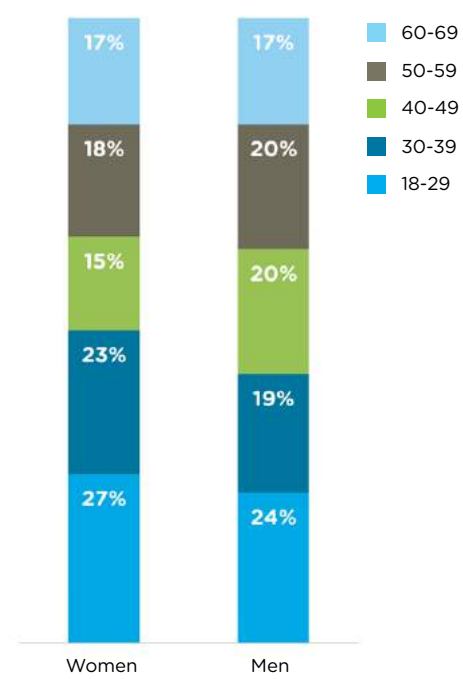
Gender



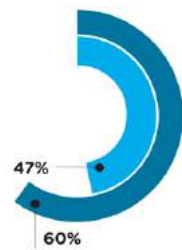
Highest income in your household "Me"



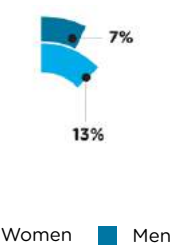
Age



Working fulltime



Working part-time



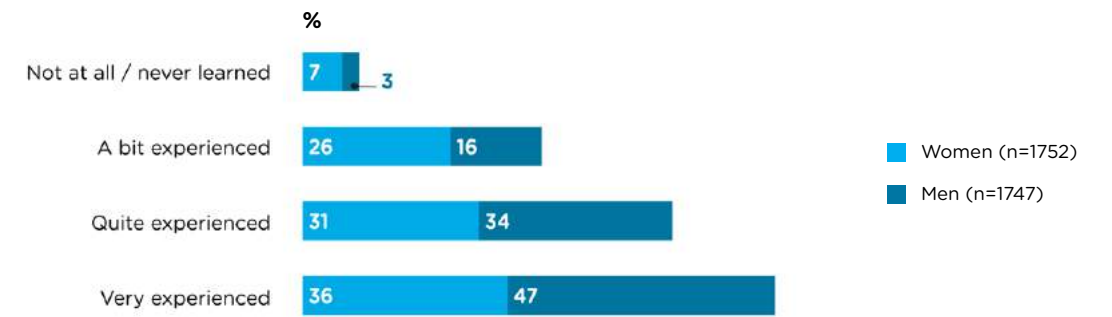
ACCESS TO A CAR IN THE HOUSEHOLD



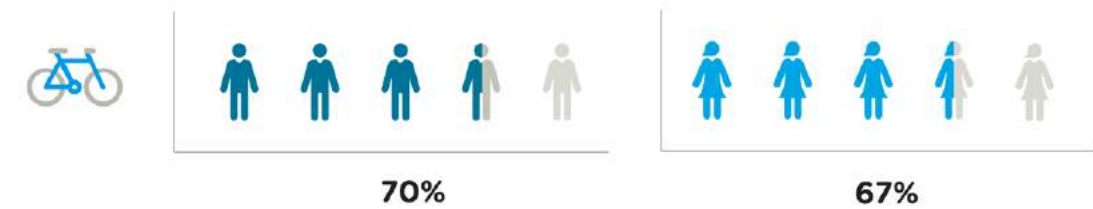
HAS A VALID DRIVER'S LICENSE



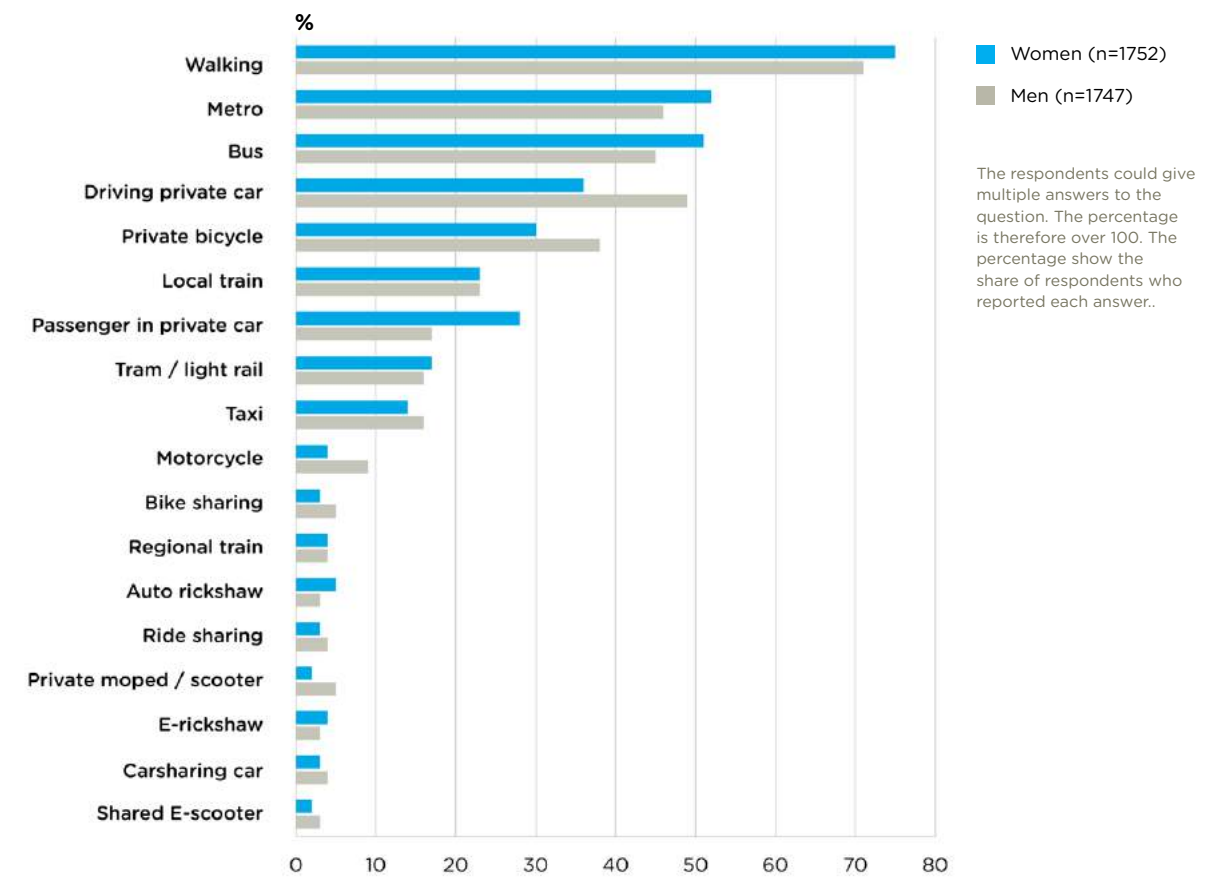
EXPERIENCE RIDING A BICYCLE



ACCESS TO A FUNCTIONAL BICYCLE IN THE HOUSEHOLD










MODES TYPICALLY USED IN AN AVERAGE MONTH










As shown in the infographics we have surveyed 50/50 % women and men. Age wise the sample is quite identical for the two groups except that there's 33% more men in their 40'ies than women in the same age group.

60% of the men and 47% of the women work full time. 13% of women and 7% of the men work part time. Work participation has a big influence on mobility needs. The ratio of female to male participation in the labor force according to the World Bank is the following:¹⁸








						
88%	90%	91%	88%	83%	27%	79%

Work participation, full time / part time work as well as the global gender pay gap influences income in partnerships and families. Among the participants living with a partner we asked who has the highest income – themselves or their partner. 28% of women respond that they have the highest income while 61% of men say they have. The rest say they make about the same.








68% of the female respondents have a valid driver's license, and 80% of the men have the same. That's a significant difference, but it corresponds with the general statistics. Pr. country the official data are the following:

Percentage of men and women that holds a drivers license¹⁹							
Women	69%	86%	77%	73%	81%	9%	N/A
Men	83%	92%	86%	82%	87%	91%	N/A

58% of the women and 65% of men have access to a car in the household. The official numbers are the following:

Car ownership / access official data²⁰							
Women	61%	85%	73%	41%	52%	N/A	N/A
Men	71%	89%	75%	50%	57%	N/A	N/A

In the different countries the survey shows the following differences in bicycle ownership:

Bicycle ownership²¹							
Women	72%	62%	71%	87%	66%	65%	39%
Men	76%	70%	74%	83%	72%	66%	49%

In the survey globally 67% of women and 70% of men have access to a functional bicycle. But the numbers mask big local differences. In Singapore the gender split in bike ownership is 39% for women and 49% for men. In Copenhagen it's 87% for women and 83% for men. According to our survey.

Copenhagen is the only capital where more women than men own a bicycle.

Globally men significantly more than women rate themselves more experienced cyclists – 31% more men than women rate themselves "Very experienced" and 63% more women than men rate themselves "A bit experienced". 3% men and 7% women has never learned to ride a bicycle.

- In **Helsinki** 60% of women and 59% rate themselves "Very experienced"
- In **Copenhagen** 54% of women and 59% of men rate themselves "Very experienced"
- In **Berlin** 42% of women and 50% of men rate themselves "Very experienced"
- In **Stockholm** 36% of women and 40% of men rate themselves "Very experienced"
- In **India** 34% of women and 54% of men rate themselves "Very experienced". The share of women is significantly low
- In **Singapore** 15% of women and 38% of men rate themselves "Very experienced" The share of men is significantly higher than women.
- In **Oslo** 10% of women and 26% of men rate themselves "Very experienced". The share of men is significantly higher than the share of women.

As the numbers show access to a bicycle does not necessarily mean that you use the bicycle regularly.

MODES USED IN AN AVERAGE MONTH

As background data for the core questions around associations and challenges related to different modes, we asked the respondents which modes they typically use in an average month.

The result show that 75% of women and 71% of men walk for transportation. 52% of women use Metro compared to 46% men, which is significantly more. Women also use bus significantly more than men with 51% against 45% of men.

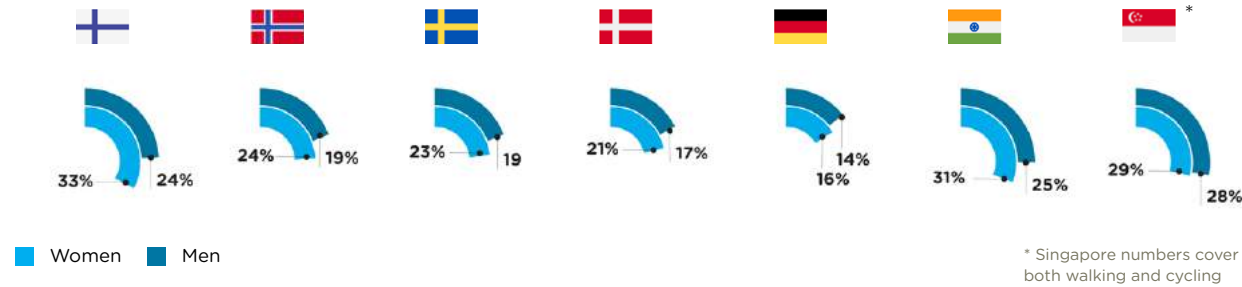
Men drive private car significantly more than women with 49% of men compared to 36% of women. Women on the other hand are significantly more often passengers in a private car with 28% against 17% of men. Men also use bicycle significantly more than women with 38% against 30% of the women.

The data from the survey show the same general gender differences that have been identified in existing research. Our data does however not represent modal split for the different modes as the respondents were asked to list the modes they typically use in a typical month without Corona restrictions.

WALKING

The existing international research show that women to a greater extent than men walk for transportation.²² The local modal split data for number of trips in the seven countries we cover in this report show the same:²³

Modal split walking



In the survey women also indicate walking as transportation in an average month more than men with 75% for women and 71% for men.²⁴

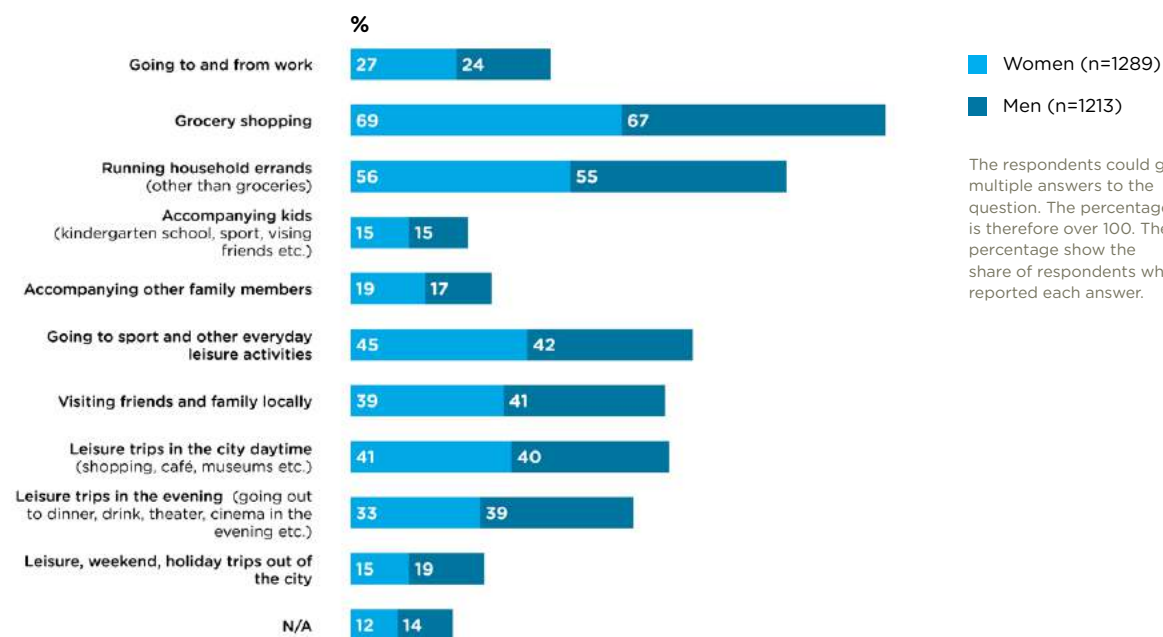
TRIP PURPOSES

Our survey shows that for both men and women walking is globally primarily used when:

1. **Grocery shopping**
2. **Running household errands (other than groceries)**
3. **Going to sport and other everyday leisure activities**

The gender distribution for the different trip types for walking are quite equal - except for "Leisure trips in the evening - going out to dinner, drink, theatre, cinema in the evening etc." where 18% more men than women indicate that as trip purpose for walking.

TRIP PURPOSES IDENTIFIED FOR WALKING



ASSOCIATIONS WITH WALKING

As for associations to walking the survey shows that women and men associate the following:

Globally 12% more women than men associate walking with "Active", 35% more women than men associate walking with "Corona safe", and 19% more men than women associate walking with "Slow".

The global results cover local differences:

- In **Helsinki** 30% more women than men associate "Active" with walking
- In **Stockholm** 42% more women than men associate walking with "Sustainable" and 43% more women than men associate with "Corona safe"
- In **India** 45% more women than men associate "Sustainable" with walking
- In **Copenhagen** 52% more women than men associate walking with "Corona safe"
- In **Oslo** 70% more women than men associate "Corona safe" with walking
- In **Berlin** 11% more men than women associate "Sustainable" with walking
- In **Singapore** 31% more men than women associate "Slow" with walking

In our survey the respondents were asked to indicate which of the following words they associate with different modes. The words they could choose from were:

- Fast/Slow
- Reliable/Unreliable
- Active/Passive
- Comfortable/Uncomfortable
- Sustainable/Unsustainable
- Powerful/Weak
- Fun/Boring
- Traffic safe/Traffic unsafe
- Corona safe/Corona unsafe
- Secure (personal safety)/Unsecure (personal safety)
- Cheap/Expensive
- Other
- None of these
- Don't know.

Multiple associations were allowed.

WHICH OF THE FOLLOWING WORDS DO YOU ASSOCIATE WITH WALKING?



The respondents were asked to indicate which of the following challenges and concerns they associate with different modes:

- Accessibility
- Traffic safety (accident in traffic)
- Personal safety (harassment, assault)
- Time of day traveling
- Which route to take
- How to use
- Corona
- Accompanying children or other relatives
- Traveling with groceries, bags etc.
- Shoes and clothes
- Travel time
- Price
- Weather conditions
- Air pollution/emission from vehicles
- CO²-emissions/Not climate friendly
- Other
- No concerns
- Don't know

Multiple indications were allowed.

CHALLENGES AND CONCERNS RELATED TO WALKING

Women and men identify the following challenges and concerns in relation to walking:

Two challenges stand out. 43% more women than men indicate “Traveling with groceries and bags” as a challenge for walking, and 50% more women than men indicate “Personal safety (harassment, assault) as a challenge for walking.

The global results cover local differences:

- **Copenhagen:** 175% more women than men identify “Traveling with groceries and bags” as a challenge
- **Stockholm:** 144% more women than men identify “Personal safety (harassment, assault) as a challenge and concern
- **Helsinki:** 122% more women than men identify “Personal safety (harassment, assault)”, 67% more women than men identify “Traveling with groceries and bags as a challenge”, and 36% more women than men identify “Travel time” as a challenge
- **Oslo:** 55% more women than men identify “Traveling with groceries and bags” as a challenge
- **Berlin:** 25% more women than men identify “Personal safety (harassment, assault) as a challenge and 110% more men than women identify “Time of day traveling” as a challenge.
- **India:** 91% more men than women identify “Travel time” as a challenge
- **Singapore:** 200% more women than men identify “Accompanying children or other relatives” as a challenge when walking

Fear of harassment and assault when walking is one of the gender differences identified both in international research and by the local experts.

One of the interesting local differences related to walking is that in Delhi walking is by 40% of women and 21% of men associated with “Secure (personal safety)” which is very different from the other capitals. In both Delhi and Singapore “Fun” is one of the top 5 words associated with walking, which it is not in the other capitals.

WALKING AND TECHNOLOGY

In the survey we asked the respondents to indicate how often they use apps and route planning apps:

How often do you use route planning apps?	Never	Rarely	Sometimes	Often	Very often	Don't know / Not relevant
Women	11%	10%	26%	24%	23%	6%
Men	13%	11%	31%	22%	19%	4%

Both globally and locally women use route planning apps more than men:

- In **Helsinki** 42% of men and 56% of women use route planning apps often or very often.
- In **Oslo** 50% of men and 63% of women use route planning apps often or very often.
- In **Stockholm** 38% of men and 48% of women use route planning apps often or very often
- In **Copenhagen** 42% of men and 50% of women use route planning apps often or very often.
- In **Berlin** 31% of men and 31% of women use route planning apps often or very often.
- In **Delhi** 48% of men and 45% of women use route planning apps often or very often.
- In **Singapore** 36% of men and 37% of women use route planning apps very often.

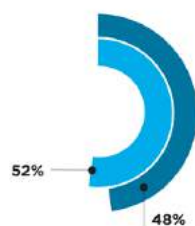
Technology and apps make walking...	Women	Men
Easier	42%	38%
More complicated	4%	4%
More traffic safe	9%	11%
Less traffic safe	5%	6%
More secure (personal safety)	11%	13%
Less secure (personal safety)	4%	5%
None of these	21%	21%
Don't know/not available to me	17%	16%

We also asked the respondents how the use of technology influences walking:

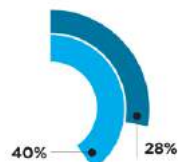
Around 40% of both women and men both agree that technology makes walking easier. It seems to be related to the fact that both women and men use route planning app often - and women even more than men.

WHICH CHALLENGES AND/OR CONCERNS DO YOU HAVE IN RELATION TO WALKING?

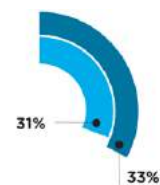
1 Weather conditions



2 Traveling with groceries, bags, etc.



3 Travel time



■ Women (n=793)
■ Men (n=803)

WALKING AND OTHER FACTORS

Regardless of any of the background factors that were used to define characteristics of respondents, walking is found to be equally used across the sample. That said, there are interesting variations in the sample. For example, it is common for walking to increase with age in the European countries regardless of gender, particularly in Sweden and Norway. However, middle-aged men tend to walk more than women in Germany, and Norwegian men clearly walk more than women in the oldest age groups.

The amount of walking is also impacted by the availability of a car. In many European countries, such as Sweden, Norway, and Finland, the tendency to walk varies more significantly between genders when car

availability is higher. In most of these cases, women tend to walk more than men; however, one notable exception to this is Denmark.

