



Turning the wheels – Sex and gender in research on mobility

*Writing gender and diversity into the smart mobility agenda :
The Transport innovation Gender Observatory (TInnGO)*

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Andree has been PI on 3 successful EU projects totalling around 10M and will be scientific lead in forthcoming H2020 , GILL (Gender Innovation Living Lab)

As well as designing the proposals and co-ordinating work, her area of specialisation is macro ergonomics, inclusivity, gender and codesign following Living lab principles.

Transport projects from 2012

- [FP7 METPEX](#): measurement of the quality of the passenger experience
 - Key issues: multimodality, whole journey, inclusivity, KPIs based on passenger needs, real time data
- [Gender transport poverty in Karachi](#): PhD supervision, Sana Iqbal
- [WEMOBILE](#): gender transport poverty in Malaysia and Pakistan
- [H2020 CIVITAS SUITS](#): Supporting the implementation of sustainable transport measures in small to medium local authorities
 - Key issues: trust, organisational change and implementation, social impact assessment, SUMPs
- [H2020 TInnGO](#): Transport Innovation Gender Observatory
 - Key issues: systemic lack of women in TBE, recognition of their needs, intersectionality, GaDaPs, living labs, employment, universal design, lived experience

Introduction



Gendered Innovations

in Science,
Health & Medicine,
Engineering, and
Environment

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What is **Gendered Innovations**?

SEX & GENDER ANALYSIS

General Methods

Specific Methods

Terms

Checklists

CASE STUDIES

Science

Health & Medicine

Engineering

Environment

INTERSECTIONAL DESIGN

POLICY RECOMMENDATIONS

VIDEOS

Facebook



How to cite website



ENGINEERING

Sex and Gender Methods for Design

Gendered Innovations



SCIENCE

HEALTH & MEDICINE

ENGINEERING

ENVIRONMENT

FEATURED CASE STUDIES



Marine Science:
Analyzing Sex



Chronic Pain:
Analyzing How Sex and
Gender Interact



Facial Recognition:
Analyzing Gender and
Intersectionality in
Machine Learning

Why Gendered Innovations?

Gendered Innovations
employs methods of
sex, gender, and
intersectional
analysis to create
new knowledge.

Gender equality as a cross cutting issue in H2020

Three main objectives underpin the European Commission's strategy:

1. **Fostering equal opportunities and gender balance in projects teams**, in order to close the gaps in the participation of women.
2. **Ensuring gender balance in decision-making**, in order to reach the target of 40% of the underrepresented sex in panels and groups and of 50% in advisory groups.
3. **Integrating the gender dimension in research and innovation (R&I) content**, taking into account as relevant biological characteristics as well as social and cultural features of both women and men in research (sex and gender analysis).

Is gender seen as being a big issue in transport?

No!! With some regional variations

- TlnnGO spent longer than planned convincing some operators of the need to consider this
- Slow progress on employment
 - Transport industry one of the most hostile to women
- Some progress on women's mobility
 - Hard to reach groups still seen as hard to reach
- Recognition of the need for transport and mobility proposals to address gender issues