Family situations also have an impact on the choice to walk versus other modes. For example, women and men with partners and/or children walk less in Norway than in other countries. Conversely, Finns tend to continue walking even after having children. In Germany, men tend to walk more than women when they are single or have a partner but without children. This is notably different than the general trend across both the European countries as well as all countries surveyed, where women tend to walk more, regardless of the family situation.

WALKING WORD ASSOCIATION

In order to reach a reasonable sample size, all European countries included in the survey were combined. Top word associations were selected separately for walking, cycling, bus, rail (tram, metro, train), and private car. The word “active” is strongly associated with walking, particularly among women. Moreover, associating “active” with walking increases with a woman’s age. This is also true for the word “traffic safety” with walking; as women age, they more strongly associate the two. Family situations tend to have an opposite effect, however. For example, as family size increases, women associate “active” less with walking. This is similarly the case with an increase in car availability; when women have greater access to cars, they tend to associate the word “active” less with walking.

Women’s association of the word “sustainability” to walking increases with income; the higher a woman’s income, the more she associates sustainability to walking. There is an opposite trend among women and incomes to the association of “traffic safety” with walking.



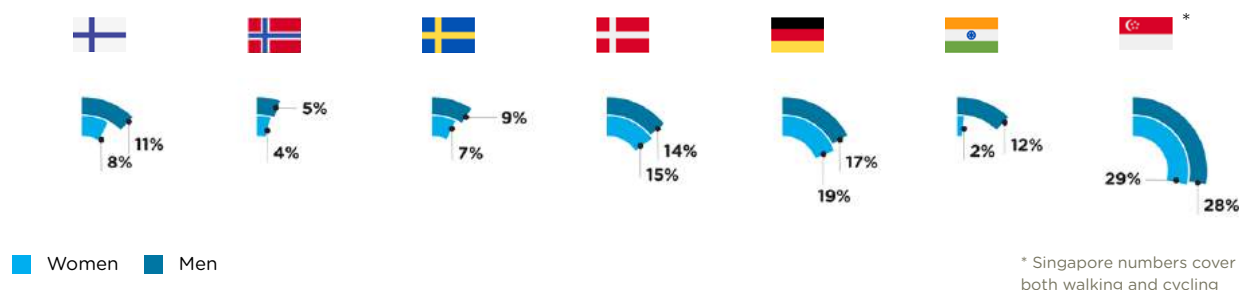
CYCLING

International data and research show that men cycle more than women – at least in cities and countries with little and unsafe cycling infrastructure. In countries with dense networks of safe cycling infrastructure like Holland and Denmark women cycle more than men.²⁵

According to Dr Jan Garrard, the share of women cycling is an indicator for how safe a city is for cycling. Research shows that women are more averse to risk than men in general and in cycling that manifests in a demand for safe cycling infrastructure as a prerequisite for cycling.²⁶

The modal split of cycling for men and women in surveyed countries is as follows:

Modal split cycling²⁷



Our survey also shows that men cycle significantly more than women, 30% of women and 38% of men indicate they use a bicycle regularly for transportation.²⁸

TRIP PURPOSES

In the survey, globally 67% of women and 70% of men have access to a functional bicycle. But the numbers reveal large local differences. For example, in Singapore, we found the lowest bike ownership with 39% for women and 49% for men, whereas Denmark has the highest with 87% for women and 83% for men.

Globally, men rate themselves as experienced cyclists significantly more than women – 31% more men than women rate themselves “Very experienced” and 63% more women than men rate themselves “A bit experienced”. 3% of men and 7% of women have never learned to ride a bicycle.

The number of experienced cyclists cover significant differences in the seven capitals – from 10% for women and 26% of men in Oslo to 60% of women and 59% of men in Helsinki.

Cycling is primarily used for the following purposes:

1. **Running household errands (other than groceries)**
2. **Going to sport and other everyday leisure activities**
3. **Visiting friends and family locally**

The gender distribution for different trip types for cycling are quite equal across these purposes. The exception is Stockholm, where 50% more women than men use the bicycle for “Grocery shopping” and 41% more women than men use it for “Running household errands (other than groceries)”. Also, in Helsinki, 52% more women than men use the bicycle for “Visiting friends and family locally”.

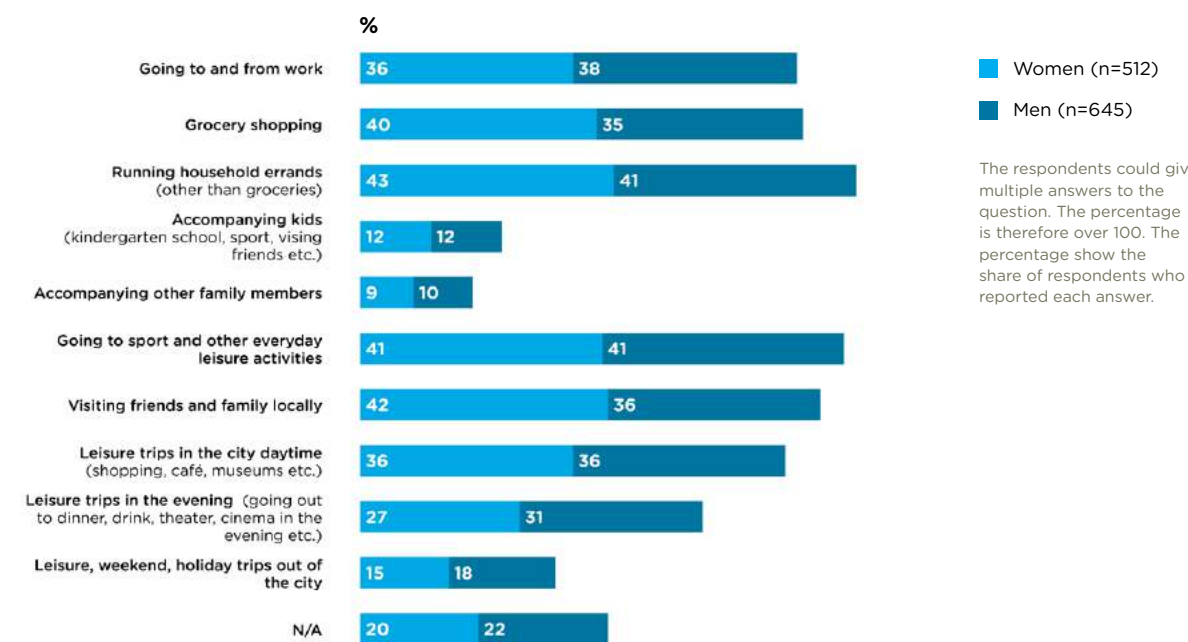
ASSOCIATIONS TO CYCLING

As for associations to cycling the global survey shows the following:

13% more women than men associate cycling with “Sustainable”; however, global results reveal significant local differences.

In **Oslo**: 55% more women than men associate cycling with “Sustainable”. In **Stockholm** and **Copenhagen** 24% more women than men associate “Sustainable” with cycling.

TRIP PURPOSES IDENTIFIED FOR CYCLING



In **Berlin** and **Delhi** the difference is 9% and in **Helsinki** the difference is 6%. **Singapore** stand out with 50% more men than women associating “Sustainability” with cycling.

In both Delhi and Singapore, “Fun” is the second most associated word with cycling – in Delhi 52% of women and 56% of men, and in Singapore, 44% of women and 53% of men make this association.

WHICH OF THE FOLLOWING WORDS DO YOU ASSOCIATE WITH CYCLING?



In our survey the respondents were asked to indicate which of the following words they associate with different modes. The words they could choose from were:

- Fast/Slow
- Reliable/Unreliable
- Active/Passive
- Comfortable/Uncomfortable
- Sustainable/Unsustainable
- Powerful/Weak
- Fun/Boring
- Traffic safe/Traffic unsafe
- Corona safe/Corona unsafe
- Secure (personal safety)/Unsecure (personal safety)
- Cheap/Expensive
- Other
- None of these
- Don't know.

Multiple associations were allowed.

The respondents were asked to indicate which of the following challenges and concerns they associate with different modes:

- Accessibility
- Traffic safety (accident in traffic)
- Personal safety (harassment, assault)
- Time of day traveling
- Which route to take
- How to use
- Corona
- Accompanying children or other relatives
- Traveling with groceries, bags etc.
- Shoes and clothes
- Travel time
- Price
- Weather conditions
- Air pollution/emission from vehicles
- CO²-emissions/Not climate friendly
- Other
- No concerns
- Don't know

Multiple indications were allowed.

CHALLENGES AND CONCERNS RELATED TO CYCLING

The survey identified the following challenges and concerns related to cycling:

- Weather conditions
- Traffic safety
- Traveling with groceries and bags

One challenge stands out. 26% more women than men indicate "Traffic safety (accident in traffic)" as a challenge for cycling.

For bike sharing, 48% more women than men identify "Traveling with groceries and bags" as a challenge.

Not feeling safe in traffic is one of the gender differences related to cycling that is identified in the international research and by local experts.

In relation to gender differences in identifying traffic safety as a challenge to cycling, the survey shows the following:

- **Helsinki:** 85% more women than men
- **Oslo:** 76% more women than men
- **Copenhagen:** 59% more women than men
- **Stockholm:** 36% more women than men
- **Singapore:** 6% more women than men
- **Delhi:** 5% more women than men
- **Berlin:** 3% more men than women

CYCLING AND TECHNOLOGY

In the survey we asked the respondents to indicate how often they use bike sharing apps:

How often do you book shared bikes via apps?	Never	Rarely	Sometimes	Often	Very often	Don't know / Not relevant
Women	64%	9%	6%	2%	2%	16%
Men	61%	11%	9%	4%	3%	12%

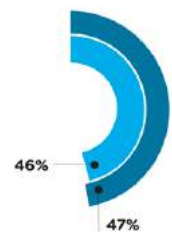
While global results seem to suggest that booking of shared bikes via apps is similar between genders, local responses reveal quite different use rates. In the cities surveyed, booking of shared bikes "Sometimes", "Often" or "Very often" was as follows:

Oslo and Delhi are the capitals where bike share is used the most and men tend to use the service almost twice as much as women.

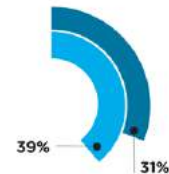
- In **Helsinki** 9% of both men and women
- In **Oslo** 24% of men and 12% of women
- In **Stockholm** 13% of men and 7% of women
- In **Copenhagen** 11% of men and 7% of women
- In **Berlin** 12% of men and 2% of women
- In **Delhi** 30% of men and 26% of women
- In **Singapore** 14% of men and 8% of women

WHICH CHALLENGES AND/OR CONCERNS DO YOU HAVE IN RELATION TO CYCLING?

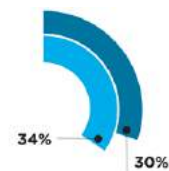
1 Weather conditions



2 Traffic safety



3 Traveling with groceries, bags, etc.



■ Women (n=833)
■ Men (n=795)



In the survey, we also asked respondents how technology influences their use of cycling:

Technology and apps make cycling...	Women	Men
Easier	31%	33%
More complicated	5%	5%
More traffic safe	9%	11%
Less traffic safe	7%	9%
More secure (personal safety)	9%	10%
Less secure (personal safety)	4%	6%
None of these	18%	20%
Don't know/not available to me	30%	22%

Around 30% of both women and men agree that technology makes cycling easier, around 10% think it makes cycling safer, and 10% think it makes cycling more secure. No significant differences between men and women were found.

CYCLING AND OTHER FACTORS

The general trend in the data is that men tend to cycle more than women; however, there are other factors to consider when cross-tabulation is applied.

In Finland, the gender gap for cycling increases in the oldest age groups; men tend to continue cycling more than women. This is also the case for other classifications; for a family situation with partner and children, when employed, or with high incomes, men tend to cycle more than women.

In Norway, the highest rates of cycling among men occur between the ages of 19-29. This is also when the gender gap is greatest. Norwegian men cycle more in nearly all types of family groups, except

where there is a partner without children. This varies from the general trend across Europe where men cycle more for every family situation.

In Sweden, the gender gap is greatest between employed men and women. Also, in Sweden, men with a driver's license and 0-2 cars cycle significantly more than women. However, women without a driver's license cycle more than men. In Europe & all other countries surveyed, men cycle more in all car availability groups.

In Germany, men cycle more in all family situations, similar to other countries; however, men with a partner and children cycle most. This is also where the gender gap is greatest versus other European countries as well as all countries in the survey.

CYCLING WORD ASSOCIATION

The top word associations were selected separately for walking, cycling, bus, rail (tram, metro, train), and private car. Cycling is considered to be an "active" and "reliable" way to move. Association of the word "reliability" with cycling is lower among younger ages in both genders and generally remains at this level through middle years. However, association with the word "active" decreases with age among women.

Association with the word "fun" varies depending on family situations. Single women and women with a partner and children associate cycling less with "fun" than women with only a partner. For men, the association of "fun" with cycling increases as the family grows.

Car availability also has a noticeable effect with many word associations. As car availability increases, women tend to associate cycling less with the words "fast", "sustainable", "reliable", "Corona safe", and "cheap". This is also the case with men when car availability is one or fewer. After that, men tend to associate these words more with cycling than women.

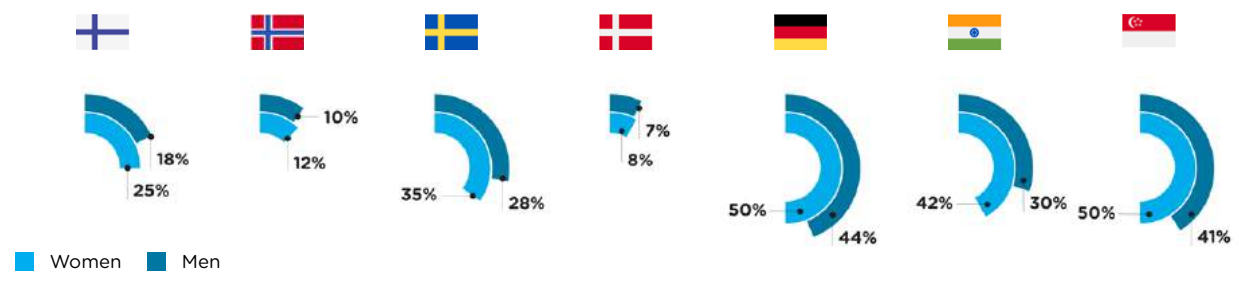
Incomes also have an effect on the association of the word "active" with cycling. Women with higher incomes say they associate the word "active" more with cycling; however, among men, the association is the opposite.



PUBLIC TRANSPORT

International research and data show that women use public transport more than men. In the seven countries we studied, existing data also show that women use public transport more than men:

Modal split public transport²⁹



The gender split numbers for public transport in Denmark and Norway are for the national level. Modal split for public transport in Copenhagen is 21%.

In **Berlin** ticket sales also show that 44% of the passengers are men and 50%, whereas the overall modal split for public transport in Berlin is 30%.²⁹

In the **Helsinki** Region the gender split for the different public transport modes are the following:³⁰

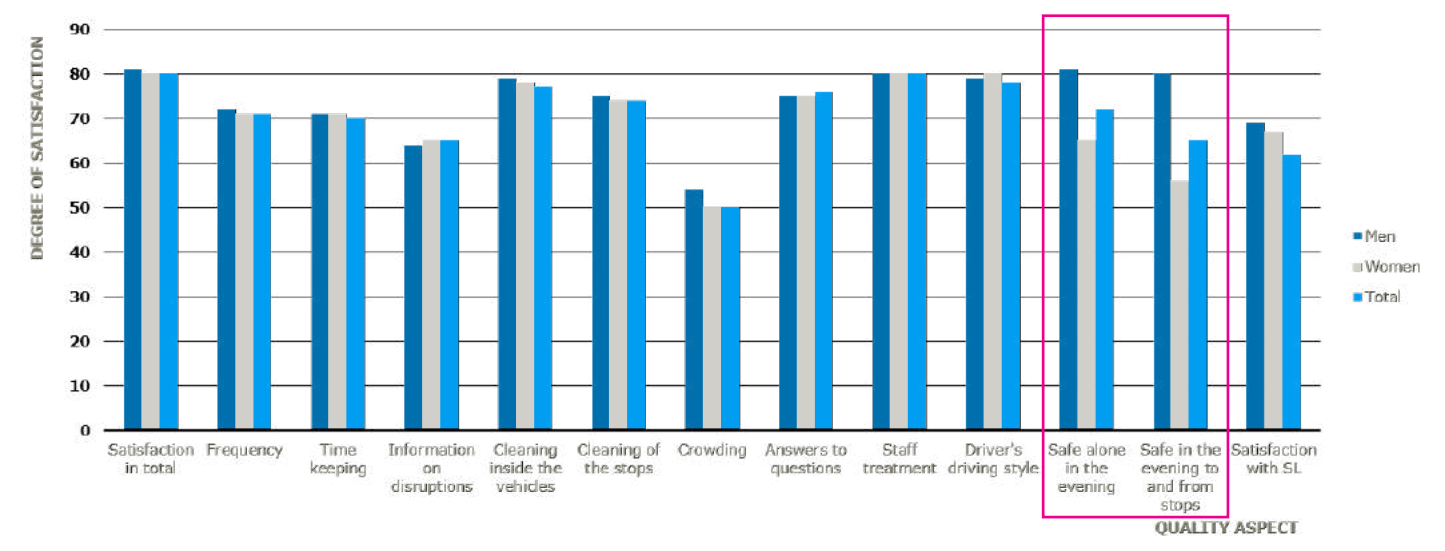


In **Copenhagen**, data show that 57% of the bus passengers are women.³¹

Data from the national Danish travel card "Rejsekortet" used for all public transport show that 57% of card holders are women and 43% men. Data from Rejsekortet also show that women in Copenhagen to a greater extent than men check in with children, dogs, and other adults with their Flex card:

- Checked in with a child: W: 64% M: 36%
- Checked in with a bike: W: 44% M: 45%
- Checked in with a dog: W: 76% M: 24%
- Checked in with another adult: W: 58% M: 41%³²

PERCEIVED QUALITY IN PUBLIC TRANSPORT (YEARLY REPORT 2019)



The general research also shows that women to a greater extent than men feel uncomfortable walking to and from and waiting at public transport in the evening/at night. In Sweden, data from Region Stockholm's study of perceived quality in public transport from 2019 show nearly identical levels of satisfaction for men and women with two exceptions: "Safe alone in the evening" and "Safe in the evening to and from stops". In both cases, women are significantly less satisfied with the conditions.³³

The survey also shows that women use public transportation such as metro and busses significantly more than men in an average month - metro (52%/46%) and buses (51%/45%), whereas local trains are used equally by women and men, (23%/23%).³⁴



TRIP PURPOSES

In the survey, across the seven capitals, the top 3 most indicated purposes for both men and women when using bus, local train, tram/light rail, and metro are:

1. **Leisure trips in the city daytime – shopping, café, museums etc**
2. **Visiting friends and family locally**
3. **Leisure trips in the evening – going out to dinner, drink, theatre, cinema in the evening etc.**

The order of the three vary for the four modes, however, these three purposes lead for both men and women.