Sex, Gender and Intersectionality



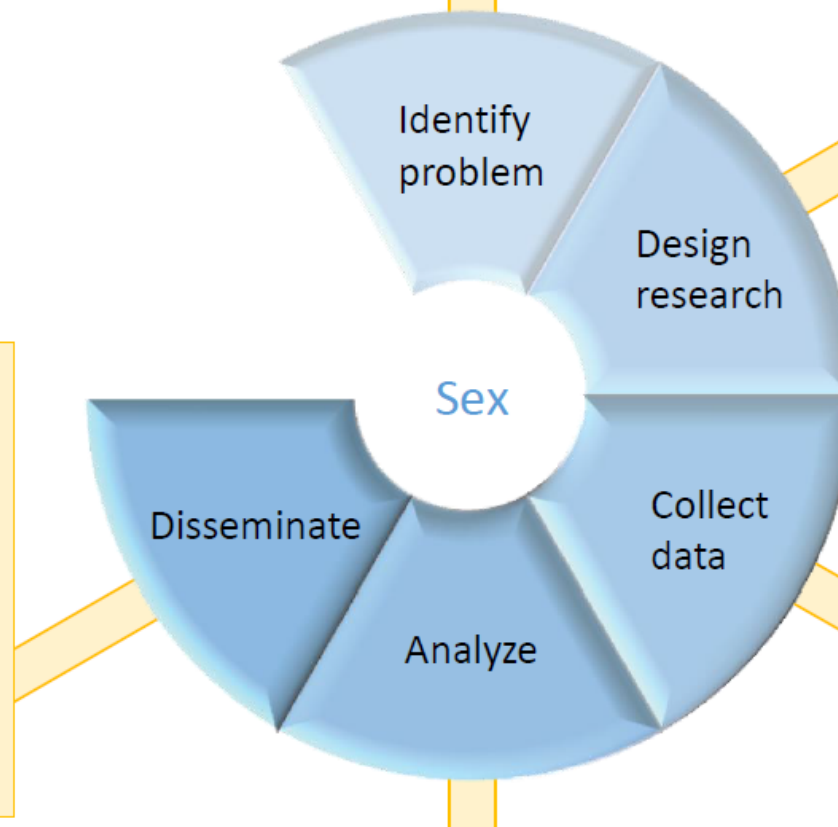
The importance of sex and gender analysis in research and innovation

Ineke Klinge, Rapporteur H2020 Gendered Innovations 2

ANALYZING SEX

enhances all phases of research

- Sex may play a role in all studies involving human or non-human animals
- Perform a literature review to identify how sex may be of relevance to your study (Moerman et al., 2009).
- Consider whether sex is a covariate, confounder, or explanatory variable
- Consider what sex-related characteristics are of relevance to your study (e.g. genetic, physiological, hormonal, anthropometric, biomechanical, injury thresholds, levels of pain tolerance, etc.) (Tannenbaum et al., 2019)
- Consider how sex-related factors interact with gender, ethnicity, age, socioeconomic status, lifestyle, etc.
- Consider what opportunities have been missed in the past as a result of failing to analyze sex



- Report the sex of your subjects, even in single-sex studies
- Report the sex distribution of the cells, animals, or human subjects
- Report how information on sex was obtained
- Disaggregate reported results by sex
- Ensure that sex variations are properly visualized in the tables, figures, and conclusions
- Avoid overemphasising sex differences. Are observed sex differences of practical significance? (Maney et al., 2016; Ribbon et al., 2014)
- Report all results: positive, negative, and inconclusive
- Consider following the SAGER publication guidelines (Heidari et al., 2016).

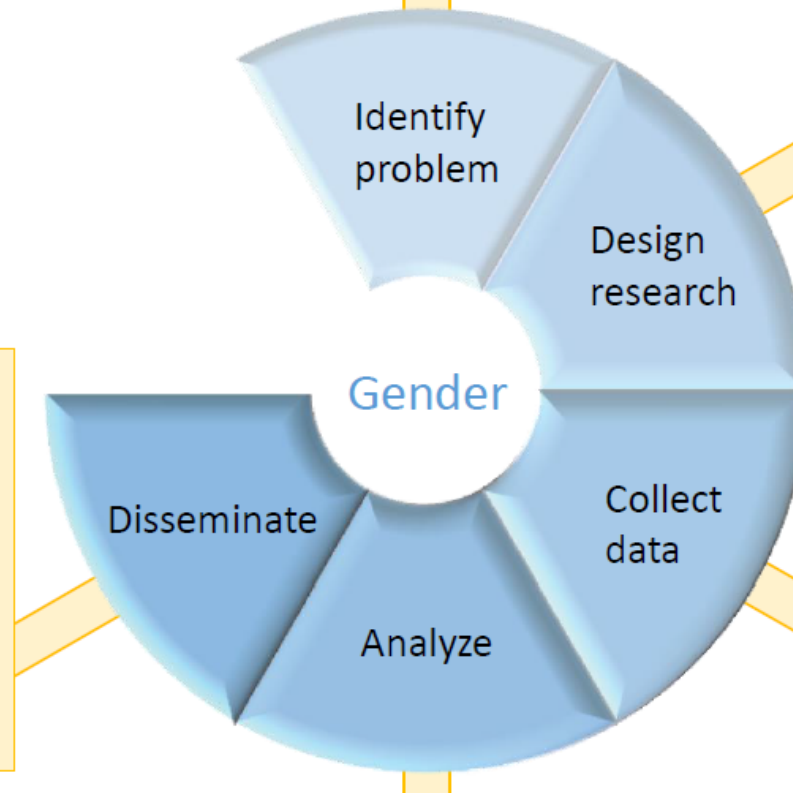
- Examine overlaps between and variations within groups of different sexes (see, e.g., Maney et al., 2016)
- Consider the source of any sex difference observed, including the role of environmental, genetic, hormonal, or anthropometric factors
- When examining sex differences, adjust for possible intersecting and confounding factors (e.g. age). Overlooking confounding factors may result in overemphasising sex differences
- In longitudinal studies, examine how observed sex variations evolve over time
- Analyze how observed sex differences may vary by factors such as age, ethnicity, socioeconomic status

- Sex may serve as a direct explanatory factor or act as a potential modulator for associations between other factors; drawing a causal diagram helps make underlying assumptions explicit (see e.g. Buckley et al. 2017)
- In experimental studies, consider factorial designs to reduce the sample size required for sex-based comparisons (Buch et al. 2017; Miller et al. 2019)
- Consider how sex should be conceptualised in data collection; does your research concern physiological, hormonal, anthropometric, or biomechanical aspects? (Tannenbaum et al., 2019)
- In longitudinal research, consider how reproductive history may influence the cohort under investigation; will, e.g., data acquisition be impacted if females get pregnant during the study?

- Consider how to collect information on intersex subjects and hermaphrodite animals
- Include adequate numbers of females and males and, where relevant, intersex or hermaphrodites of different configurations in research samples
- Record information on factors that intersect with sex (e.g. age, life-style, socioeconomic status)
- In experiments, consider how the sex of the researcher may impact research outcomes (Chapman et al. 2018)
- In survey research, questions about gender should not be used as a proxy for birth sex
- In product and systems design, data collection should pay careful attention to anthropometric, biomechanical, and physiological factors that vary by sex (Tannenbaum et al., 2019; Jingwen et al. 2012)

ANALYZING GENDER

enhances all phases of research



- Gender may play a role in all studies involving humans (Tannenbaum et al., 2019).
- Perform literature searches with adequate terms for "gender" and "sex" (Oertelt-Prigione et al., 2010).
- Consider the project's relevance in relation to different [gender identities, norms, and relations](#).
- Consider [relevant factors intersecting with gender](#) (age, socio-economic status, ethnicity, etc.).
- Reflect upon your own gender assumptions in relation to the project.
- Consider what opportunities may be missed by failing to analyse gender and intersecting factors

- Consider how to [involve diverse groups of research subjects/end-users](#) in the project life-cycle to ensure inclusive solutions.
- Consider which methods (qualitative and quantitative) are suited for examining the gender dimensions of relevance to your project.
- Use appropriate sample sizes for gender comparison (Sell, 2017).
- When [measuring gender in survey research](#), ensure that your instrument has been psychometrically validated in the target population (Steenkamp & Baumgartner, 1998).
- Inspect your [analytical concepts, categories, and theoretical models](#) for misguided or stereotypical assumptions.
- Consider the risk of stereotyping or excluding relevant groups.

- Report sample [characteristics by gender, sex, and relevant intersecting variables](#).
- Report how information on gender identity was obtained.
- Disaggregate reported results by sex and gender.
- Report all results: positive, negative, and inconclusive.
- Ensure that gender variations are properly reported in tables, figures, and conclusions.
- Avoid overemphasizing gender differences. Are the observed variations of practical significance? (Nelson, 2017).
- Consider following the SAGER publication guidelines (Heidari et al., 2016).