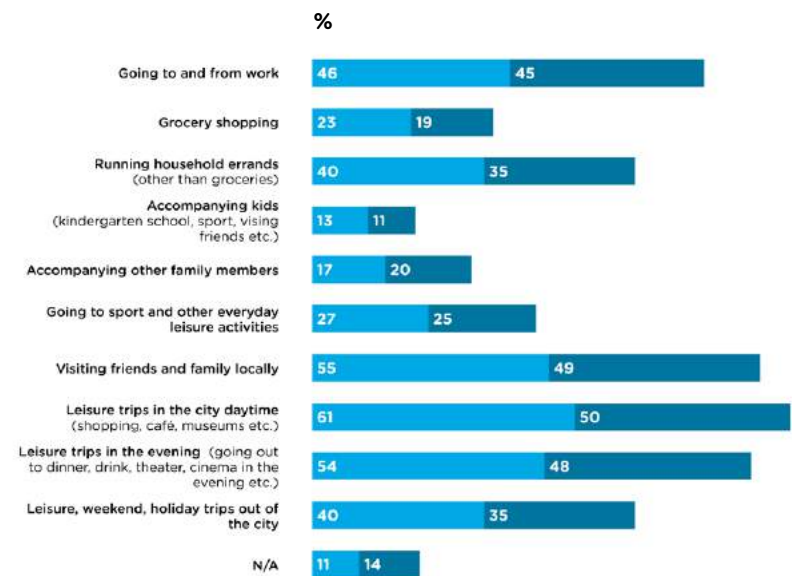
When looking into the gender differences for different modes the following stand out:

- 21% more women than men use bus for “Grocery shopping”
- 22% more women than men use bus for “Leisure trips in the city daytime – shopping, café, museums, etc.”
- 35% more men than women use local train for “Running household errands (other than groceries)”
- 46% more men than women use local train for “Going to sport and other everyday leisure activities”

The global results cover local differences:

- **Copenhagen:** 60% more women than men use bus for “Leisure trips in the city daytime – shopping, café, museums etc.”
- **Stockholm:** 33% more women than men use bus for “Leisure trips in the city daytime – shopping, café, museums etc.”
- **Helsinki:** 120% more women than men use bus for “Grocery shopping”, and 57% more women than men use the bus for “Visiting friends and family locally”
- **Oslo:** 31% more women than men use the bus for “Going to and from work”
- **Berlin:** 56% more women than men use bus for “Running household errands (other than groceries)”
- **Singapore:** 18% more men than women use the metro for “Going to and from work”

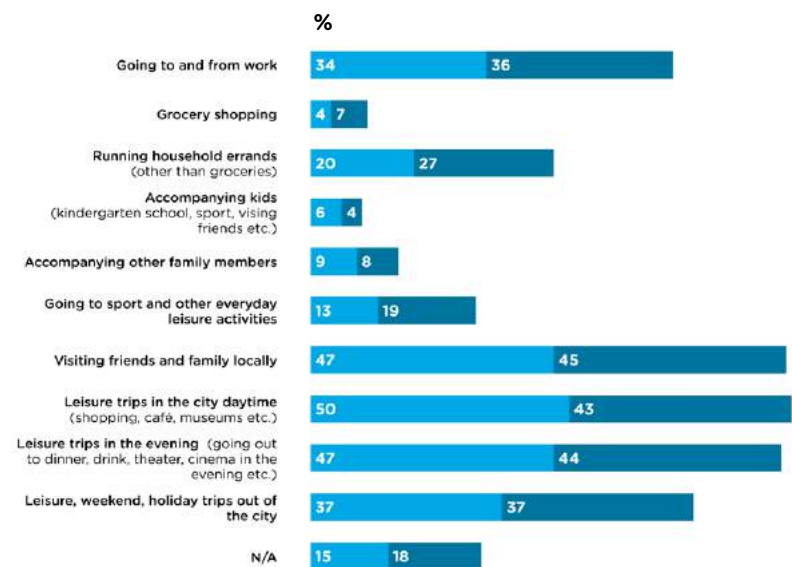
TRIP PURPOSES IDENTIFIED FOR DIFFERENT PUBLIC TRANSPORT MODES



BUS

■ Women (n=883)
■ Men (n=770)

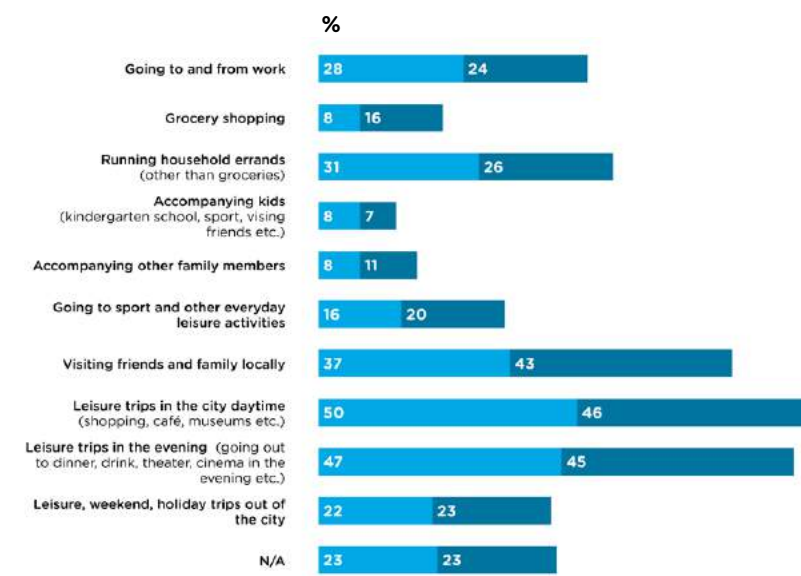
The respondents could give multiple answers to the question. The percentage is therefore over 100. The percentage show the share of respondents who reported each answer.



LOCAL TRAIN

■ Women (n=408)
■ Men (n=393)

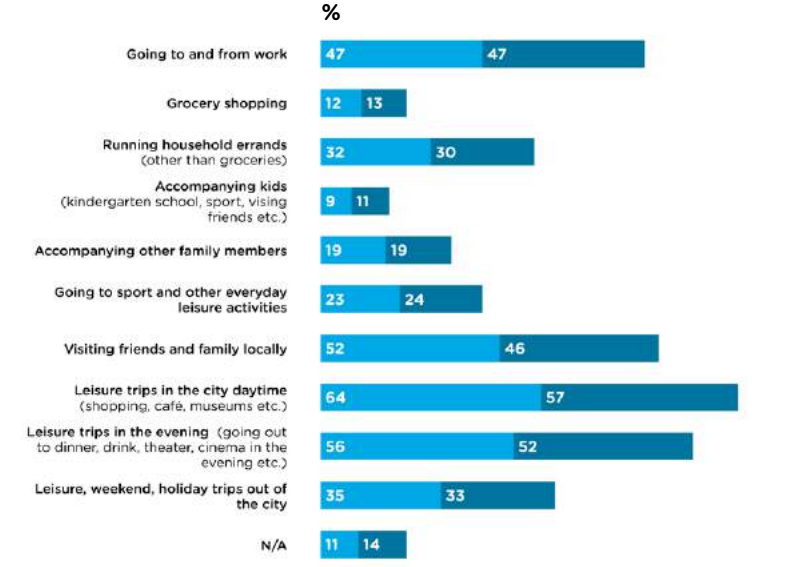
The respondents could give multiple answers to the question. The percentage is therefore over 100. The percentage show the share of respondents who reported each answer.



TRAM / LIGHT RAIL

■ Women (n=294)
■ Men (n=273)

The respondents could give multiple answers to the question. The percentage is therefore over 100. The percentage show the share of respondents who reported each answer.



METRO

■ Women (n=905)
■ Men (n=794)

The respondents could give multiple answers to the question. The percentage is therefore over 100. The percentage show the share of respondents who reported each answer.

ASSOCIATIONS FOR PUBLIC TRANSPORT

In our survey the respondents were asked to indicate which of the following words they associate with different modes. The words they could choose from were:

- Fast/Slow
- Reliable/Unreliable
- Active/Passive
- Comfortable/Uncomfortable
- Sustainable/Unsustainable
- Powerful/Weak
- Fun/Boring
- Traffic safe/Traffic unsafe
- Corona safe/Corona unsafe
- Secure (personal safety)/Unsecure (personal safety)
- Cheap/Expensive
- Other
- None of these
- Don't know.

Multiple associations were allowed.

In the survey, the following **associations** to public transport are identified:

- 21% more women than men associate "Corona unsafe" with bus
- 29% more women than men associate "Corona unsafe" with local train
- 23% more women than men associate "Corona unsafe" with Tram/light rail
- 42% more men than women associate "Cheap" with tram/light rail

The global results identify local differences.

- **Stockholm:** 48% more men than women associate "Traffic safe" with bus
- **Copenhagen:** 42% more women than men associate bus with "Corona unsafe" and 50% more women than men associate "Unreliable" with bus
- **Berlin:** 60% more men than women associate "Sustainable" with bus, 75% more men associate metro with "Sustainable" and 85% more men than women associate train with "Sustainable"
- **Oslo:** 44% more women than men associate "Corona unsafe" with bus and 52% more women than men with Tram/Light rail
- **Delhi:** 68% more men than women associate "Boring" with bus and twice as many men as women associate "Cheap" with train.
- **Singapore:** 37% more men than women associate bus with "Traffic safe" and 59% more men than women associate Tram/light rail with "Cheap" and 54% more men than women associate metro with "Sustainable"
- **Helsinki:** 44% more women than men associate "Corona unsafe" with tram/light.

WHICH OF THE FOLLOWING WORDS DO YOU ASSOCIATE WITH...

BUS



LOCAL TRAIN



TRAM / LIGHT RAIL



METRO



CHALLENGES AND CONCERNS WITH PUBLIC TRANSPORT

The respondents were asked to indicate which of the following challenges and concerns they associate with different modes:

- Accessibility
- Traffic safety (accident in traffic)
- Personal safety (harassment, assault)
- Time of day traveling
- Which route to take
- How to use
- Corona
- Accompanying children or other relatives
- Traveling with groceries, bags etc.
- Shoes and clothes
- Travel time
- Price
- Weather conditions
- Air pollution/emission from vehicles
- CO²-emissions/Not climate friendly
- Other
- No concerns
- Don't know

Multiple indications were allowed.

The following three challenges and concerns are identified by women and men for public transport:

1. **Corona**
2. **Travel time**
3. **Traveling with groceries and bags**

The following results stand out:

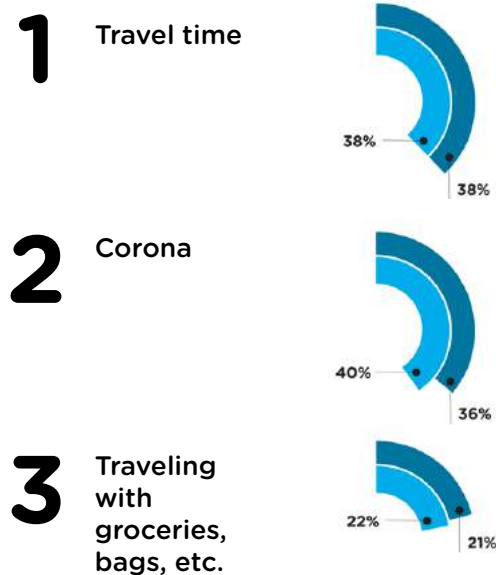
- 43% more men than women identify "Price" as a challenge related to bus
- 56% more women than men identify "Corona" as a challenge for local train
- 36% more women than men identify "Personal safety (harassment, assault)" as a challenge for using local train
- 21% more women than men identify "Corona" as a challenge related to tram/light rail
- 29% more men than women identify "Price" as a challenge/concern related to Metro

The global results cover local differences:

- In **Berlin** 41% more women than men identify "Personal safety (harassment, assault)" as a challenge for metro
- **Stockholm**: 82% more women than men identify "Travel time" as a challenge for local train
- **Copenhagen**: 69% more women than men identify "Accessibility" and 92% identify "Time of day traveling" as a challenge for bus and 80% more men than women identify "Price" as challenge for metro
- **Oslo**: 108% more women than men identify "Accessibility" as a challenge for local train
- **Helsinki**: 120% more women than men identify "Personal safety (harassment, assault)" as a challenge with local train and 180% more women than men identify it with metro

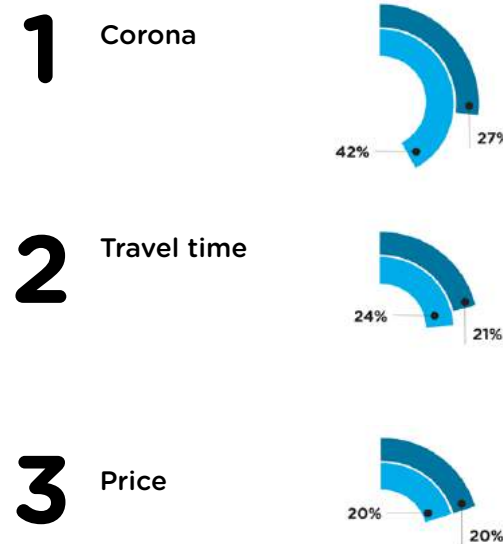
WHICH CHALLENGES AND/OR CONCERNS DO YOU HAVE IN RELATION TO...?

BUS



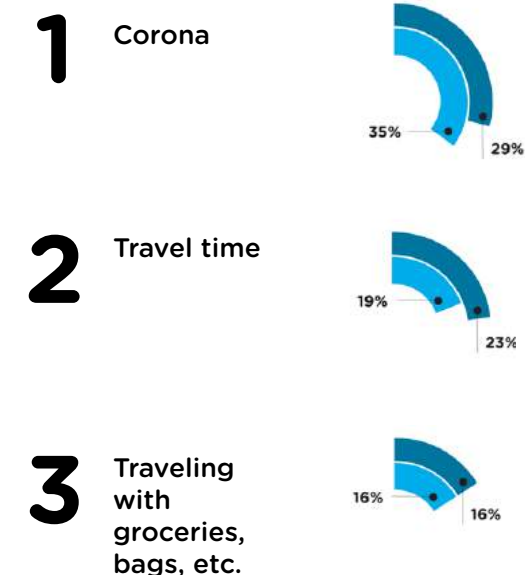
■ Women (n=792)
■ Men (n=814)

LOCAL TRAIN



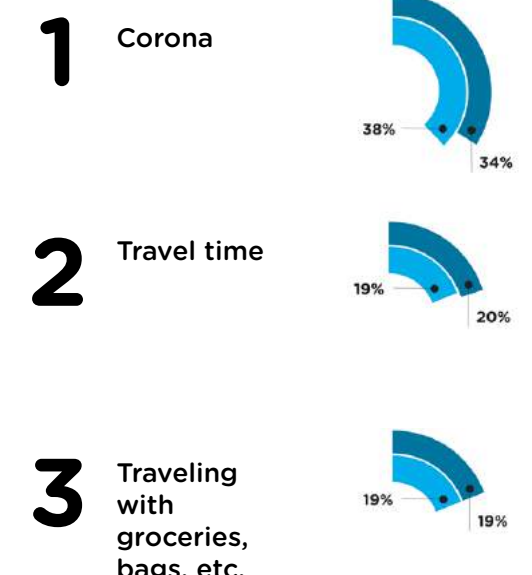
■ Women (n=586)
■ Men (n=599)

TRAM / LIGHT RAIL



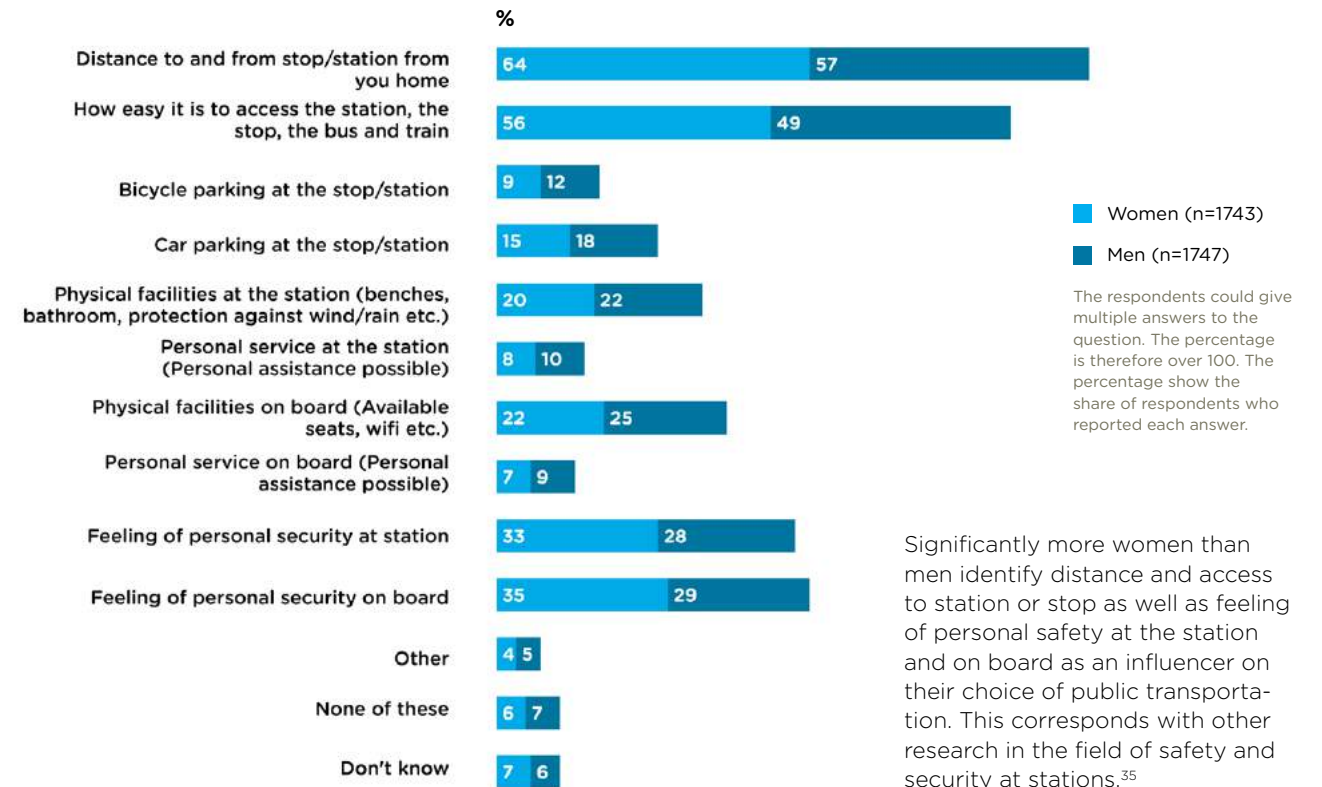
■ Women (n=590)
■ Men (n=564)

METRO



■ Women (n=810)
■ Men (n=801)

WHICH OF THESE ELEMENTS INFLUENCE YOUR CHOICE OF PUBLIC TRANSPORT?



The respondents could give multiple answers to the question. The percentage is therefore over 100. The percentage show the share of respondents who reported each answer.

Significantly more women than men identify distance and access to station or stop as well as feeling of personal safety at the station and on board as an influencer on their choice of public transportation. This corresponds with other research in the field of safety and security at stations.³⁵

The survey not surprisingly show that Corona is top of mind when it comes to public transport. But what it also shows is that women significantly more than men identify and associate Corona with public transport.

46% of women and 47% of men buy public transport tickets via apps on a regular basis and 57% of women and 57% of men finds that technology makes public transportation easier to use.

Women to a much greater extent than men identify personal safety and fear of harassment and assault as a concern in relation to public transport.

When asked directly which elements influence the respondent's choice of public transport the answers are:

PUBLIC TRANSPORT AND TECHNOLOGY

In the survey we asked the respondents to indicate how often they use apps to buy public transport tickets. The results are the following:

How often do you buy public transport tickets via apps	Never	Rarely	Sometimes	Often	Very often	Don't know / Not relevant
Women	31%	15%	20%	13%	13%	8%
Men	29%	18%	23%	11%	13%	6%

46% of women and 47% of men buy public transport tickets via apps on a regular basis. 26% of women and 24% of men often or very often. The data show that globally women and men use apps for public transport equally much.

Locally the gender distribution for buying public transport tickets via apps regularly is the following:

- In **Helsinki** 61% of men and 75% of women
- In **Oslo** 78% of men and 83% of women
- In **Stockholm** 48% of men and 44% of women
- In **Copenhagen** 34% of men and 33% of women
- In **Berlin** 29% of men and 21% of women
- In **Delhi** 55% of men and 56% of women
- In **Singapore** 24% of men and 15% of women

Men and women use apps for public transport tickets to a much higher degree in Helsinki and Oslo. In these cities, women use the services even more than men. For the other capitals the gender distribution is fairly equal.

The low usage of apps for public transport in Copenhagen could be linked to the fact, that users of public transport can use the national "Rejsekortet" (The Travel Card) in all public transport.

We also asked the respondents how often they use apps for travel planning (not route planning)

How often do you do travel planning via apps?	Never	Rarely	Sometimes	Often	Very often	Don't know / Not relevant
Women	15%	12%	27%	21%	18%	6%
Men	15%	16%	29%	21%	14%	4%

67% of women and 64% of men use apps for travel planning on a regular basis. Also, 39% of women and 35% of men use these services often or very often. Data show that women use travel planning apps slightly more than men.

Locally the gender distribution is the following:

- In **Helsinki** 64% of men and 78% of women buy use apps for travel planning regularly.
- In **Oslo** 70% of men and 80% of women use apps for travel planning regularly.
- In **Stockholm** 69% of men and 77% of women use apps for travel planning regularly.
- In **Copenhagen** 62% of men and 70% of women use apps for travel planning regularly.
- In **Berlin** 45% of men and 38% of women use apps for travel planning regularly.
- In **Delhi** 73% of men and 71% of women use apps for travel planning regularly.
- In **Singapore** 63% of men and 58% of women use apps for travel planning regularly.

In all capitals except Berlin the regular usage of travel planning apps is high for both men and women. In the Nordic capitals women use travel planning apps more than men. This is most likely linked to the fact, that they use public transport more than men. But at the same time, it's not the case in Delhi and Singapore,

where men indicate to use travel planning apps more often than women.

The respondents were also asked how technology and apps in general influence their public transport experience.

Technology and apps make public transport...	Women	Men
Easier	57%	56%
More complicated	4%	6%
More traffic safe	10%	13%
Less traffic safe	4%	4%
More secure (personal safety)	12%	13%
Less secure (personal safety)	5%	6%
None of these	8%	8%
Don't know/not available to me	14%	11%

As the data shows women and men's view on technology and apps are very alike. And more than half of women and men find that technology and apps make public transport easier.