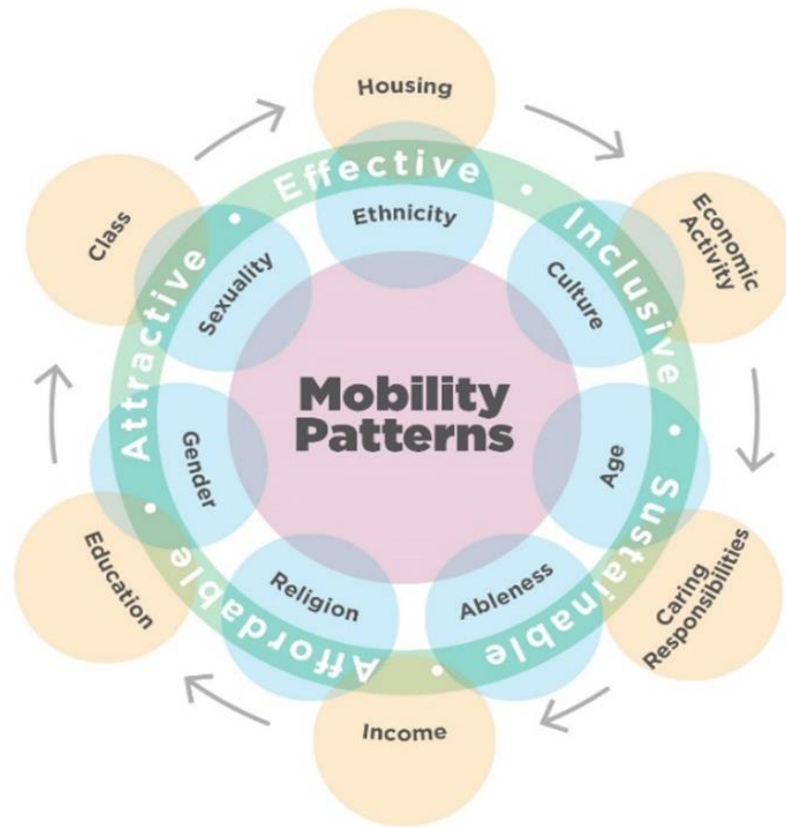
- Collect data across gender characteristics (e.g. gender norms, gender identities, and gender relations) and intersecting factors.
- In survey research, use [the two-step approach](#) to collect data on gender identity and birth sex (Deutsch et al 2013). Ensure that all participants feel safe disclosing their gender identity.
- Ensure equal access for women, men and gender-diverse individuals. Is oversampling needed to ensure a sufficient number of gender-diverse participants? (Vaughan, 2017).
- Consider how gender relations between researchers and participants may impact data collection (Chapman et al. 2018).

- Conduct analyses of relevant factors related to [gender norms, gender identity, and gender relations](#) (Nielsen et al., forthcoming).
- When [using existing data](#), consider the cultural or institutional contexts in which the data were generated for potential gender biases.
- Examine similarities *between* groups (i.e. men, women, and gender-diverse individuals) and variations *within* groups (Hyde, 2005).
- Examine how observed differences between women, men and gender-diverse individuals relate to gender norms and relations.
- Examine how observed gender differences [vary by factors such as age, ethnicity, socioeconomic status](#).
- In longitudinal studies, examine how observed gender variations evolve over time.
- Consider how gender norms, identities and relations intersect to shape people's experiences, opportunities and practices.

Intersectionality

- Describe overlapping categories such as gender, sex, ethnicity, age, socio economic status, sexual orientation and geographic location that combine to inform individuals identities and behaviour
- Issues
 - Oversimplification of use of personas.
 - Quantitative data collection – sampling
 - Privacy, ethics and disclosure
 - Build up trust

TInnGO Intersectional Mobility Indicators (TIMI)



- The interactive wheel can be used to consider how different sets of factors interact to create barriers to mobility and result in transport poverty
- These factors need to be addressed through the 5 TInnGO indicators.

Bridgman et al, 2021

Gender Transport Poverty



Gender transport poverty in Pakistan (after Lucas, 2016)

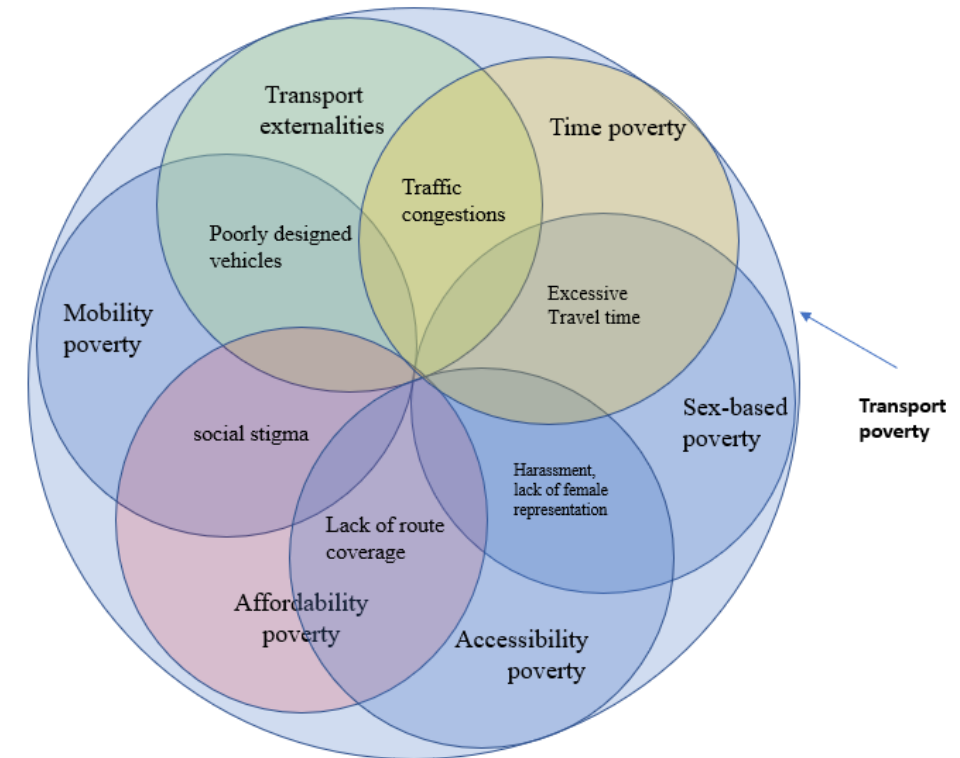
Categories/ themes	Definition	Description
Mobility Poverty	Non-availability or poor design of motorised transport that is appropriate to the needs of an individual	Overcrowding, lack of seating allocation, poor in-vehicle ergonomics, lack of drivers' accountability, lack of maintenance/ cleanliness, rudimentary bus stops, lack of timetabling information, poor infrastructure
Accessibility Poverty	The inability of the available transport to reach destinations that can accommodate the activity patterns of an individual to have a fair quality of life	Lack of routes coverage, ad hoc changing of routes
Exposure to unsafe Transport Externalities	The travel conditions offered by the transport puts an individual into unsafe, risky and unhealthy circumstances	Crime, pollution, Ineffective enforcement of traffic regulations
Time poverty	Not having enough time or having to travel for such a long duration that it causes social exclusion and personal exhaustion	Excessive travel time, culturally preferred gendered division of domestic labour, Time conscious decision-making
Transport Affordability	Not being able to afford or justify the expenditure on transport	Overcharging, unwilling dependence on expensive modes of transport, the social stigma attached to public transport
Sex-based Poverty	Not being able to make decisions about one's own mobility due to the complex asymmetrical power relations between men and women	Cultural restrictions towards the use of certain modes of transport, prior victimisation or harassment, lack of agency, the late hour and non-work journeys being considered purposeless, lack of female representation

Interrelationship between different forms and levels of transport poverty

Mapping of the sources of transport poverty enables

- implications to be made explicit
- stakeholders/actors identified
- series of solutions to be proposed

- Not a concept which is widely used in EU,
- closely linked to mobility justice



For more information

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Websites:

www.tinngo.eu

<https://transportgenderobservatory.eu>

<https://tinngo.sboing.net/>

Transport Innovation Gender Observatory (TInnGO) 2018 – 2021

H2020-MG-2018-2019-2020/H2020-MG-
2018-SingleStage-INEA



By 30 November 2021 the Observatory had

- received 25,714 sessions,
- 65 445 page views, and 39 545 unique page views, exceeding the objective of 50 visits by M15 and 200 by M24.
- partners published 262 blog posts on the Observatory website

TInnGO also

- ran 3 conferences and 26 workshops, with the attendance of 828 stakeholders,
- participated as speakers in 59 external events (35 conferences, 11 workshops, 1 pitch event and 12 other events).