PUBLIC TRANSPORT AND OTHER FACTORS

When applying of cross tabulation by gender and socioeconomical backgrounds, we see that, in general, women use public transport more than men, but there are some other factors in each country that deviate from the norm.

Finnish men are more likely to stop using public transport after having children. Income also has an effect on public transport use; women tend to use public transport more and the gender gap is greatest between men and women in medium income groups in Finland.

In Sweden the gender gap for public transport use in medium income groups is also the greatest among all income levels. Men in low income groups tend to use public transport somewhat more than women; this is different than the European average where women in lower income groups tend to use public transport more. In Sweden, public transport usage between men and women is somewhat more equal than in other countries for different family situations.

The one exception is for those with a partner without children, where women use significantly more public transport than men.

In the EU, women use more public transport in all age groups; however, in Germany, younger men tend to use more public transport. Also in Germany, single and high income men use more public transport than women. This varies from the trend in the European countries overall as well as all other countries surveyed, where women tend to use public transport more in all family and income groups.

Car availability also reflects on the gender gap in associations with "Corona unsafe". As women have greater car availability, they tend to associate rail use with "Corona unsafe" more than their male counterparts. In general, men associate rail use with "Corona unsafe" less than women; interestingly, this difference between genders is greatest in groups with access to one car but no driver's license.

BUS WORD ASSOCIATION

Word associations with bus use do not change by cross-tabulated categories. Association with bus use and "Corona unsafe" does differ between men and women, however. Women associate bus use with the word "unsafe" in all family situations, but men make this association mostly when they are single or have a partner and children.

As women have greater car availability, the words "unreliable" and "cheap" are associated more and less with bus use than their male counterparts, respectively. Associations of these words among men varied significantly less.

BUS WORD ASSOCIATION

Family situations affect associations between rail use and "corona unsafe". Women made this association more than men, and this sentiment grew with family size. Men associate rail use and "corona unsafe" more than women when they have a partner and children, the only family situation where this association is inverted.








Car availability also reflects on the gender gap in associations with "corona unsafe". As women have greater car availability, they tend to associate rail use with "corona unsafe" more than their male counterparts. In general, men associate rail use with "corona unsafe" less than their female counterparts; interestingly, this difference between genders is greatest in groups with access to one car but no driver's license.



CARS

International data as well as the local collected data that we have collected show that men to a greater extent than women drive cars and that women when in a car are more likely to be a passenger. That also shows in the local modal split data for car driving:

Modal split car driver and passenger

Modal split car ³⁶							
Women driver/passenger	23% / 10%	45%/14%	32%	39%/18%	24%	1%/7%	21%
Men driver/passenger	40% / 5%	58%/5%	42%	52%/10%	15%	8%/3%	31%

Our survey also shows that men drive significantly more than women, with 49% of men driving in an average month and 36% of women. The result for men is significantly higher than for women.³⁷

TRIP PURPOSES

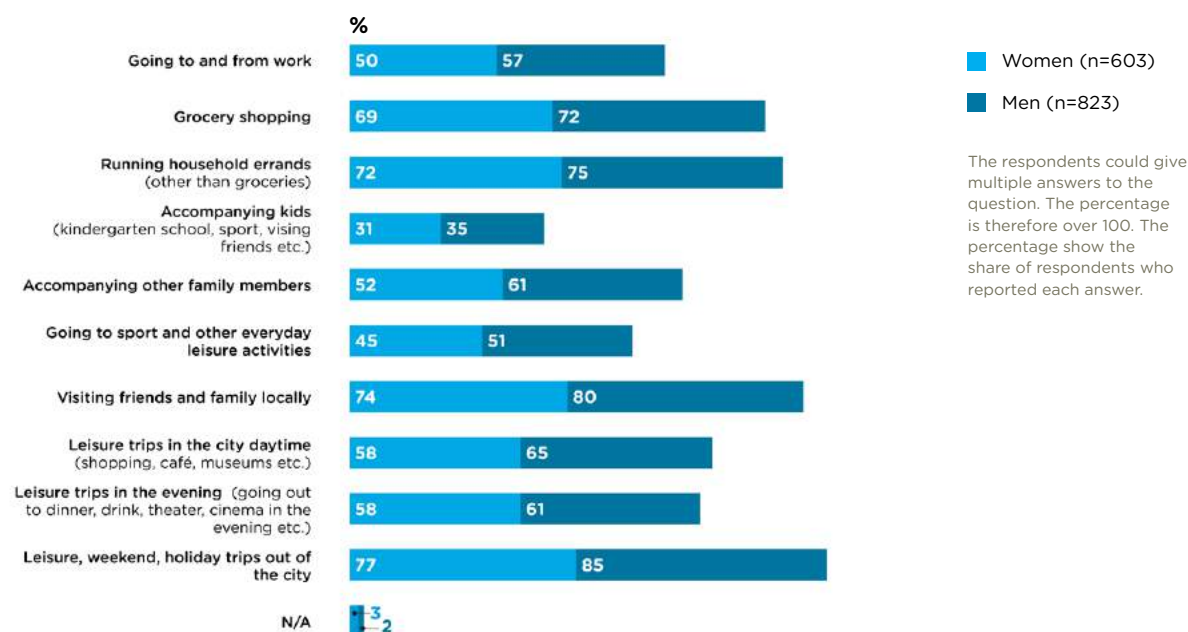
Driving of private cars is primarily for the following purposes:

1. **Leisure, weekend, holiday trips out of the city**
2. **Visiting friends and family locally**
3. **Running household errands (other than groceries)**

Gender differences in trip types is quite clear when it comes to driving private cars – for all trip purposes, the share of men driving a car is higher than for women. The same is the case when looking into the local data in **Helsinki**, **Stockholm**, **Copenhagen**, and **India**.

In **Oslo** and **Singapore**, women drive a car more than men for “Grocery shopping” and “Running household errands (other than groceries)”. In **Berlin**, women’s share of driving for different purposes is one percentage point higher than men for “Going to and from work”, “Grocery shopping”, “Visiting friends and family locally”, “Leisure trips in the city daytime – shopping, café, museums etc.” For “Going to sport and other everyday leisure activities” 36% of women drive and 32% of men drive.

TRIP PURPOSES IDENTIFIED FOR CAR DRIVING



ASSOCIATIONS FOR DRIVING PRIVATE CAR

As for associations to driving a private car, the survey shows that women and men associate the following:

30% more women than men associate “Corona safe” with private cars. 16% more women than men associate “Secure (personal safety)” and 12% more women than men associate “Fast” with private cars.

The share of women identifying “Corona safe” and “Secure (personal safety)” with the car differs in each capital:

- **Helsinki:** 18% more women than men associate “Corona safe” and 24% more women than men associate “Secure (personal safety)” with the car
- **Berlin:** 30% more women than men associate “Corona safe” with the car and 68% more women than men associate “Secure (personal safety)” with private car
- **Delhi:** 33% more women than men associate “Corona safe” with the car and 28% associate “Secure (personal safety)” with private car
- **Oslo:** 46% more women than men associate “Corona safe” with the car
- **Copenhagen:** 104% more women associate “Corona safe” with the car
- **Stockholm:** 39% more women than men associate “Unsustainable” with the car
- In **Singapore** 76% more men than women associate “Corona safe” with the car.

In our survey the respondents were asked to indicate which of the following words they associate with different modes. The words they could choose from were:

- Fast/Slow
- Reliable/Unreliable
- Active/Passive
- Comfortable/Uncomfortable
- Sustainable/Unsustainable
- Powerful/Weak
- Fun/Boring
- Traffic safe/Traffic unsafe
- Corona safe/Corona unsafe
- Secure (personal safety)/Unsecure (personal safety)
- Cheap/Expensive
- Other
- None of these
- Don't know.

Multiple associations were allowed.

WHICH OF THE FOLLOWING WORDS DO YOU ASSOCIATE WITH CARS?



The respondents were asked to indicate which of the following challenges and concerns they associate with different modes:

- Accessibility
- Traffic safety (accident in traffic)
- Personal safety (harassment, assault)
- Time of day traveling
- Which route to take
- How to use
- Corona
- Accompanying children or other relatives
- Traveling with groceries, bags etc.
- Shoes and clothes
- Travel time
- Price
- Weather conditions
- Air pollution/emission from vehicles
- CO²-emissions/Not climate friendly
- Other
- No concerns
- Don't know

Multiple indications were allowed.

CHALLENGES AND CONCERNS WITH PRIVATE CAR

Women and men identify the following challenges and concerns in relation to car driving:

One challenge stands out. 32% more women than men indicate "CO²-emissions /Not climate friendly" as a challenge and 20% more women than men indicate "Air pollution /emission from vehicles" as a challenge for car driving.

The results cover local differences in associations between "CO²-emissions/Not climate friendly" and the private car. According to the numbers in all countries surveyed, women to a greater extent than men see cars as a problem in relation to CO² and climate change:

- **Stockholm:** 107% more women than men
- **Delhi:** 38% more women than men
- **Copenhagen:** 32% more women than men
- **Oslo:** 17% more women than men
- **Helsinki:** 16% more women than men
- **Singapore:** 9% more women than men

CAR DRIVING AND TECHNOLOGY

In the survey, we also asked respondents how technology influences car driving:

Technology and apps make car driving...	Women	Men
Easier	46%	46%
More complicated	4%	6%
More traffic safe	12%	15%
Less traffic safe	7%	8%
More secure (personal safety)	13%	16%
Less secure (personal safety)	4%	5%
None of these	9%	9%
Don't know/not available to me	25%	17%

46% of women and men indicate that technology makes car driving easier. 25% of women and 17% of men also responded, "Don't know/not available for me".

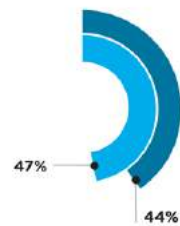
When asked how technology and apps influence the possibility to live without a car, the responses are the following:

Technology and apps make living without a car...	Women	Men
Easier	43%	37%
More complicated	10%	12%
More traffic safe	5%	8%
Less traffic safe	3%	4%
More secure (personal safety)	6%	7%
Less secure (personal safety)	4%	7%
None of these	11%	14%
Don't know/not available to me	25%	22%

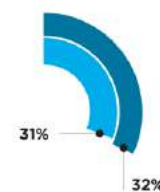
Women find that technology makes it easier living without a car, which corresponds with women using digital services for public transport more than men and driving less. Around 25% of both women and men respond, "Don't know/not available for me".

WHICH CHALLENGES AND/OR CONCERNS DO YOU HAVE IN RELATION TO CARS?

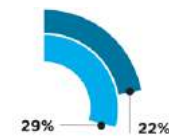
1 Parking



2 Price



3 CO²



- Women (n=838)
- Men (n=792)

CAR USAGE AND OTHER FACTORS

Based on cross-tabulation analysis, we see that, in general, men tend to use cars more and women are more likely to be a passenger. The general trend is that the gender gap in car use increases as families grow, where women tend to be passengers more than men, who tend to be drivers. However, there are some other factors that impact this trend on a country-by-country basis.

In Germany, middle-aged women use private cars more than men. This is different than in the European countries overall and all other countries surveyed, where men use private cars more than women in all age groups. The gender gap in car use is smaller in Germany than in the European countries overall for all income groups. The one exception to this is for those who are unemployed, where the gender gap for private car use is greater than in all other European countries & all other countries surveyed.

In Denmark, it's the single women who tend to use cars more than men. This is different than in the European countries overall & all other countries surveyed, where men use private cars more than women in all family situations. The gender gap in car use is greatest in Denmark for the family situation when men and women have a partner.

In Norway, women are more likely to be the passenger in a private car when they are employed, while men are more likely to sit in the passenger seat only in the younger ages between 18-29 or when they are unemployed. This varies from the European countries overall and all other countries surveyed, where women are always more likely to be in passenger seat. In Norway, the gender gap in car varies less by income than in the European countries overall and all other countries surveyed.

In Finland, the gender gap in car use is greater than all other countries surveyed, especially in the oldest age group 50-69. Finnish men are more likely than women to start using a private car after having children. Finns also travel more by private car as passengers compared to the European countries overall and all other countries surveyed. Employed Finnish women typically do not drive as often as their male counterparts.

In Sweden, men are more likely than women to be car passengers only in the age group of 18-28 or for lower-income groups; this is again different than the general European countries trend of women being the passenger in all cross-tabulated categories.

CAR WORD ASSOCIATION

As women get older, they tend to associate with word "sustainability" more with car use. We interpret this to mean that there are greater concerns with a car's sustainability as women age. A man's age has less of an impact on the same association; however, family situations tend to have a greater effect on men, who associate car use with "unsustainable" more as the family size increases.



NEW MOBILITY SOLUTIONS



Existing research and data

Existing research into new mobility services – bike sharing, scooter sharing, car sharing, ride sharing etc. show that they are, to a great extent, used more by men than women.³⁸

A number of new mobility operators have provided us with gender-segregated data about their users. In several cases the user data have been gender segregated by the users first names as many new mobility operators don't collect gender information about their users.

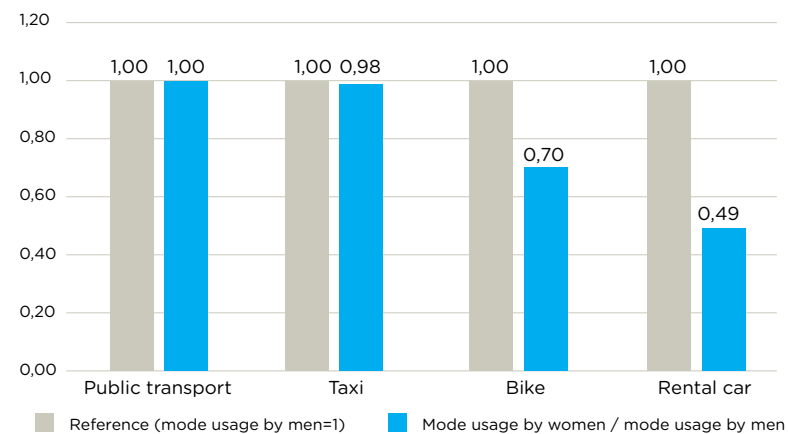
In **Helsinki** we have collected the following data:

	City bikes in Helsinki and Espoo, 2019 ³⁹	HSL e-scooter pilot in Vuosaari, Helsinki, 2019 ⁴⁰	HSL ride sharing ViaVan pilot in Espoo and Helsinki, 2019 ⁴¹	Whim (MaaS) ⁴²
Women	55%	30%	46%	41%
Men	43%	69%	52%	48%

Most services are primarily used by men. City Bikes have the highest share of female users with 55%.

Among the Whim subscribers (MaaS) the gender split is also quite evenly distributed. Looking into the different modes used by men and women some gender differences show:

FEMALE WHIM URBAN SUBSCRIBERS' USAGE OF DIFFERENT TRANSPORT MODES RELATIVE TO MALE SUBSCRIBERS



Women use shared bikes and rental cars less than men. It should be noted that the equal usage of public transport is due to the fact that all Whim Urban subscribers are counted as PT users by default.

In **Oslo** the data show the same picture – only 15% of the users of Lime scooters are women, 29% of the Vy carsharing users are women, but about 40% (estimated) use Hyre sharing services.

	Lime e-scooters Oslo ⁴³	Vy car sharing ⁴⁴	Hyre sharing service ⁴⁵
Women	15%	29%	(ca.) 40%
Men	69%	71%	(ca.) 60%

In **Stockholm** the numbers are identical to the other countries – bikeshare has 45% women, but e-scooters only see 16% female users.

	Donkey Republic bike sharing (SE) ⁴⁶	Lime e-scooters Stockholm ⁴⁷
Women	45%	16%
Men	55%	81%

In **Denmark** the Dutch company Swapfiets offers bikes for leasing for a monthly fee including full service. Approximately 44% of their clients are women. Donkey

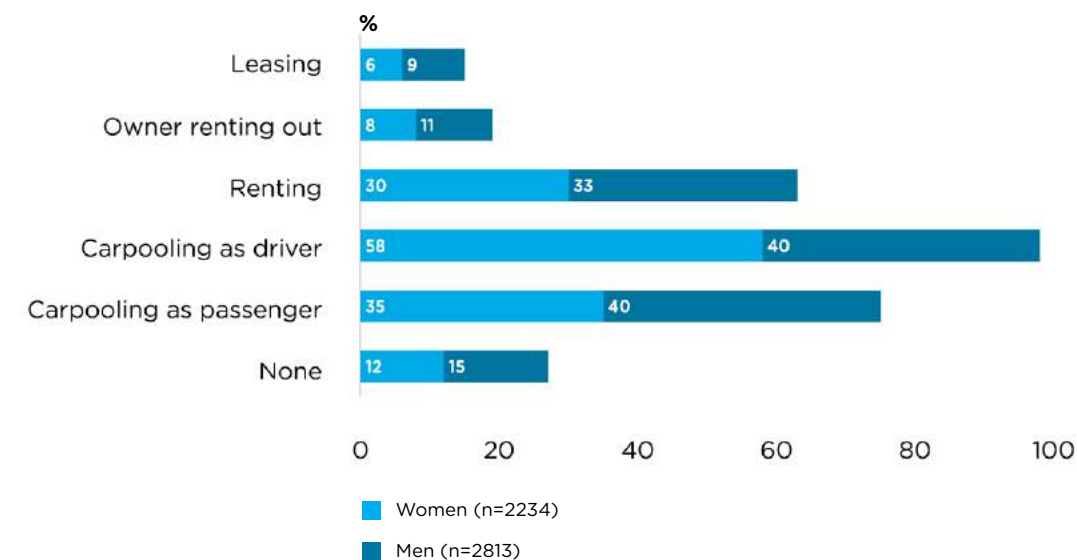
Republic's free-floating bike share has 33% female users for their regular bikes and 22% female users for their e-bikes. Lime in Copenhagen only have 11% female users among their e-scooter users and 82% men.

	Swapfiets DK ⁴⁸	Donkey Republic Regular bikes DK ⁴⁹	Donkey Republic e-bikes DK ⁵⁰	Lime e-scooters in Copenhagen ⁵¹
Women	44%	33%	22%	11%
Men	56%	67%	78%	82%

Male user dominance in e-scooter users is not limited to the Nordics. VOI provided us with gender split data from a survey of almost 10 000 of their users in Europe last year. It shows a gender split of 29% female and 66% male users. VOI also shared that they have held focus groups with male and female users to better understand uses and wishes.⁵² It has resulted in adding a bag hook and phone holder to their latest model.

In Denmark the ride and carsharing service GoMore also shared data with us. It shows that among their users and respondents in a survey (44% women / 66% men) the share of women driving is higher than the share of women getting a ride in their ridesharing scheme.⁵³

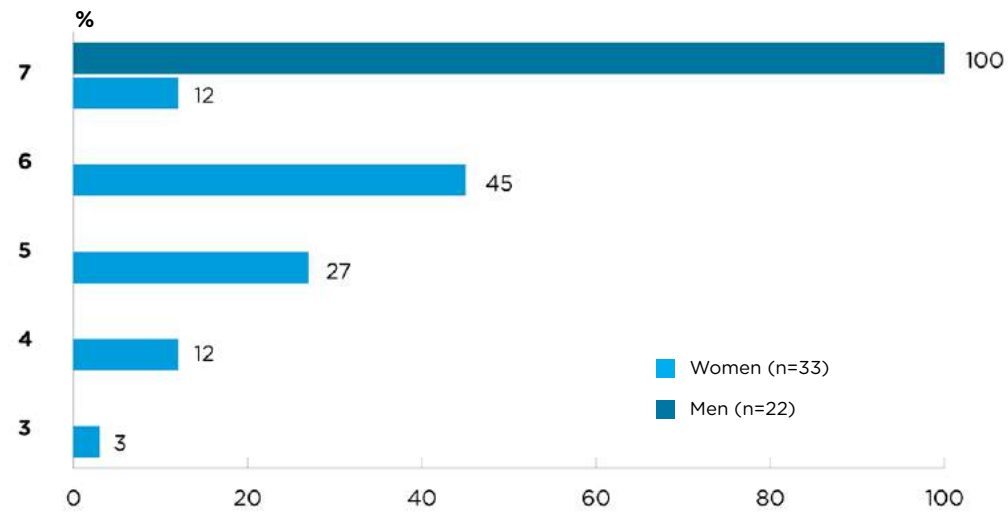
WHICH SERVICES HAVE GOMORE USERS USED %



From the Saga Team in the EU Fabulos project for self-driving buses pilot in Gjesdal, Norway, we received data from a user survey. When looking at the data gender segregated there's some clear gender differences. On all the four questions where respondents were

asked to rate the user experience on traffic safety, personal safety, usability and the experience as a whole, all male users responded "Excellent" to all the questions whereas female users used the whole scale and were not generally as happy with the experience.⁵⁴

GJESDAL AV PILOT (SAGA PROJECT)
HOW DO YOU RATE THE AUTONOMOUS BUS TRIP AS A WHOLE?
1 = BAD, 7 = EXCELLENT



Our 2020 survey shows that new mobility services like bike sharing, e-scooter sharing, carsharing and ridesharing still have a smaller market share (<4% in a regular month in the global survey). Because of the low base numbers, we have not included the purposes data as those were only answered by the users.

Also, in this section, we will not cover bikeshare as the associations and challenges are identical to cycling as mode covered in the cycling chapter.

ASSOCIATIONS WITH E-SCOOTER



As for associations to e-scooters our survey show that women and men associate the following:

- Traffic safety
- Unsecure (personal safety)
- Fast
- Fun
- Corona safe

"Traffic unsafe" is the most associated word for both men and women across all geographies. The biggest difference between women and men is that 26% more women than men associate "Fast" with e-scooters.

The global results cover local differences on the association of "Fast" with e-scooters:

- In **Helsinki** 82% more women than men
- In **Stockholm** 79% more women than men
- In **Oslo** 42% more women than men
- In **Copenhagen** 7% more women than men
- In **Berlin** 33% more men than women
- In **Singapore** 10 more men than women

In our survey the respondents were asked to indicate which of the following words they associate with different modes. The words they could choose from were:

- Fast/Slow
- Reliable/Unreliable
- Active/Passive
- Comfortable/Uncomfortable
- Sustainable/Unsustainable
- Powerful/Weak
- Fun/Boring
- Traffic safe/Traffic unsafe
- Corona safe/Corona unsafe
- Secure (personal safety)/Unsecure (personal safety)
- Cheap/Expensive
- Other
- None of these
- Don't know.

Multiple associations were allowed.

WHICH OF THE FOLLOWING WORDS DO YOU ASSOCIATE WITH E-SCOOTER?



The respondents were asked to indicate which of the following challenges and concerns they associate with different modes:

- Accessibility
- Traffic safety (accident in traffic)
- Personal safety (harassment, assault)
- Time of day traveling
- Which route to take
- How to use
- Corona
- Accompanying children or other relatives
- Traveling with groceries, bags etc.
- Shoes and clothes
- Travel time
- Price
- Weather conditions
- Air pollution/emission from vehicles
- CO²-emissions/Not climate friendly
- Other
- No concerns
- Don't know

Multiple indications were allowed.

CHALLENGES AND CONCERNS WITH E-SCOOTER

“Traffic safety” is also identified as the primary challenge and concern related to e-scooters by both men and women in all capitals except Berlin and Singapore. 21% more women than men globally identify it as a challenge and concern.

The global results cover local differences:

- In **Helsinki** 40% more women than men identify “Traffic safety” as a challenge and concern related to e-scooters
- In **Stockholm** 32% more women than men identify “Traffic safety” as a challenge and concern related to e-scooters
- In **Oslo** 30% more women than men identify “Traffic safety” as a challenge and concern related to e-scooters and 306% more women than men identify “How to use it” as a challenge and concern.
- In **Copenhagen** 22% more women than men identify “Traffic safety” as a challenge and concern related to e-scooters
- In **Berlin** 105% more men than women identify “Price” as a challenge and concern related to e-scooters
- In **Singapore** 63% more men than women associate “Parking” as a challenge and concern with e-scooters and 77% more women than men identify “How to use it” as a challenge and concern.

E-SCOOTERS AND TECHNOLOGY

When asked how often respondents use digital services when traveling, global responses were the following:

Booking shared e-scooters via apps?	Never	Rarely	Sometimes	Often	Very often	Don't know/Not relevant
Women	64%	9%	6%	3%	2%	17%
Men	61%	10%	9%	5%	3%	12%

New shared mobility services have a very small market share and it also shows in the usage numbers - 11% of women and 17% of men use e-scooter apps regularly.

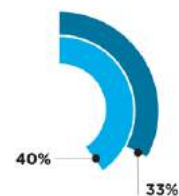
In all seven countries, men book e-scooters more than women. Surprisingly, Delhi is the capital with the highest share of both women and men booking shared e-scooters via apps - even though the service is only tested in a very limited area in the core of the city. Also, Singapore is the only capital where the share of women and men booking e-scooters is fairly equal.

Locally, the gender distribution for booking e-scooters via apps is the following:

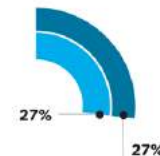
- In **Helsinki** 12% of men and 4% of women
- In **Oslo** 26% of men and 18% of women
- In **Stockholm** 16% of men and 9% of women
- In **Copenhagen** 11% of men and 8% of women
- In **Berlin** 12% of men and 4% of women
- In **Delhi** 32% of men and 25% of women
- In **Singapore** 9% of men and 7% of women

WHICH CHALLENGES AND/OR CONCERNS DO YOU HAVE IN RELATION TO E-SCOOTER?

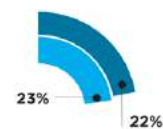
1 Traffic safety



2 Weather conditions



3 Traveling with groceries, bags, etc.



■ Women (n=713)
■ Men (n=695)



In our survey the respondents were asked to indicate which of the following words they associate with different modes. The words they could choose from were:

- Fast/Slow
- Reliable/Unreliable
- Active/Passive
- Comfortable/Uncomfortable
- Sustainable/Unsustainable
- Powerful/Weak
- Fun/Boring
- Traffic safe/Traffic unsafe
- Corona safe/Corona unsafe
- Secure (personal safety)/Unsecure (personal safety)
- Cheap/Expensive
- Other
- None of these
- Don't know.

Multiple associations were allowed.

ASSOCIATIONS WITH SHARED CAR

As for associations to carsharing our survey show that women and men associate the following:

- Sustainable
- Corona safe
- Comfortable
- Expensive
- Fast

Unlike e-scooters the associations to carsharing are very mixed. "Sustainable" is the most associated word for both men and women globally and with 20% more women than men having that association. But the result covers very different associations across the capitals:

The global results cover local differences:

- In **Stockholm, Copenhagen, and Berlin** "Sustainable" is the most associated word - 25% more women in Stockholm, 37% more women in Copenhagen and 15% more women than men in Berlin have that association
- In **Oslo** "Expensive" is the most associated word by 43% more men than women. 53% more women than men associate "Sustainable" with carsharing
- In **Berlin** "Expensive" is second with 108% more men than women having that association.
- In **Helsinki** "Uncomfortable" is the most associated word by 20% more women than men
- In **Delhi** "Corona unsafe" is the most associated word. 34% more men than women
- In **Singapore** "Fast" is associated fifth by 140% more men than women

WHICH OF THE FOLLOWING WORDS DO YOU ASSOCIATE WITH SHARED CAR?



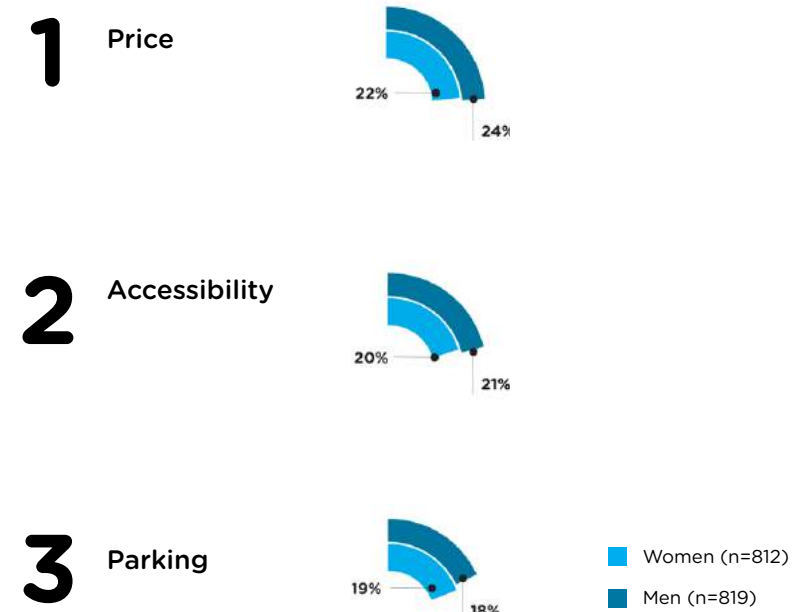
CHALLENGES AND CONCERNS WITH SHARED CAR

When it comes to challenges and concerns "Price" is identified as the primary challenge and concern globally.

The result covers local differences:

- In **Helsinki** "Parking" is the primary challenge and concern
- In **Oslo, Stockholm and Copenhagen** "Accessibility" is the primary challenge and concern
- In **Singapore** and Berlin "Price" is the primary challenge and concern and it's indicated by 59% more men than women in Berlin.
- In **Delhi** "Corona" is the primary challenge and concern

WHICH CHALLENGES AND/OR CONCERNS DO YOU HAVE IN RELATION TO SHARED CARS?



The respondents were asked to indicate which of the following challenges and concerns they associate with different modes:

- Accessibility
- Traffic safety (accident in traffic)
- Personal safety (harassment, assault)
- Time of day traveling
- Which route to take
- How to use
- Corona
- Accompanying children or other relatives
- Traveling with groceries, bags etc.
- Shoes and clothes
- Travel time
- Price
- Weather conditions
- Air pollution/emission from vehicles
- CO²-emissions/Not climate friendly
- Other
- No concerns
- Don't know

Multiple indications were allowed.

SHARED CARS AND TECHNOLOGY

When asked how often respondents use digital services when traveling, the global responses were the following:

Booking shared cars via apps	Never	Rarely	Sometimes	Often	Very often	Don't know/Not relevant
Women	59%	10%	8%	5%	3%	15%
Men	54%	11%	12%	6%	4%	12%

New shared mobility services have a small market share and it shows in the usage numbers - 16% of women and 22% of men use carsharing apps regularly.

Locally, the gender distribution for booking shared cars via apps is the following:

- In **Helsinki** 10% of men and 3% of women
- In **Oslo** 16% of men and 9% of women
- In **Stockholm** 13% of men and 8% of women
- In **Copenhagen** 14% of men and 8% of women
- In **Berlin** 14% of men and 7% of women
- In **Delhi** 53% of both men and women
- In **Singapore** 33% of men and 23% of women

In all seven countries, men use new mobility services more than women. Delhi and Singapore are leading the way when it comes to usage of car sharing for both men and women. In India the usage of carsharing is quite equal between men and women.

RIDESHARING



According to our survey women and men associate the following with ridesharing:

- Corona unsafe
- Cheap
- Sustainable
- Comfortable

"Corona unsafe" is the primary association for both women and men. The biggest gender difference in the top 5 associations is for "Sustainable". 24% more women than men have that association for ridesharing.

The global results cover local differences:

- In **Stockholm** "Corona unsafe" is the most associated word with car-sharing and 33% more women than men have that association. 20% more women than men associate "Sustainable" with ridesharing
- In **Copenhagen** "Sustainable" is the most associated word with ridesharing. 33% more women than men associate
- "Corona unsafe" is the most associated word with ridesharing in **Helsinki**. 50% more women than men have that association. 27% more women than men associate "Sustainable"
- "Expensive" is the most associated word for ridesharing in **Berlin** with 90% more men than women having that association. "Comfortable" is the second most associated word with 200% more men than women.
- "Corona unsafe" is the most associated word in **Delhi** and 20% more women than men have that association. 48% more women associate "Unsecure (personal safety)" with ridesharing than men.
- In **Singapore** "Corona unsafe" is the most associated word with ridesharing, but here it's 35% more men than women that have that association. In relation to "Unsecure (personal safety)" on third place 79% more men than women have that association.
- In **Oslo** "Sustainable" is the most associated word with ridesharing. 4% more men than women associate.

In our survey the respondents were asked to indicate which of the following words they associate with different modes. The words they could choose from were:

- Fast/Slow
- Reliable/Unreliable
- Active/Passive
- Comfortable/Uncomfortable
- Sustainable/Unsustainable
- Powerful/Weak
- Fun/Boring
- Traffic safe/Traffic unsafe
- Corona safe/Corona unsafe
- Secure (personal safety)/Unsecure (personal safety)
- Cheap/Expensive
- Other
- None of these
- Don't know.

Multiple associations were allowed.

WHICH OF THE FOLLOWING WORDS DO YOU ASSOCIATE WITH RIDESHARING?



The respondents were asked to indicate which of the following challenges and concerns they associate with different modes:

- Accessibility
- Traffic safety (accident in traffic)
- Personal safety (harassment, assault)
- Time of day traveling
- Which route to take
- How to use
- Corona
- Accompanying children or other relatives
- Traveling with groceries, bags etc.
- Shoes and clothes
- Travel time
- Price
- Weather conditions
- Air pollution/emission from vehicles
- CO²-emissions/Not climate friendly
- Other
- No concerns
- Don't know

Multiple indications were allowed.

CHALLENGES AND CONCERNS WITH RIDESHARING

When it comes to challenges and concerns “Corona” is identified as the primary challenge and concern globally for ridesharing and with 20% more women than men identifying that as challenge and concern. 55% more women than men identify “Personal safety (harassment, assault)” as a challenge and concern.

The result covers different local differences:

- In **Delhi** 21% more women than men identify “Corona” as a challenge for ridesharing. It’s followed by ridesharing that 58% more women than men identify as a challenge and concern.
- In **Oslo** 38% more women than men identify “Corona” as challenge and concern
- In **Stockholm** 59% more women than men identify “Corona”, 75% more women indicate “Accessibility” and 150% more women than men indicate “Personal safety (harassment, assault) as a challenge and concern with
- “Time of day traveling” is the most identified challenge and concern in **Helsinki** and “How to use it” is third with 65% more women than men indicating.
- ridesharing
- In **Copenhagen** the primary challenge identified is “Accessibility”. As for “Personal safety (harassment, assault) 160% more women than men identify that as a challenge and concern.
- In **Berlin** “Price” is the primary challenge and concern identified. 59% more men than women identify.

RIDESHARING AND TECHNOLOGY

When asked how often the respondents use digital services when traveling the global responses where the following:

Booking shared rides via apps	Never	Rarely	Sometimes	Often	Very often	Don't know/ Not relevant
Women	59%	10%	9%	4%	3%	15%
Men	55%	11%	12%	6%	5%	12%

New shared mobility services have a little market share and it shows in the usage numbers - 16% of women and 23% of men use carsharing apps regularly.

In all seven countries except India, men use new mobility services more than women. Delhi and Singapore are leading the way when it comes to usage of car sharing for both men and women. In India the usage of carsharing is quite equal between men and women.

Locally, the gender distribution for booking shared rides via apps is the following:

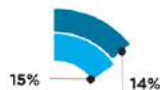
- In **Helsinki** 10% of men and 2% of women
- In **Oslo** 14% of men and 10% of women
- In **Stockholm** 16% of men and 6% of women
- In **Copenhagen** 12% of men and 9% of women
- In **Berlin** 15% of men and 4% of women
- In **Delhi** 52% of men and 54% of women
- In **Singapore** 35% of men and 28% of women

WHICH CHALLENGES AND/OR CONCERNS DO YOU HAVE IN RELATION TO RIDESHARING?

1 Corona



2 Accessibility



3 Price



■ Women (n=797)
■ Men (n=803)



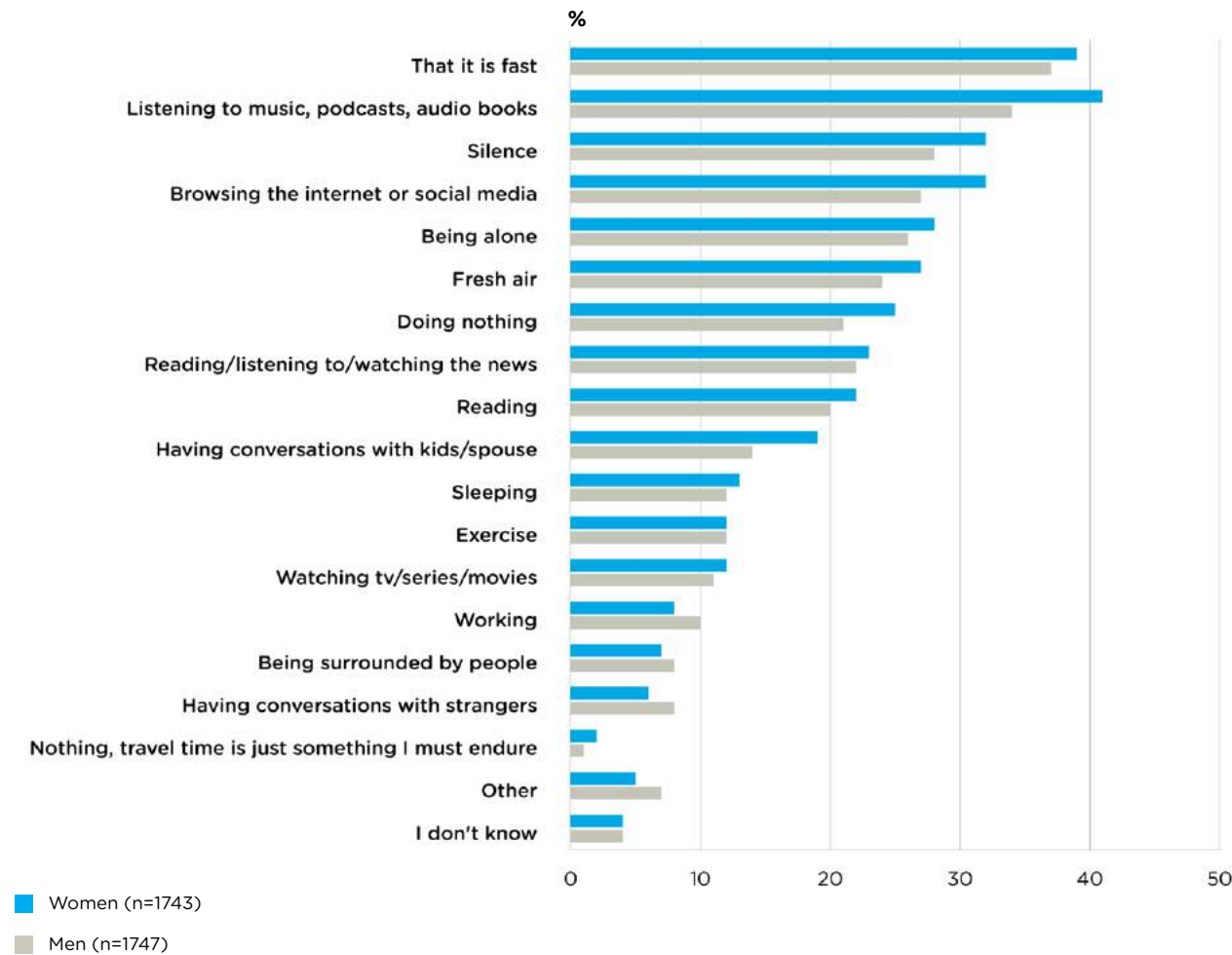
TRAVELTIME



In the survey we asked the respondents what they value about travel time. Respondents could check multiple answers. The graph below shows the global results segregated by gender.

36% more women than men value having time to talk to children or spouse when traveling. 21% more women than men value listening to music, podcasts and audio books. 19% more women than men value "doing nothing" when traveling, and 14% more women than men enjoy the silence.

WHAT DO YOU VALUE ABOUT TRAVEL TIME?



The respondents could give multiple answers to the question. The percentage is therefore over 100. The percentage show the share of respondents who reported each answer.

When looking at the national numbers there are some local differences. For the Finns speed, being alone and doing nothing is the top 3 values of travel time for both women and men. In all the Nordic countries and Germany speed is of high value of both women and men. Fresh air is in top 3 in Germany and India. In India and Singapore speed it not in top 3 - instead brows-

ing the internet or social media and listening to music, podcasts, audio books is the top 3 values of travel time for both women and men. And the numbers for men and women are quite close in Singapore unlike several of the other countries.

	Woman	Man
Base: All	253	249
That it's fast	65%	56%
Being alone	36%	33%
Doing nothing	40%	29%

	Woman	Man
Base: All	250	240
Silence	44%	38%
That it's fast	35%	46%
Fresh air	28%	28%

	Woman	Man
Base: All	245	249
Listening to music, podcasts, audio books	53%	38%
That it's fast	46%	39%
Silence	43%	32%

	Woman	Man
Base: All	245	255
Listening to music, podcasts, audio books	50%	44%
Browsing the internet or social media	47%	37%
Fresh air	36%	38%

	Woman	Man
Base: All	248	256
That it's fast	42%	44%
Listening to music, podcasts, audio books	43%	34%
Being alone	34%	33%

	Woman	Man
Base: All	255	245
Browsing the internet or social media	45%	45%
Listening to music, podcasts, audio books	35%	41%
Being alone	32%	31%

	Woman	Man
Base: All	252	249
That it's fast	44%	33%
Listening to music, podcasts, audio books	39%	28%
Silence	29%	25%

In January and February 2021 we carried out group interviews with women in the seven capitals in this study. The purpose was give voice to “the female users” and learn more about their challenges and concerns when moving around in their daily lives.