Objective

To provide a one stop Observatory for quadruple helix agents involved in SM which includes a learning centre, open mobility data platform, data repository, case studies



www.tinngo.eu

<https://transportgenderobservatory.eu>

<https://tinngo.sboing.net/>

TinnGO in a nutshell, a holistic approach to creating a paradigm shift



Why a holistic approach?

- Smart mobility has shifted emphasis away from movement and vehicles to accessibility; **transport as an enabler**
- Technology led approaches **lack wider vision of inclusion**
- Smart Mobility **replicating previous shortcomings** with respect to lack of gender and diversity
- **Existing GM tools** have not been widely adopted despite proven benefits
- Smart city agendas offer opportunity to create **more equitable societies**, offering higher quality of life. SM is part of this
- **Lack of gender and diversity** in education and employment

TInnGO's paradigm shift included

- Recommendations for HEIs to increase impact of women in research
- Provision of tools, methods and training material to support increase of gender and diversity across TBE (GaDAP and EAASI Indicators)
- Demonstration of the value added of design thinking for future projects (design provocations and systems design thinking)
- Gender analysis of media addressing smart mobility
- Creation of a shared sex disaggregated, open data repository and new data collection methods
- Use of living lab methods to engage wider groups in discussions about transport (capacity building)



Key concept

To create the means of effecting long term and sustainable change in transport, in particular the smart mobility sector, before its too late!

$$\begin{array}{ccc} \text{Smart transport} & & \text{Gender} \\ + & = & \text{Smart} \\ \text{Gender and diversity} & & \text{Mobility} \\ \text{mainstreaming} & & \end{array}$$

Gender smart mobility

=

Smart transport

+

Gender and diversity
mainstreaming

Intersectional analysis

→

The project goes beyond the traditional women's perspective and focuses on gender considering an **intersectional perspective**.

→

It implies systematic and critical focus on **asymmetries** or **axes of power** based on gender, sexuality, age, class, ethnicity, etc.

Gender and Diversity
Action Plans – GaDAP

=

A Gender Action Plan (**GAP**) is an **integrated planning tool to include gender equality** within a project, organisation or community.

+

TInnGO is widening the concept applying **intersectional approach to build gender and diversity action plans – GaDAP along with stakeholders**.