TRAVELING IN HELSINKI, FINLAND

The focus group interview was carried out February 10th with five women in their 30s and 40s living in Helsinki region.

Iiris, lives in the city center of Helsinki. She works with research projects and normally travels to her office based in Helsinki a few times a week. She uses public transportation and the HSL app for tickets. She also uses a bike a lot in summer. Iiris doesn't own a car, but occasionally she uses a rental car or car sharing services together with her partner. Although Iiris has a driver's license, she hasn't driven a car for 10 years.

Kaisla lives on the border of the Helsinki region but travels within Helsinki due to her work. She works as a team manager in Helsinki next to Pasila railway station. Usually she drives to work by car, but on trips within Helsinki she likes to use public transport. Previously, she used to travel more often by train when she had better employment benefits for public transportation. She also owns a motorcycle.

Vilja works in the health sector and she lives in a suburb of Helsinki with her partner and two children. She appreciates good public transportation services from her home to Helsinki city center and areas around her home neighbourhood. Vilja has access to a family car but when travelling alone she mainly uses public

transportation. When there is a need to carry extra-large shopping, she chooses to use the car. In the future, she will have a light rail connection close to her home. Also, when her schedule isn't as time-restrictive, she likes to walk and simultaneously get her daily exercise.

Lilja works as a contracting project manager. She lives in Helsinki city center and her office is next to Pasila railway station. In addition to travelling to office, she often needs to visit construction sites. Inside the city she mostly walks, uses the tram and commuter train services. In summer, she cycles, especially in her leisure time. Every now and then she uses a car for her daily travelling. She also has a license to fly light aircraft which she can use for longer trips.

Vuokko is an entrepreneur and lives in Helsinki city center. She works partly from home and partly around the metropolitan area organizing events. She does not own a car and therefore she mainly travels by public transportation and for shorter trips she walks. Vuokko also uses her bicycle when there is no ice or snow. Her hobbies take place around the city center apart from hiking which she does in forests at the border of the Helsinki region.

MANY FACTORS AFFECT THE MODAL CHOICE

We can identify differences in modal choices of the interviewed women. Regardless of the choices, there are many similar contributing factors that influence their travel choices: e.g. price, travel time, available transport connections, habits, comfort, reliability, flexibility, and freedom of choice.

These women are wise consumers and price of different transport modes often rules their mobility choices. If the length of a trip is short enough and they don't have a prepaid public transport season ticket, they all choose to walk, instead of buying a public transport ticket. For these women, choosing to walk or cycle is also often a matter of having a short moment by themselves or having a possibility for functional exercise within their daily routines. Vilja also adds: “I often try to travel for the whole money, meaning that I try to optimize my trips so that I'm able to come back during the validity of my return ticket.” Other interviewed women agree since they often use the possibility for a return ticket.

Time is another valuable factor for them. Iiris says “I identify myself as a time-optimizer and I most often choose the fastest way to travel.” For her, walking or cycling are the modes that she prioritizes because these modes are schedule-free, and the journey time estimate is always reliable. She also adds: “I experience great frustration if I choose public transport and it's running late.” Kaisla and Vuokko are optimizing time as well but simultaneously they optimize the number of changes in the trip chain. They like to plan and schedule their trips very well beforehand, and they feel that different public transport modes and walking are most often the best combination for them to make functional plans. Other women partly agreed regards optimizing the number of changes and frustration on public transport being late.

“ I identify myself as a time-optimizer and I most often choose the fastest way to travel.

IIRIS

TAXIS AND CAR SHARING ARE AN OPTION SOMETIMES

Many of these women use taxis or car sharing services if needed. Nevertheless, taxis and car sharing are used quite seldom partly because of a perception of these modes being expensive. Price seems to govern especially the use of taxis during leisure time. For example, Iiris explains: “I used to take taxi more often through a local SaaS service while it was possible to get a ride for a very affordable price for short trips. Low prices definitely encourage me to change my traditional ways of travelling.” Even though the taxi is seen as an easy way to travel, it's mainly been used for work related trips.

The taxi brings convenience for travelling for Iiris and Vilja at least. Especially during night time, a taxi often feels more convenient and safer compared to public transport. Vilja also brings up that when going out without children, she uses a taxi as it is easy, quick, and safe and she maximises the time she has on her own.

One argument for using a taxi or car sharing is that these modes are seen as easier when you don't need to pay for parking. With a taxi you don't even need to find a parking spot in the city. Kaisla adds: “I often use my employment benefit and workplace parking close to a railway station as a park and ride for my own car when I come to the city. This way I don't need to stress about finding a parking space or paying costly parking fees.”

Iiris proved to be the most experienced in using different car sharing services, partly because her family doesn't own a car. She has used several services. Otherwise these women don't have much experience of car sharing services. Lilja and Vuokko have used rental cars or other similar services occasionally, but they agree that public transportation is covering al-

“ The more infrastructure is developed for cycling, the more I will be riding my bicycle.

VUOKKO

most all their travel needs within the city and therefore the need for car sharing is quite limited. Vuokko adds: "There is quite good public transportation also to excursion destinations in the Helsinki region. One reason for me to use the bus instead of car sharing on these trips, is that the bus gives me flexibility I don't need to come back to the starting point and instead I can take a bus home from another location."

EASY JOURNEY PLANNING AND A MOBILE APPLICATION MAKES TRAVELLING EASY

All the interviewed women are experienced and happy users of the HSL public transportation application, where you can plan your journey and buy tickets in the Helsinki region. Lilja feels that the usage of the HSL app is smooth and transit is easy and convenient with the application. Iiris added that user experience of the app has become better over the years. They value flexible features in the HSL app, such as several alternative payment methods like billing via phone bill or using a credit card. Also, a feature for vehicle tracking and an indication for the true arrival time is highly valued.

Smoothness and reliability of an application are very important for the women. For example, one other app isn't perceived as convenient when the payment is forced as an automatic monthly payment, enabling the user to accidentally pay for too long a period. Among the women there were still a few ideas to be developed for the HSL app. Kaisla and Lilja would like to see the app cover areas outside the Helsinki region, so it would be easier to travel and plan even longer trips with just one service. Vuokko added: "Since I'm conscious of travel costs, I would like to see a feature in the HSL app that would recognize when the combined value of single tickets exceeds the season ticket price and then you could switch to the monthly ticket."

CONTRADICTORY THOUGHTS ON OPPORTUNITIES AND FEAR TOWARDS CYCLING

Cycling is seen in different ways depending on the personal level of experience with cycling. Vuokko, being one of the most experienced with cycling, says: "I cycle a lot and I like it very much. Cycling gives me a possibility to get good exercise as well. My courage has significantly grown on the bike and I'm not feeling so many fears towards cycling anymore, partly because I have found suitable routes for my needs." Through experience she has learned to be bolder and take her own space on the road. Iiris agrees on the possibility for exercise. She also uses her bicycle a lot and likes how easy a mode it is to travel around the city. Iiris and Vuokko often choose cycling instead of public transport due to a competitive travel time on shorter trips. Vilja never cycles because she feels that it is too slow for her time-optimizing purposes.

Nevertheless, the interviewed women feel that there are great differences in the sense of safety between men and women while cycling. Lilja says: "I'm not that afraid of car drivers while cycling. Instead I fear fellow cyclists who ride too fast and do not take other road users into account. A quick guide to traffic rules would be needed." Iiris added that at times motorists misbehave and let cyclists cross their way even if it's not their right. Kaisla who has been riding in Helsinki only a couple of times, feels that from a driver's perspective cyclists are dangerous, because they ride against traffic rules. Regardless of the perspective, these women are worried about the lack of knowledge towards traffic rules. Women agree that the infrastructure plays a key role and guides us in the traffic environment. Vuokko adds: "The more infrastructure is developed for cycling, the more I will be riding." Lilja agrees since the new cycling Baana routes in Helsinki were a clear reason for her to buy a bike. "Good infrastructure encourages cycling", she says.

Many international examples were raised during the interview. Like in some European cities, having clear cycling routes and no need to think about who's right of way it is or where to ride, is seen as beneficial to encourage cycling for these women in the Helsinki area. Vuokko continues: "In Helsinki the infrastructure is still undeveloped, and you don't always know where to ride. Because the rules are complex and the infrastructure does not support cycling behavior, you may accidentally misbehave and ride somewhere you shouldn't. The traffic designers should consider all the mobility modes better." Vilja brings up her own experience as well and tells about her experiences abroad: "How wonderful it was when everyone respected the traffic rules. The level of respect for others was better than in Finland and the rules were understood. I feel that if we would have that kind of a traffic culture, I would cycle." Vuokko adds that she thinks the culture of cycling is created by cycling.





TRAVELING IN OSLO, NORWAY

The focus group interview was carried out February 4 with three women based in Oslo.

Anne is in her 30s and lives with her partner and one child. Anne works full time and usually cycles to work. The journey is approx. 20 km back and forth, so Anne uses this as her everyday training. Since she also works at night, she sometimes drives the car. Otherwise, she likes to use train or subway in everyday life.

Astrid is in her 40s and lives with her partner and one child. Astrid both walk, cycle, and run to her full-time job. Otherwise, she is very fond of using the metro. Astrid has a car and usually uses it on weekend trips or for longer trips, but rarely uses the car in the city.

Randi is in her 50s and lives alone outside Oslo with her 2 children. Sometimes she also lives with her boyfriend in the city. Randi works full time and likes to use public transport to and from work. She likes to cycle with her children to leisure activities. Randi does not own a car but has access to her boyfriend's car.

For Randi, however, cycling to work has not been as inviting. When she moved outside of Oslo, she looked forward to using the main cycle path along the Oslo fjord for work. This is a cycle path which is also called "Tour de Finance" and is known for fast and a bit ruthless cycling. Randi says that the cycle path has become a pure exercise route where it is about breaking your own record. "It's simply deterrent. It's not the cycling itself, it's about the horrible male cyclists around you that makes it not all right." She also believes that increased use of electric bicycles has turned up the pace, and not just the fast men. The combination of an unsafe cycle path and unsafe bicycle parking means that she prefers to use public transport to work and to the city center.

All three women agree that it is challenging to park the bike in the city center. Astrid often choose to walk in the city rather than using the bike. If she rides a bike, she chooses to park it where people can easily see it.

THE IMPORTANCE OF BEING ABLE TO WALK EVERYWHERE

Walking is a very natural part of everyday life for people in Norway. "We do not think of it as a transport mode. It is an integral part of our everyday life" says Randi. Anne would not settle in a place where it is not convenient to walk. Astrid agrees that it is incredibly nice to be able to know that you have the opportunity to walk to most purposes such as grocery shopping or going to kindergarten.

Randi says that where she lives outside of Oslo, there is a relatively high car share. This place has a large proportion of people moving from more rural areas where the car has been a more natural part for most purposes. It's easy to continue with the habits you

grew up with. If you grew up walking and cycling to school and training, you are happy to continue with it even in adulthood.

SHOPPING TRIPS WITH OR WITHOUT THE CAR

None of the women use a car for shopping trips. They mostly choose to walk, and sometimes cycle. Astrid thinks it is inconvenient to go by car with the small child because they must be carried in and out of the car. She would rather walk with the stroller or taking the subway. Randi uses the bus and likes to shop on the way home from work. She does however think it would have been nice to have access to a car to do few big shopping trips instead of having to go to the shop every other day or two.

A LIFE WITHOUT A PRIVATE CAR?

The need to use a car usually arises spontaneously. Therefore, using a car-sharing service can be a bit inconvenient since it requires some planning. Astrid, for example, may suddenly feel like going skiing and then it only takes about 15 minutes before she sits in the car and is on her way. She appreciates the freedom of having a car and it makes her forget all the expenses of having it. For Randi, economy is the reason for not having a car. She has chosen to live in a place where she is not dependent on the car. Where she lives, she has a grocery shop, public transport stops and ski trails just a few minutes' walk away.

The biggest concern with driving is that it can be difficult to find a parking spot, and that there are traffic jams in rush hours. Astrid also experiences that the cityscape has changed as she has grown older. "Especially with all electric scooters, I experience the cityscape as somewhat confusing and I get worried that I will crash into on someone," she says.

Anne believes that it may be relevant to use a car-sharing services if they move to a place without a garage or parking space. Randi has used the private rental car scheme Nabobil a few times but thinks there is a reason why car-sharing services and especially carpooling has not taken off to such an extent in Norway. She says, "It takes a lot of you to let someone into your car, or to sit with someone in another car." In the morning in particular, Randi does not really want to talk to others she does not know very well. She would rather take the bus where she gets time alone. Anne thinks she would have used carpooling more if she had had some well-known colleagues who lived in the neighborhood.

PUBLIC TRANSPORT AND INSECURITY

Astrid prefers the metro rather than the bus, as the bus is less predictable and less comfortable. Anne says she still trusts the bicycle more than the train and other public transport. She also mentions the feeling of inse-

curity as limiting her use of the train from work in the evening. She may feel insecure when she, for example, has to change train late at night at Oslo Central Station. Randi can feel insecure on the metro if there are only a few other people. You also cannot see the driver which makes you feel more alone than on the bus. "Then you take a seat closest to the exit so you know you can run out quickly. Most people have experienced things, and then you learn to adapt because you have to take precautions. Men never think of that." says Randi.

Anne says she rarely has conscious strategies to feel safer when she takes public transport in Oslo, but she likes to choose a bicycle rather than walk since she can then get away faster with the bike. Astrid finds it uncomfortable to be talked to when you do not feel like it. "I like to use earphones and to be standing instead of sitting to show that I have nothing to do with anyone. And to look like I'm not scared" says Astrid. She further says that she doesn't read the cityscape as well as she did when she was young, which creates insecurity. Astrid goes on and says: "It is bad that you have all these strategies, and that you hardly think about them. They are almost a part of me." Randi agrees that insecurity has changed from when she was younger. "In the past, I was afraid of unwanted attention, now it has changed to being afraid of being robbed." Astrid believes that insecurity can also increase when you no longer feel so strong physically while getting older.

APPS ARE GOOD, BUT INFORMATION SHARING CREATES INSECURITY

Randi believes that buying tickets via apps for herself and the children has become much easier with new technology. Anne agrees and adds that it has become much easier to plan a trip. Since most things can be bought with a mobile phone, she does not have to bring cash with her, and therefore believes that it is also better from a security perspective. "Now you can always feel that you can get home," says Anne.

However, information gathering, and IT security can be a cause for concern. Randi says that she tries to use app technology as consciously as she can, but that she sometimes feels exploited when she gets advertising for something she has just passed. Astrid is skeptical of all kinds of information gathering that app use involves. She deliberately chooses not to use the location functionality in the travel apps, which means that they cannot be used fully. "Then I make it very impractical for myself so that the actors do not know exactly where I have been," she says. It would have been better if you, for example, could see the bicycle availability in the city bike app without having to use the location sharing functionality. The apps should therefore have more choices in connection with information sharing without compromising on the functionality.



TRAVELING IN STOCKHOLM, SWEDEN

The focus group interview was carried out via Teams on 9th of February 2021. The group of women was presented by:

Susanne is in her 50's and lives with her partner in the outskirts of Stockholm. Her two children do not live at home but when they were little she used to cycle and use public transport a lot. She took her driver's license in her 30's and nowadays she commutes to work by her own car.

Julie is in her late 20's and moved to Sweden three years ago. Lives with her partner and work full time. She does most of her trips by bike, both to work and for other purposes.

Emma lives with her partner in central Stockholm and has a daughter aged five. She is in her 30's and has made an active choice not owning a car. For most of her trips she cycles or uses public transport, but she also uses floating electric pool cars for some occasions.

THE PANDEMIC

In the interview we tried to reflect on mobility under usual circumstances before the pandemic. But all the women agree on that the pandemic greatly has affected their habits and their view on mobility in the city. Susanne commutes by car but would have used the commuter train for trips to the city center and sometimes for commuting if not for the pandemic. Emma used to travel by metro several times a week but have only been to her local metro station three times during the last year. Susanne said: "I start to miss the train stations and escalators that used to be boring everyday life".

FREEDOM, SPEED AND FLEXIBILITY

All three women associate both driving a car and riding a bike with freedom and flexibility. "It is freedom for me", says Susanne. "In many ways it is hard to beat the car" says Emma and continues "it is an active choice not to have a car but when we rent a car, I feel it is very neat". But all of them also mentions the down sides of owning and driving a car. Emma's choice not to have a car is partly because of the environmental aspects such as air pollution. "I have a wish of living in a city where you don't have to use a car".

"It is nice to drive a car because then I can choose for myself when to go", says Susanne. "But at the same time, it is extremely frustrating to be stuck in traffic for half an hour on my way to work. So if I have a meeting early in the morning I choose the mode that I think will get me there in time."

"It is freedom and the feeling of the wind in my hair" says Emma about biking. The everyday exercise that comes from biking is also important for her.

The possibility to make easy stops on the way from work is Julie's favorite thing when it comes to biking. "It is really flexible, and I can go whenever I want without considering the timetable or so". Susanne points out the same when it comes to walking, "You can run these quick errands and taking the opportunity to run errands on my way to something else, maybe a typical womanly thing to do."

When it comes to public transport Susanne, Julie and Emma agree that the buses feel slow, but the metro feels more efficient. "The buses in Stockholm city feels really slow", "Yes, useless. I can't understand how you get anywhere."

Emma points out that the high efficiency and frequency of the metro might affect the stress levels. "The metro enhances the stress levels in the city. Traveling can be quick, and you expect it to be quick and becomes annoyed if you have to wait for a couple of minutes. You get used to a high frequency and a high level of service".

Cycling can be both relaxing and stressful according to the women in the interview. The feeling depends mostly on the traffic conditions and the kind of infrastructure that the city provides for cycling. "When cycling it is nice to let go of the work and to get some exercise. But my cycling route to work is quite stressful so I seldom experience that calmness" says Emma and explains that most of her way to work is on cycle lanes in the driveway, not on segregated cycle paths. Susanne has also reflected on that traffic in general might cause stress and that she is feeling less stressful in her everyday life now when she doesn't have to go into central Stockholm every day.

Emma and Julie who don't have daily access to a car both experience grocery shopping by bike a bit challenging. "I cycle everywhere but when I have to go grocery shopping or carry heavy stuff I walk instead", says Julie.

Also the weather and clothing seems like a challenge for Julie when cycling. "I don't want to dress like a racing cyclist or carry a lot of extra clothes to change so this is a bit of a challenge during the Swedish winter".

PERSONAL SAFETY AND SECURITY

All three women in the group says that they use different strategies to feel safer and to avoid the risk of harassment when travelling in the city especially by

public transport. Three of the examples they mention is to call a friend when travelling alone in the evening, not listening to music or to sit close to other women. "I tend to see which train carriage other women get on and then I go to the same one", says Susanne. For Julie cycling feels secure as she can easily go faster and pass places or streets that feels insecure.

The sense of safety varies depending on the time of day and how crowded the stations are. "It is hard to feel safe during the evening in public transport in Stockholm" Susanne adds. "It can be nice to be a part of this crowded flow of people when everyone is going home from work. But three hours later you are all alone".

Also, such diverse events like football games or terrorist attacks affects the feeling of safety and the willingness to use public transport. Both Susanne and Emma avoid using public transport when they know there is a football game on the arenas near their stations. Susanne has also reflected on her feelings going deep down under the city by metro and says that after the terrorist attack in Stockholm 2017 she was really uncomfortable travelling by metro.

Susanne and Emma who both have been living in Stockholm for more than ten years note they feel less safe travelling in the city now than they used to do. They both connect this with the fact that they are getting older. "I've never felt unsafe but now I have started doing so more. I don't know if it is because I'm older, because I have become a mother or because it actually is less safe. Or if I'm not out that much anymore so it turns unsafe because it is unusual for me."

NEW MOBILITY

The experiences from new forms of mobility varies among the women in the group. Julie and Emma, who don't have private cars, have both used carsharing for private trips and Susanne, who has access to a car pool at her workplace, says that if she lived in a more central part of Stockholm she would use carsharing services more. The women on the one hand express a wish to be able to live without owning a car and using carsharing services instead, but also express that carpooling is less flexible and feels more expensive every time you use it than owning a private car. Emma is certain that she and her family will continue to use pool cars and she also thinks that home delivery and online shopping can help to make a life without a private car easier.

None of the women are very fond of e-scooters but two of them have tried them for fun. Susanne thinks that the traffic was a bit messy with e-scooters when they first came to Stockholm and that it feels a bit unsafe as a pedestrian.

To be able to use mobility services like carsharing more Emma wish to have an app that connects you to all the different service providers. She also says that she needed a bit of a push to start using the carpool app instead of letting her partner book the cars.



TRAVELING IN COPENHAGEN, DENMARK

Two focus group interviews were carried out via Teams in Copenhagen end of January 2021. The first one with the following group of women:

Mona 26, student, no children, lives alone, no driver's license. She walks, cycles and uses the bus, S-train and Metro.

Anna, 29, works full time, 16 km to work, no children. No car. She has a driver's license but does not feel confident enough to drive in Copenhagen. The bicycle is her primary means of transportation. She leases an electric bicycle and combines it with the S-train in the wintertime.

Hanne, 45, works full time, 10 km to work, married, no children. She walks, cycles and takes the bus and is a passenger in the family car in the weekends driving to their cottage house. She got a driver's license a couple of years ago, but it was a very bad experience, so she does not want to drive herself.

“Public spaces feel very different during the day and at night in the dark. In daylight narrow streets, small cozy spaces with seating areas and greenery is very nice and welcoming. But at night in the dark those places make me unfordable. I can't see if people are hiding there.”

ANNA, COPENHAGEN

ALL CATS ARE GREY IN THE DARK

Mona, Anna, and Hanne like many other Copenhageners combines walking, cycling and public transport when moving around the Danish Capital. They love cycling – it's fast and they get exercise and they feel very safe cycling in Copenhagen.

But when traveling on public transportation they are all very alert, especially at night. “I often choose to stay over at my parent's house instead of going home at night when it's dark. I need to change bus. I don't like that late at night,” Mona says.

Anna agrees: “If I see on Rejseplanen that I have to change bus and wait 15-20 minutes, I find another connection – even if the total travel time is much longer. Better than waiting somewhere, where I don't know the conditions, I must wait in. The physical environment as well as number of people in the area – it all influences how I feel waiting at a bus stop at night.”

The number of people inside the bus also influences the experience according to the three women. If there's a group of noisy people in the bus Mona would rather get off and wait for the next one despite disliking changing bus in the hope it's quieter. Groups of loud people make her very anxious and uncomfortable. But an empty bus can also feel uncomfortable. “One time a guy came and sat down next to me even though the bus was empty. He kept asking me questions even though I had my earphones in and was signaling that I didn't want to talk. I was afraid and felt threaten,” she explains.

Hanne is also very aware when travelling at night or on a very crowded bus: “My antennas are all out if it's a crowded bus. I'm very aware of my body parts and smells. Really bad air quality and smells on crowded busses. I don't think the decision makers in public transport uses public transport. If they did, they would realize that it can feel like you are cattle on a truck on the way to the slaughterhouse,” she says.

DAY AND NIGHT

Walking is often an integrated part of traveling with public transport. And walking during the day and walking at night in the dark is two very different experiences, according to the three women. They all have strategies for walking at night. Anna always listens to music – because of the music, but also to signal, that she does not want to talk. When she arrives at the entrance door to her apartment building, she always checks that no one enters behind her. “Public spaces feel very different during the day and at night in the dark. In daylight narrow streets, small cozy spaces with seating areas and greenery is very nice and welcoming. But at night in the dark those places make me unfordable. I can't see if people are hiding there. It makes me feel insecure. At night I prefer big open squares and wide sidewalks where you have space and can have an overview of the area,” she explains.

Both Mona and Anna often walk with their keys between their fingers in their pocket as a weapon. Hanne doesn't do that but explains that she “scans” the urban environment – who's there and where. And she often crosses the street if she's approaching people that makes her uncomfortable. “I often wonder why public spaces to a great extent are designed for men and boys – skater parks, ball parks and public exercise machines. I don't know any women who would work out in public like that.”

The women also reflect on the physical design of transport infrastructure like train stations and tunnels. They agree that it must be possible to design them, so they feel safer waiting at the platforms – better lighting at the station, available personnel in a kiosk etc. could make them feel more secure. Also, underpasses leading to or between the platforms could be better designed. Bad lighting, ugly colors, spiderwebs full of bugs and graffiti makes these underpasses feel very insecure.

TO SHARE OR NOT TO SHARE

As much as the women agree on traveling at night and public transportation, their opinions differ when it comes to ridesharing: “I don't like riding with people I don't know,” say Hanne. “It's very awkward for me. And to me it's like hitchhiking. You never know if you end up in the car of a psycho!”

Mona thinks more about the driving skills of the driver than the mental state. “You don't know how they drive. With taxi drivers you know they are trained, and you can call and report them. Which I have done a couple of times.”

Anna like ridesharing services like Uber better than taxis “With the ridesharing services you can see a rating of the specific driver. With a taxi, you know nothing about the driver.”

ANALOG OR DIGITAL

“I love Rejsekortet! It makes public transport so easy to use! But I would like to have an app-version. I don't walk around with physical cards in a wallet anymore,” says Mona, when the conversation turns to digitalization of transport. Anna agrees. She also never carries a physical wallet with cards around anymore. She has everything on her phone and loves how easy public transport is with Rejseplanen and Google Maps.

Hanne also has a travel card but has some concerns: “Rejsekortet is smart and convenient, but I'm concerned about all the data about me that is being collected. And I don't like having everything in one place – on my phone. If I lose it, I lose everything. And criminals will know everything about me.”

They all agree that data and technology make traveling easier, but it also creates expectations. “If you're told that the bus will arrive in one minute, you expect it to arrive. If not, you get disappointed”.

TRAVELING IN COPENHAGEN, DENMARK

Two focus group interviews were carried out via Teams in Copenhagen end of January 2021. The second one with the following group of women:

Charlotte, in her 50'ies, in between jobs, lives alone and has no children.

Maja, in her 40'ies, works full time, lives with her husband and their 3 children. They don't own a car. They both cycle 20 km to work. She has a Bullitt e-cargo bike and her husband has a speed pedelec. They are members of a carsharing club.

Camilla, in her 30'ies. Works full time. Lives with her husband and their two children. She cycles to work, and her husband drives their car.

Maria, in her 20'ies. Moved to Copenhagen from US. Working full time, lives in a shared apartment. No children. Cycles everywhere.

Signe, in her 20'ies, no children, married to her bicycle and just finished her Master and looking for a job.

“**On the bike I can get away fast, but in the train, I'm stuck. And I often wonder if someone would interfere if a situation occurred. On the bike, I'm in control!**

CHARLOTTE, COPENHAGEN

“THE BICYCLE IS MY SAFE SPACE”

All 5 women walk and uses public transport, but for them the bicycle is their favourite means of transportation and they use it for all purposes. The bicycle is both fast, easy and cheap transportation and exercise at the same time. Camilla says, “The bicycle is the fastest means of transportation through the city.” Only if she must transport very big stuff or a lot of heavy groceries, she will use the car.

Sometimes Signe combines the bicycle with the S-train because it's free and easy to bring the bicycle on board the S-train. But she does not bring the bike on the Metro. “I'm not quite sure what the rules are,” she says.

For Maja who rides 20 km to and from work every day on her electric cargo bike the facilities at work means a lot. “My bike is expensive, and I can't live without it, so it's very important that I can park it a safe place at work. We have secure underground bicycle parking that keeps it safe.” Facilities to shower and change clothes at work also matters a great deal to her: “Because I have such a long commute I shower and change from cycling clothes to regular clothes at work.”

Bicycle parking is a factor that Signe considers too. If she takes the S-train she walks to the station because bicycle parking at the station is very poor.

Camilla does not care about whether it's night or day “I have very strong bike lights,” she says. But she thinks about which route to take: “I choose well-lit routes. When I lived on Vesterbro I had to ride across Amager Fælled. There's a path there and it's super dark and scary to ride alone in the dark. But with that said, I feel safe and secure on the bike. The bike is my safe space. I feel unsecure walking at night.”

Signe also thinks a lot about which route to take. At night she chooses well-lit routes and streets, but at daytime she chooses beautiful and quite routes – even if they are longer: “I will always choose a nice and quiet route like “The Green Route” over Nørrebrogade. That street is like a war zone! It's crazy on the cycle path. A year ago, another cyclist knocked me over when overtaking very fast! I had a concussion. It took me a while to get over.” Charlotte agrees “I feel safe cycling in Copenhagen, but I fear fast men in lycra!”

Generally, the women agree that other cyclists are one of the biggest problems in Copenhagen – cyclists with noise cancelling earphones, fast “carbon bike guys”, elderly on e-bikes and tourists on public bikes.

Camilla agrees that one of the main challenges to cycling in Copenhagen is congestion on the cycle lanes, so she often chooses a longer route to avoid having to wait her turn to cross at the intersections. Maria does the same: “I want to avoid all the signalled crossings. It's so annoying having to stop all the time!”

Since she has a very long commute Maja think about the conditions of the cycle path at wintertime. But she still prefers being alone at night on a well-lit cycling superhighway than in the S-train: “I feel safe on the bike. In the train I feel more vulnerable stuck with smelly, drunk and loud people.” Charlotte agrees: “On the bike I can get away fast, but in the train, I'm stuck. And I often wonder if someone would interfere if a situation occurred. On the bike, I'm in control!” Maria agrees: “In the US I did not feel safe. In Denmark I do. And I can cycle faster than they can run!”

TECHNOLOGY IS NICE!

The women all agree that technology has made route planning and travel planning super easy. Maja also uses tracking apps and her weather app all the time. “Technology and apps mean that I can prepare for my

commute,” she says. Signe agrees: “Technology is nice! It makes public transport so easy.”

But Charlotte also points to one of the downsides – “it's fantastic when it works, but when it doesn't work, you're really lost.”

Being lost in the city is another side effect to routing apps according to Maria: “If you're always are guided around the city by an app you never get to know your city. You will never have that mental map of your city in your mind and be able to find your way. We have an old-school Krak map of Copenhagen on the wall in our apartment. It's important to me to know my city. My boyfriend can find his way without guidance by the phone.”

It's also a problem that people are pressured into having a smart phone to use different modes: “Technology also means that people have to have a smart phone to use new sharing services like carsharing, bike share or e-scooters.”





TRAVELING IN BERLIN, GERMANY

The focus group interview was carried out via Teams on 05th of February 2021. The group of women was presented by:

Eleni, 28, self-employed; no children; lives together with her partner. She works from home and she does not use public transport daily. Nevertheless, in case of visiting friends or travel within the city on weekends, she prefers to take a tram. There is a tram station in front of her house, so it is easy for her to use that transport mode.

Victoria, 30, has a full-time job, no children and she lives together with her partner. In order to get to the office, she mainly drives. Victoria lives a bit out of a city centre, and there are services like carsharing or bike sharing available. Therefore, she bought a smart car to make it easy to park.

Tatiana, 28, graduated recently, but is working full time now; no children; lives in a shared apartment. Depending on the trip (work or friends visits, or just traveling around the city) she takes the S-Bahn (commuter rail), ride her bicycle or walks. She uses her bicycle as lot because it is quite cheap transport and she has noticed that for short distances the bicycle is much faster than public transport. She has a driving licence, but having a private car is too expensive for her.

Margo, 29, has a full-time job, no children. She lives with her partner. She mainly works from home. From time to time she uses the S-Bahn, or she walks for shorter local trips in her neighbourhood.

Maria, 53, has two adult children and she has a full-time job in Brandenburg. She drives her car to the office. In summertime she often combines the bicycle and the S-Bahn.

Kamila, 24, Student, has a part-time job and lives in a shared apartment. She uses the U-Bahn or buses daily. She also uses carsharing service often. She likes that she doesn't have to think about looking or paying for parking.

Olivia, 28, is in between jobs, and lives alone without children. When working as an architect she used tram and U-Bahn. However, after the COVID 19 Pandemic she switched to riding her bicycle.

Emma, 29, student, has no children and lives alone. She mostly takes a U-Bahn.

Sophia, 31, has a fulltime job, no children and she lives alone. Most of time she uses BVG service, but she also rides her bicycle, and likes to walk.

“It would be great if Berlin could learn from cities like Amsterdam, where there’s a lot of bicycle parking available. It would also be great if the bicycle paths could be separated from cars.”

MARIA

THE BICYCLE IS FAST, BUT BETTER CYCLING INFRASTRUCTURE IS NEEDED

All women agree that the bicycle is a reliable and fast means of transportation in Berlin. Almost all women cycle to work daily. Kamila mentioned cycling has its privileges: she does not need to wait for public transport, and she get fresh air. On the way home, she goes shopping and it saves her a lot of time. But she mentions that there’s not enough bicycle parking spaces at shopping centres and supermarkets. Maria agrees. Berlin needs more bicycle parking and better cycling infrastructure: “It would be great if Berlin could learn from cities like Amsterdam, where there’s a lot of bicycle parking available. It would also be great if the bicycle paths could be separated from cars”. Maria and Juliana also wish for more places to bring the bicycle with them on the regional trains, as well as in buses. And they would like opportunity to book it.

UNRELIABLE PUBLIC TRANSPORT

Maria experience with trams and buses is that they are always late. She identifies the cause of the problem to be that trams and busses share the road space with cars. During peak hours she prefer to take the U-Bahn or the S-Bahn. Emma find the U-Bahn and S-Bahn reliable and she mentions that it has a quite good lighting, which gives her a feeling of security

TRAVELING AT NIGHT FEELS UNSAFE

Some of the women, especially the youngest one, express that they feel unsafe while traveling at night. Olivia explains: “For me it is important to feel comfortable and safe while traveling at night. I always wear flat shoes if I know I will be coming home late. At night I never listen to music when traveling. And I would never drink. I want to feel that I can control

the situation. For years I also had an alarm on my key chain, that I could push if someone would attack me.”

Tatiana agrees. She also feels unsafe traveling at night: “Once I was at Schönhauser Allé U-Bahn station and there were only men. I noticed a woman and I decided to walk closer to her. That made me feel more comfortable.” Maria does not like to take public transport after 10 PM. She says: “I don’t like changing modes too many times at night when I’m traveling alone. I prefer to take a taxi at night.” If Maria drives a car at night, she always tries to find designated parking places for women since they are monitored by cameras and are located close to exits.

CARSHARING AND NEW MOBILITY SERVICE

Carsharing is a popular mode among the women. Almost all participants have used carsharing, and their experience has been quite positive. The women like that there’s always available cars in the city, but find it problematic that carsharing is not available outside Berlin.

None of the women find shared e-scooters attractive and none of them have tried them, not even for fun. Their function is not clear to the women. It’s different with bike sharing according to the women. Sophia uses “Next bike” and she sees the service as well organised. Sophia have also used ridesharing (like “BerlKönig”) several times and sees it as a good alternative to the public transport. It’s not as expensive as taxis, and the cars come almost to your door (usually maximum 3 min. away). And waiting time is no longer than 2 or 3 mins. Sophia finds it very safe and comfortable.



TRAVELING IN DELHI, INDIA

The focus group interview was held on January 26 and included women from age 15 to 60+ to understand the needs, requirements and challenges they face when traveling around Delhi.

Damini, in her 20's, is a college student and mostly uses Metro as the preferred mode of transport.

Reena, in her 20's, works and mostly uses Metro for going to work.

Garima, in her 30's, owns a private car, has one child and lives with her husband. She travels to work using her private car.

Neena and Ramnit, in their 40's, are housewives, have kids, live with their husbands and use cabs/cars to make shopping/social trips.

Parminder, in her 60's, is retired as a teacher, has children, owns a car and lives with her husband and kids.

MORE SPACE, MORE LIGHT, MORE CYCLING INFRASTRUCTURE, MORE SAFETY

The young women mostly use the Metro to go to school and education, whereas taxis are more popular for the middle-aged women and private car and walking are the preferred modes for the older ones. Damini says "I mostly use the metro while travelling as it is convenient, cheap and fastest mode of transport."

The main challenges the women report facing using the metro in Delhi is crowding in the compartments in peak hours as only one metro coach is reserved for women. Also at some metro stations the lifts are not considered safe and there are no travelators available for differently abled people. The women also report that a lack of lighting outside many metro stations makes them feel unsecure and uncomfortable. Reena explains "The subways connecting some of the metro stations are grimy and do not have proper lightning which makes it uncomfortable to travel in metro after it gets dark." The new lines made operational recently have better facilities than the old stations. The focus

group suggested to include an additional female coach in Delhi Metro to accommodate the female travellers in the morning and evening peak.

Most of the women feel uncomfortable in buses as they are very crowded and there's only few reserved seats for women. The women suggested having the back doors of buses reserved for women and more seats reserved for women in the peak hour to encourage more women to use buses in Delhi. Also, having a female driver and video cameras would make them feel secure in the evening when it gets dark. Garima said "Having a female driver will make me feel safe and would make it more attractive to use the bus more often".

A couple of the women also reported issues with the usage of mobility "card" which was launched by Delhi Government under the One Delhi One Ride-scheme. Swiping the card for ticket payments is time consuming and sometimes the card machines don't work properly, and recharging is only available at terminating metro stations.

All the women find taxis nice since there is no hassle of parking and it is faster than metro/bus, but they also recognize that it's expensive and not an option for all. Neena and Ramnit agrees "taxis are very comfortable while making social and shopping trips as we do not have to worry about finding a parking space."

The women also raise their concerns about cycling. They don't feel that cyclists are respected by the car drivers and are often pestered with honking and rash driving. It makes the women feel very unsafe. The women suggests more cycling infrastructure as it would promote cycling on the city roads of Delhi.

Garima loves to cycle but raises her concern: "Cyclists do not have proper tracks here and all the space is taken up by cars which makes it impossible to cycle here. I prefer cycling early morning when the car traffic is less on roads".

Another preferred mode for the younger generation on short trips is paddle rickshaw. Parminder, one of the older women says: "Paddle rickshaws are not good for older generation as we do not find it comfortable. The cushioning is poor and there' so many hard breaks." She prefers electric rickshaws as they are faster than the paddle rickshaw and have a low floor which makes it convenient for older people to board and exit. Shared auto is also considered safe for women as they are cheap and convenient for short distance trips.

Google Maps, Ola, Uber and Shuttle app are the most preferred ones by almost all the age groups. They agree that there is a need to have more apps like Shuttle which provides a door to door drop at a fixed time and is easily traceable through the app. The women find the Shuttle app very convenient to use for going to and from office.

The common challenges reported by women are related to no lightning / faulty lights outside some of the metro stations and connected subways. No availability of erickshaws outside metro stations in the off-peak hours discourage women to use the metro for shopping or social trips. Losing stuff, traffic congestion, awful gesture of men, sudden attacks from bystanders are the common concerns raised by the women in the focus group. Safety and security when in public transport systems and availability of more sustainable modes of transport like e-rickshaws and cycling networks are key requirements identified by the women.

"Having a female driver will make me feel safe and would make it more attractive to use the bus more often."





TRAVELING IN SINGAPORE

The focus group interview was carried out via Teams and Ramboll Singapore Office on 9th February 2021. The group of women was presented by:

Julia is in her 20's and is a single. She works full-time as a professional and uses the bus the most for travelling in Singapore. Her hobbies include badminton and cycling.

Joyce is in her 30's and is married with no children. She works full-time as a professional and uses MRT, Grab and bus the most for travelling in Singapore. Her hobbies include hiking, dragon boating and ocean canoe.

Michelle is in her early 20's and live at home with her parents. She is a full-time student and uses MRT and bus the most for travelling in Singapore. Her hobbies include music and arts and craft.

Celine is in her early 20's and live at home with her parents. She is a full-time student and uses MRT and bus the most for travelling in Singapore. Her hobbies include cycling and reading.

Rachel is in her 20's and live at home with her parents. She works full-time as a professional and uses MRT and bus the most for travelling in Singapore. Her hobbies include shopping, going out with friends and running.

Rebecca is in her late 30's and is married with children. She works full-time as a professional and drives the most for travelling in Singapore. She enjoys spending time with her children.

Angeline is in her 20's and live at home with her parents. She works full-time as a professional and uses MRT the most for travelling in Singapore. Her hobbies include dancing.

PUBLIC TRANSPORT AS THE CHOICE MODE

Most women in the focus group choose the Mass Rapid Transit (MRT) and public buses as their primary mode of transport. Joyce shares, "You can summarise with the 3 Cs, its clean, convenient, and cost effective. Adding to 4 C would be crowded I guess. But in generally I am very happy. You can get to anywhere in Singapore. Singapore is planning to be a '30min to 1 hour city', it has a very efficient system, and is safe."

Rachel shares the same sentiments. She adds, "I use the bus and train also because I do not have a car and it is too expensive. Then, it is also very cheap to take public transport which is very convenient. For example, from my house to town, it is just an MRT stop away and it takes just 1 and a half hour at most to travel from one end to another end of Singapore. I normally travel using bus and train but if I am rushing or need to be at place within a certain time, then I will take Grab (private hire). So, it depends on the situation."

While public transport is the choice mode for this group of women, there are some concerns when using it. Angeline shares that it may pose a challenge to find a seat when taking public transport and travelling with young children or the elderly. The group also shared their personal experiences when interacting with the public transport environment, such as the need to hold down their skirts when using the escalator or when a bus arrives with a big gust of wind at the bus stop, and to be careful of getting stuck in between the ridges on the escalator platform when wearing high heels.

A PLEASANT WALKING EXPERIENCE

Rachel finds walking in Singapore to be a pleasant experience. She explains, "I love walking in Singapore, because I like the weather and I like that it is very accessible. But the only place that I do not like walking is Orchard Road (because) it is very crowded every single time. So, I avoid those kinds of crowded areas but other than that I think walking in Singapore is very accessible. There is a lot of underpasses so instead of waiting for the traffic lights, we can just take the underpass and not waste a few minutes and go over to the other side, so I like that it saves time. Singapore is a green country, so it is naturally very beautiful to walk instead of going underground like the MRT."

Michelle added that in Singapore, commuters can find their way despite its overwhelming urban forest surroundings, due to an abundant provision of wayfinding signs showing where exactly commuters should go when looking for a certain destination.

While Joyce agrees with the group, she shared that walking may become less pleasant when there is no pathway separation between pedestrians and cyclists/scooters, especially for moms with prams or people with mobility issues. Having these different speeds of transport in the same sidewalk might not be so safe for the vulnerable populations.

CYCLING: RECREATIONAL PURPOSES, HOPES AND FEARS

The group of women finds cycling to be more suitable as a recreational activity rather than for commuting purposes. Celine shares, "It is quite a good experience to cycle in Singapore, and usually I cycle in parks or areas where there is a specific path for cyclists instead of normal residential areas, because there is a clear divide (between cyclists and pedestrians) so it is quite safe, and most people follow the rules in those areas. Usually, I cycle for recreational purposes only."

The group agrees that on-road cycling in Singapore, which offers the most direct origin-destination routes, is not safe for women. Celine finds it dangerous and adds, "It is unsafe to cycle during normal commute as a lot of road users do not take note of cyclists." Julia shares similar sentiments and adds, "I usually cycle for exercise. But as a commuting mode, it is not easy for girls to shower in the office, so I do not prefer to cycle to office. But if the facilities are more extensive, I will be willing to do it. Maybe girls find it too cumbersome to shower and make all the preparations after coming to office. Personally, I just cycle for exercise because my office is very far so I cannot really cycle to work."

Besides confronting the humid weather which makes cycling much less attractive as a mode of transport in Singapore as compared to temperate regions, the focus group finds that accessibility and infrastructure are important factors for turning cycling into a viable mode of transport for women. Angeline lamented, "When we first had those dock-less bike sharing systems before their shut-downs in Singapore, I do not have to bring my own bike to complete the first or last mile gap from the MRT stations or bus stops, so it is now less convenient to commute by cycling. When I come to office, I have to think about whether there is a place to park my personal bike."

Julia hopes that more could be done to address cyclist needs and safety in Singapore. "It's quite difficult to cycle when there are a lot of pedestrians on sidewalks, especially at residential areas. Also, these places often have many short turns and blind spots, leading to cyclists abruptly braking and posing danger to other road users."

PRIVATE TRANSPORT AND DRIVING

The focus group of women make sensible economic choices by choosing MRT or bus mainly for travelling and finds it very convenient to switch to a faster travelling mode, such as private hires, when time becomes tight to get to their destination.

For Rebecca who owns a car, driving fits her schedule very well as she needs to juggle between work and family needs. She shares, "I own the car after I had my first child, and I decided that I will need a car to make safer and shorter trips for the needs of my children. Currently, I drive to work and drive back home to

fetch the children. I also make shorter trips to the children's enrichment classes. So, there are a lot of small trips that I do in a day, such as driving the kids around and for work purposes and meetings. It is just convenient because I just have so many things to do and it allows me to take the call."

Rebecca finds car parking in Singapore to be conducive for women. She adds, "the family parking lots provided at children enrichment centres and shopping malls make it easier for me to push my stroller down or shopping trolley near the car. It would be very useful for women who make these trips during the day."

Rebecca also noted how recent advancements in technology facilitated women who drive. "Girls who drive may need to sit on pillows because the maximum height of the seat is not high enough for them to look at the proper distance. Nevertheless, recent new features of the cars do help to bridge such gaps. For example, when reversing the car, we can now simply view the reversing camera and the side lights for blind spots."

TRANSPORT AND PERSONAL SAFETY

The group finds travelling in Singapore to be safe for women. Rebecca shares, "At public residential lifts there is bound to be a CCTV nearby or outside each lift, and everywhere is brightly lit in Singapore. No safety issues for me, though at the same time I personally feel there's no point going out so late at night where there's nobody." Celine adds, "I also feel that it's quite safe here but I think it depends on the neighbourhood you are at as well, as some seem more deserted at night."

When asked about possible crimes committed against women while commuting in Singapore, the group agrees that it depends on how each woman perceives the danger and how she chooses to react to it. Angeline shares, "When confronted and afraid, the victim might be so caught off guard that she doesn't know whether she should react in a way that cause people to take note or to quickly avoid the person to avoid any confrontation. Though such crimes are low in Singapore, women should remain careful when traveling."

Julia adds, "I have heard stories about women having issues taking Grab especially at night, so Grab has done something about it. A lot of women usually take screenshot of their journeys from the Grab app and share with their friends and families so they can keep track. Once they screenshot, Grab app prompted with a notification saying that they identified a screenshot and asked whether they want to "share the information with your friends and family".

MOBILE APPS USED FOR TRAVELLING

The group finds mobile apps used for travelling to come in very handy for women. Julia shares, "Women

have more travel routes and hence these apps might be more useful to them." Angeline adds, "Google Map is very accurate, and it gives the travelling time information." Rachel adds, "Gothere.sg will tell me which route to take, which is the fastest, and which is the cheapest. You can also select different modes."

However, based on public survey, women are less familiar with these mobile apps compared to men. "Maybe because women are familiar with the routes that they take and hence don't rely on these apps as much," says Rachel.

EDUCATION TO BRIDGE GENDER MOBILITY AND EQUALITY GAPS

The focus group believes that education can help to bridge the gender gap in Singapore.

Joyce adds, "For example in Europe, women and men tend to stick less to heteronormative roles. In Scandinavia they have the highest number of female politicians in the world. We even see that embedded in their daily culture, that men and women are equal. The big feminist in me is like that's good but people should also realise that being equal you can't expect people to open doors for you as well. You're an actual equal. What really struck me when I was studying there is the parenting roles in men and women. For example, the dad will drop the kid off in the morning for school and the mom will pick up the kid during dismissal. It's really an equal task. They don't see marriage as a hindrance to their career, whereas I see that more in American and Asian societies. It's also about breaking the glass ceiling, having role models will also encourage more younger girls to believe they can do that one day. So it's both education and what we can do in our generation in order bridge that gender gap."

“ I usually cycle for exercise. But as a commuting mode, it is not easy for girls to shower in the office, so I do not prefer to cycle to the office. But if the facilities are more extensive, I will be willing to do it. Maybe girls find it too cumbersome to shower and make all the preparations after coming to office.

JULIA



CONCLUSIONS

WHAT DID WE FIND?

International research, the expert interviews and the collected existing data in Finland, Norway, Sweden, Denmark, Germany, India, and Singapore show that there are gender differences in mode choice, travel patterns and concerns when traveling.

- Women walk more than men
- Women use public transport more than men
- Women only cycle if the cycling infrastructure is safe
- Men drive more, women are passengers
- Men use new mobility services more than women
- Women trip chain and accompany children and other family members more than men
- Men to a greater extent than women commute individually from A to B
- Women fear harassment and assault more than men and it influences their mobility
- Women to a greater extent than men have consideration related to sustainability

These differences are linked to a number of structural gender inequalities in society – gender power gap, gender work participation gap, gender pay gap, unpaid care work gap and parental leave gap.

Historical, cultural, and commercial definitions of the roles of women and men also influences our reasons for traveling and how we prefer or must travel in our daily lives. But these gender differences – structural as well as cultural – not only influence modal choice and trip purposes for the individual it has also influenced the design of our transport systems. Put very simple – we have prioritized individual commuting in peak hours and to a great extent failed to include other needs in planning and design. These decisions are gendered due to the fact that the vast majority of decisionmakers, the majority of the people working in transport planning and design are men. Add to that little awareness and focus on gender differences in the sector, a huge gender data gap and unconscious bias. Simplified – transport and mobility is basically being planned by men for the average man.

WALKING

According to existing research, the experts we have consulted and the locally collected data women walk more than men. Walking is primarily used for grocery shopping, running household errands (other than gro-

ceries) and going to sport and other everyday leisure activities.

More women than men associate walking with “Active” and more men than women associate walking with “Slow”. In December 2020 when the survey was conducted, women to a greater extent than men also associate walking with being Corona safe.

With regard challenges and concerns, women to a greater extent than men point to traveling with groceries and bags and concern for personal safety (harassment, assault) as a challenge for walking.

Fear of harassment and assault when walking is one of the gender differences identified both in international research, by the local experts and by the women in our focus groups. When walking at night women in all the geographies share how they have different strategies to deal with their fear – from staying away from certain areas, not staying out too late, choosing shoes they can run in, to carrying their keys in between their fingers in their pocket as a potential weapon.

CYCLING

About two thirds of the people surveyed have access to a functional bicycle. But the numbers mask big local differences. According to our survey, Singapore has the lowest bike ownership with 39% for women and 49% for men, whereas Denmark has the highest with 87% for women and 83% for men. Globally when asked to rate themselves in terms of experience, men significantly more than women rate themselves higher.

The number of people rating themselves as very experienced cyclists varies significantly across the seven capitals – from 10% for women and 26% of men in Oslo to 60% of women and 59% of men in Helsinki.

Cycling is primarily used for running household errands (other than groceries), going to sport and other everyday leisure activities and visiting friends and family locally.

As for associations to cycling, the global survey shows that more women than men associate cycling with being sustainable. In both Delhi and Singapore “Fun” is also top rated in relation to cycling. In Singapore it’s clear from the focus group interviews that cycling for women is a leisure and exercise activity whereas it’s for transportation in the Nordics.

The main challenges and concern identified in relation to cycling relates to “traffic safety”, which was identified by more women than men as a challenge. This sense of ‘not feeling safe’ was identified in the international research, by the local experts and by the women in our focus groups.

In Copenhagen where cycling is traffic safe, women in the focus group interviews think of cycling as their “safe place” in relation to personal safety – they feel that they can out cycle any man on foot who would want to harm them. In both Oslo and Copenhagen, women in the focus group interviews identify fast “lycra guys” as a challenge as they cycle very fast. In all capitals except Copenhagen, the lack of safe cycling infrastructure is identified as a barrier for cycling for transportation.

In Norway a new study just showed a significant increase in women using e-bikes and it means that women are cycling more and longer distances. The study also shows that women who take up cycling often used to use public transport, whereas men who takes up cycling often used to drive.⁵⁵

PUBLIC TRANSPORT

The international research as well as the local data collected, show that women use public transport more than men. Across the different modes of public transport that we surveyed – bus, local train, tram/light rail and metro – the primary trip purposes were leisure trips in the city during the day – shopping, café, museums etc., visiting friends and family locally, leisure trips in the evening – going out to dinner, drink, theatre, cinema in the evening etc.

As for the challenges and concerns Corona safety, travel time and traveling with groceries and bags are identified globally as challenges and concerns related to public transport.

The survey not surprisingly given its timing, shows that Corona is top of mind when it comes to public transport. But what it also shows is that women significantly more than men identify and associate Corona with public transport. Since women use public transport more than men, this creates a real risk of growing inequalities as places open up and movement levels return in our cities.

How Corona will influence our travel and commuting habits only time will tell, but for public transport it is

important to note that even though many people can and will be able to work from home to a greater extent than before Corona, many people cannot work from home. People in the service, hospitality, health and care sector cannot work from home and will still need access to public transport.

Women to a much greater extent than men identify personal safety and fear of harassment and assault as a concern in relation to public transport. In the focus group interviews, women from across geographies also expressed concerns and fears around waiting at bus stops and train stations. They said that fear of harassment and assault influence their travel behaviour – both in relation to the choice of mode and the time of day they traveled. Concerns were raised about both too few and too many people in these places, and also that the design of public space, stops, stations and platforms and whether there are staff available influences how secure they felt.⁵⁶ It is clear that the inclusion of considerations around women’s fear of harassment and assault and the need to create public spaces and facilities where women feel secure when traveling alone is important. These considerations should be factored in and analysed more when developing new public transport facilities and improving the existing ones. When testing and developing autonomous public transport it’s important to factor in how public transport personnel can give women a sense of security.

CARS

Both the international research, the experts we have interviewed, and our locally collected data show that men drive more than women. Men also to a greater extent than women hold a driver’s license and have access to a car. Women are more likely to be a passenger in a car than men.

In our survey the use of a private car is primarily for leisure, weekend use, holiday trips out of the city, visiting friends and family locally, running household errands (other than groceries).

The survey shows that women to a greater extent than men think of the car as safe – both in relation to Corona and personal safety.

Women and men identify parking, price and CO² as challenges and concerns related to cars, but more women than men raised concerns that the car is not climate friendly.

This also comes through in some of the focus groups where several women expressed that they did not feel comfortable driving in the city, or that their husband drive when they are both in the car. Several felt that the car takes up too much space in the city and is not sustainable.

NEW MOBILITY SERVICES AND DIGITALIZATION

According to existing research, the experts we have consulted and the locally collected data men use new shared mobility services like bike sharing, e-scooters, carsharing and ridesharing more than women.

In relation to e-scooters our survey shows that women and men both identify e-scooters as traffic unsafe. "Traffic unsafe" is the most associated word for both men and women across all geographies and the primary challenge and concern for both genders. Women to a greater extent than men identify it as a challenge and concern.

For carsharing, our survey shows that women and men identify carsharing as sustainable, but women to a greater extent than men. Price is also identified as a primary challenge and concern globally.

In relation to ridesharing, Corona and sustainability are the primary associations. With regards to Corona the majority of women identified this as a concern. Significantly more women than men also identify personal safety as a challenge and concern related to ridesharing. This was also addressed in the focus group interviews, where the discussions focused on what was seen as more safe – private ridesharing or taxis – and how different providers and apps have incorporated women's concern for personal safety into their solution (sharing location, rating of driver etc).

DIGITALISATION AND TECHNOLOGY

According to our survey men and women use technology equally much – with the majority of women using it for public transport and men for new mobility solutions and route planning services related to car driving.

An argument often heard in relation to this is that women adapt slower to technology than men. But this does not shine through in the results of either the survey or the focus groups. The women demonstrated that they loved how easy apps and travel planning maps and services make traveling and how it can help them "optimize" their time. They also identify how apps can help make new mobility services like ridesharing feel more personally secure. That women use shared services like carsharing, ride sharing and e-scooters less than men does not, therefore, seem to be because the services are digital but rather because the services does not fit their needs. For instance, when they are required to trip chain with groceries and bags, accompanying children or other family members, or where they have concerns related to either traffic safety or

personal security. But it also seems that there is a significant potential for designing new services that cater for these needs. But as highlighted by several of the experts interviewed for this paper it's not only about designing more inclusive solutions, it also about where these services are made available and how.

SUSTAINABILITY

Women to a greater extent than men travel by sustainable modes and consider sustainability in relation to their modal choices. Creating a more sustainable, CO²-neutral, and green transport sector means making sure it is attractive for women to continue to be able to travel the way they do and making it more attractive for more men to change to more sustainable modes.

USING GENDER AS A LENS TO CREATE BETTER MOBILITY FOR ALL

That the average human in policy making, medical research, technology, design etc. is an average man is a problem many women face without knowing it every day – the voice recognition system does not react to the female tone of voice, uniforms and work clothes does not fit properly etc. to more serious consequences.

One example is car design. On average women weigh less and are shorter than men. That means that women often have to pull the seat forward to reach the pedals to drive a car. That means that most women end up being "out of position" drivers. It means women are of greater risk of internal injury because the cars safety features are designed for the 50th-percentile male and tested with the most commonly used crash test dummy, which is 1.77m tall and weighs 76kg. The dummy is significantly taller and heavier than an average woman, has male muscle-mass proportions and a male spinal column, and no female features like breasts and female pelvis. It all means that a woman involved in a car crash is 47% more likely to be seriously injured, and 71% more likely to be moderately injured, and 17% more likely to die.⁵⁷

Women make up half the population. Women are not niche, a deviation from normal or a minority. Not only is it a democratic problem it also has consequences for women's health, safety, and everyday life and mobility. By including gender, collecting, and analysing gender segregated data, doing impact assessment analysis with focus on gender, carry out user-needs and preference analysis and involve both men and women in planning and design of solutions, we can not only create better mobility for women, but for everybody who does not fit the average male norm.⁵⁸

By prioritizing safe sidewalks, safe segregated cycling infrastructure, reducing speed and access for cars to certain streets or areas, prioritizing public transport and making people feel safe both at stops, stations and inside the vehicles, and designing new, flexible mobility solutions that enables trip chaining, traveling



with groceries and bags while accompanying children also benefit all the men having similar needs and travel patterns. We generally need to have more focus on different user-groups, user-needs, service design and the whole journey. We need to better understand who is traveling and why, when, where and how to be able to design inclusive solutions that fit different needs – like making sure you can get a child's seat for a carsharing cars, that bike sharing is available in different locations, that payment for different services does not exclude people and that the services are affordable.

SAFETY AND SECURITY

Securing and providing safety and security in transport and mobility is paramount – at this particular moment in time (2021) Corona is a concern that influences transport and mobility. Whether this will also be a factor that we will need to address from time to time going forward only time will tell. But as we return to a new normal it's important to acknowledge that Corona is seen as a big concern and challenge in relation to public transport – especially by women, who are also the majority user group. Measures that addresses this concern should be implemented as part of the efforts to get the public transport users back post Corona.

Fear of harassment and assault when walking, cycling and using public transport on the other hand influences women's lives every day. We need to address safety and security to a much greater extent that we have so far and design streets, areas and public transport

hubs where everybody – young and old, women and men, non-binary, people of different colour, religion or sexuality – feel safe.

We have not included traffic accident data in this study. But data show that the gender differences in transport and mobility also shows in the accident data. In Sweden for instance, where traffic safety is highly prioritized through Vision zero, data shows:

- That 90% of all accidents in road traffic in Sweden are caused by a man⁵⁹
- That accidents caused by male car drivers are more severe than accidents caused by female car drivers⁶⁰
- That if men behaved like women in traffic the number of deaths in Europe would decrease by 20%.⁶¹
- That pedestrians and cyclists are mostly injured in single accidents. 60% of all severe injured pedestrians in single accidents in Stockholm county are women.⁶²
- Women are more positive to lower speed limits and traffic rules in general.⁶³

We simply need to prioritize traffic safety to a much higher extent than we have before.

RECOMMENDATIONS

Based on the research we have done in relation to this report we put forward the following recommendations:

POLICY AND STRATEGIES

- Include gender mainstreaming as a strategic approach for assessing the implications of any planned action, legislation, policy or programmes for both women and men in all areas and at all levels.
- Identify and include a broad spectrum of stakeholders when developing policies and strategies and make sure different needs are represented
- Develop an EDI policy (Equality, Diversity, and Inclusion) and make sure it's reflected in all practices and processes e.g. procurement, planning and design

PLANNING AND DESIGN

- Study, analyse and include user-needs, challenges and concerns in planning and service-design. Only by understanding the needs of the citizens can we create truly equal transport systems and mobility services.
- Provide the right services, at the right time at the right place for the right users

SAFETY AND SECURITY

- Don't victimize women, but include safety and security in the design of the solutions – not as an add-on to cater for women as a group with special needs, but as an integral part of the project or solution
- Prioritize, provide, and maintain basic infrastructure for walking and cycling and secure public transport

DATA COLLECTION AND ANALYSIS

- Include collection and analysis of gender segregated data in planning and design.
- Review existing data collection methodologies and assess if they properly identify and include gender differences in travel patterns, mode choices and trip purposes
- Analyse the collected data with a gendered lens and incorporate the findings in projects and solutions
- Complement quantitative methods of data collection with qualitative methods and recognize the value of qualitative data
- Include gender and social impact assessments (SIA) as part of the planning process just like other studies of traffic or environmental effects
- Include gender impacts in cost-benefit analysis
- Carry out feasibility studies before and post-feasibility studies after projects to study who the users are, how they are using the facilities and why other groups are not users and how to improve.
- Make sure data collection is transparent and fulfilling gaps

DIVERSITY AND INCLUSION

- Study why women do not find the transport and engineering sector attractive.
- Implement specific and targeted measures of change to accommodate and include women on all levels in the transport sector. A better gender balance on all levels of the transport sector is a prerequisite for a more equal, safe and inclusive transport and mobility.
- Include gender differences, data gaps and unconscious bias in the curriculum for engineering and transport planner students
- Be conscious about the gender balance when putting together transport project teams, groups, committees, advisory boards and the like
- Keep an open mind, listen, learn, and change procedures and practices when needed



NOTES

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