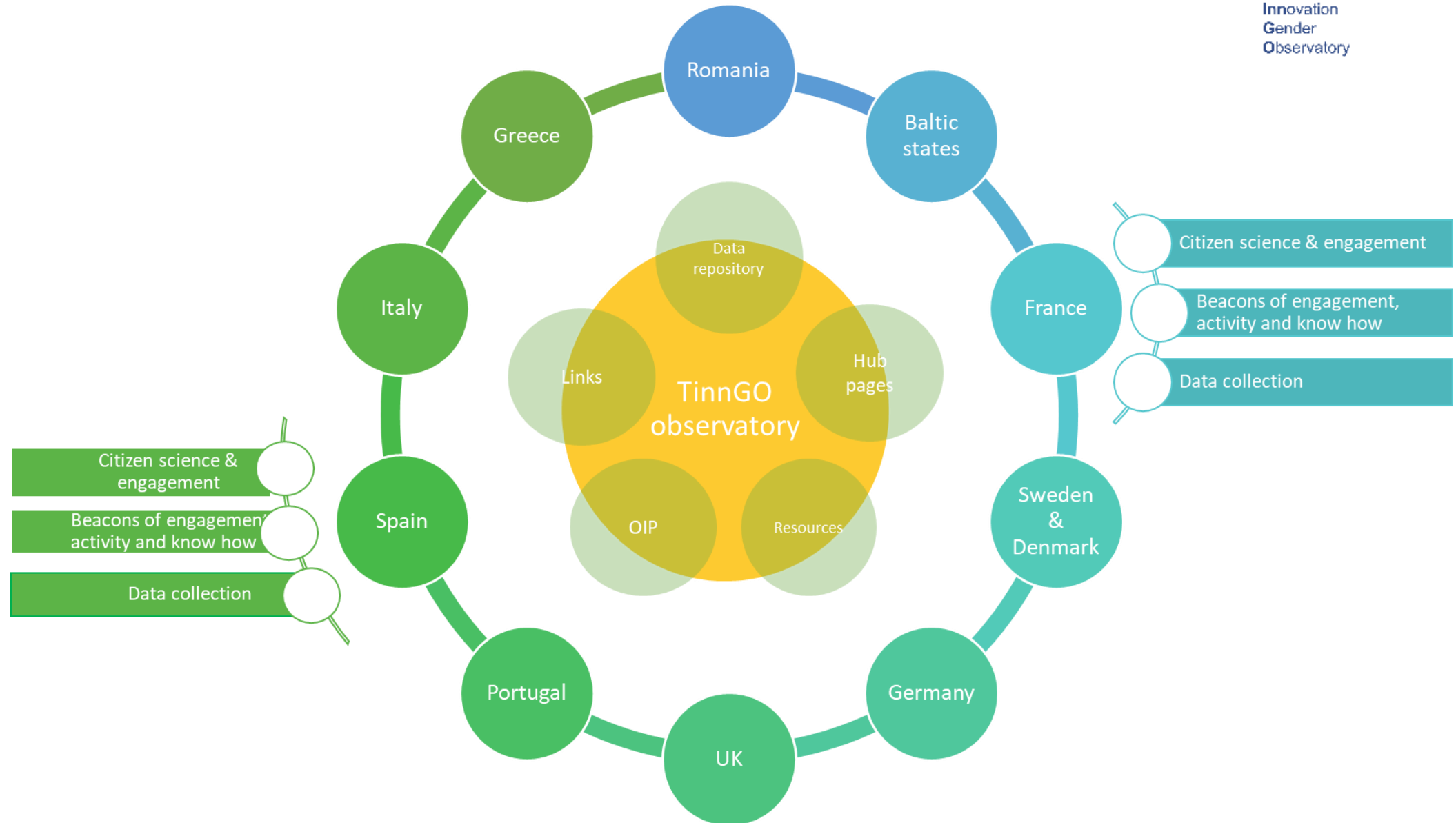
Christensen et al, 2022

Objective

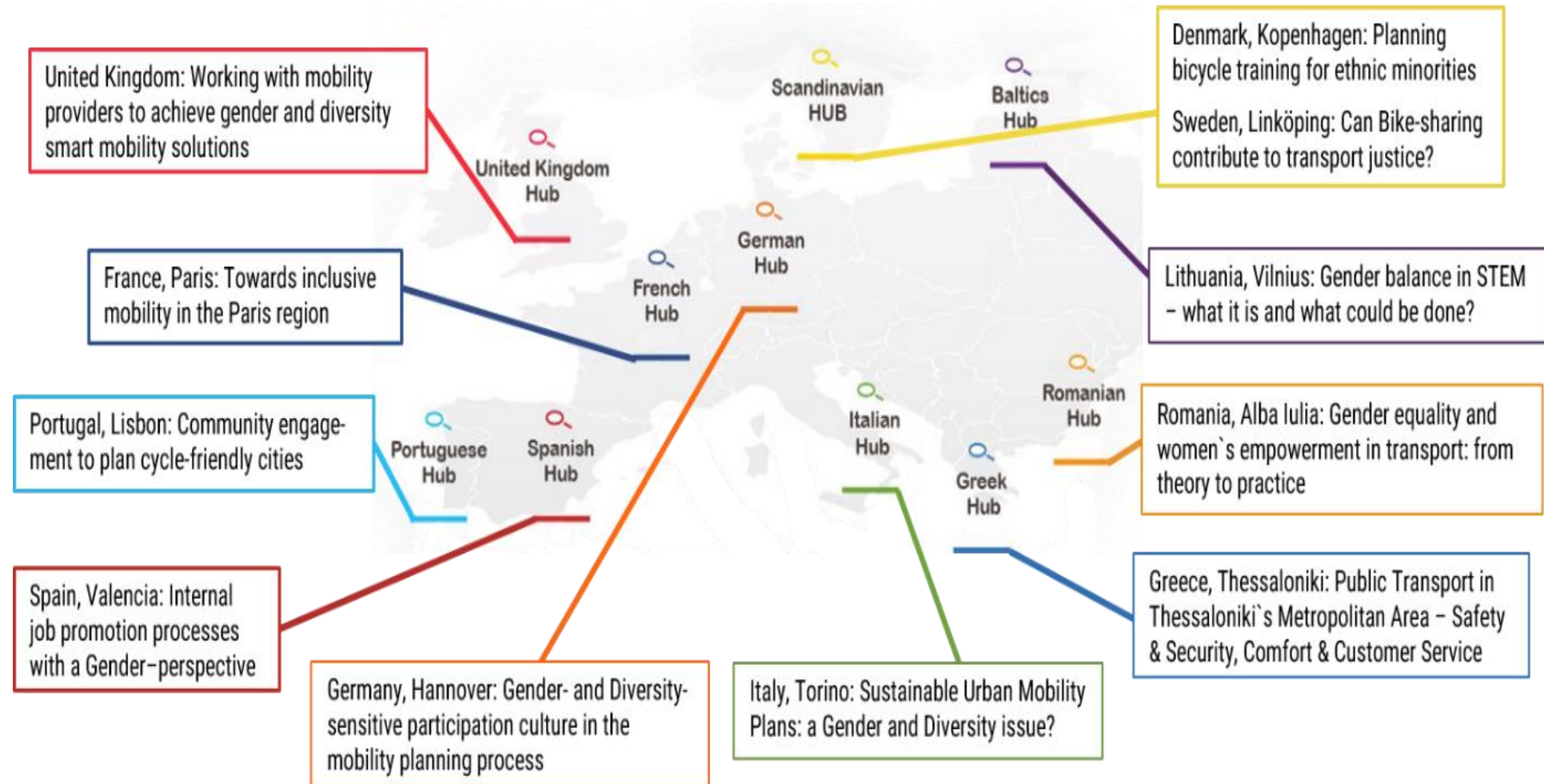
To set up 10 TInnGO hubs, which would act as semi autonomous living labs



Organisational structure + methods



Hubs and their specialisms




Overview of contributions of TInnGO hubs

Contribution	Domain	Activities
Mobility data survey	Transport	Collection of passenger data through surveys (nearly 4500 responses)
Dissemination	Multisector	10 policy briefs (one from each hub) for targeted policy makers; created social media channels, you tube videos, webinars
Practice based research/co-creation	Multisector	Iterative development of Gender and Diversity Action Plans and implementation with transport stakeholders
Engagement	Transport stakeholders	Conferences, workshops, motivational portraits of key women in transport in each country; ran virtual workshops in native languages around key issues,
Data sharing	EU research community	Uploaded national and new data and data on an open shared data repository
Citizen engagement	Mobility	Walking interviews, citizen science; interviews, focus groups; workshops
Training	Gender diversity	Contributed case studies and material to train modules
Co-design	Smart mobility	Provided design briefs for students based on local issues, and feedback on the design provocations
Maintained online presence	Smart mobility and gender	Each hub maintained a web page on their activities and national initiatives, disseminated good practice and case studies though the platform and social media channels. This included Mobility Data and Statistics, Research Publications, Media Reports, Project Reports, Good Practice, Local Practice, Case Studies, Guidelines, Policies etc.) depending on the hub and the nature of their interest on Gender Smart Mobility (e.g., Smart Biking, Safety and Security, Education and Employment in Public Transport, Participation Culture)

- Example of work conducted by UK hub

Each hub acted as a living working independently and in collaboration with other hubs

all hubs were significantly challenged by covid

UK hub	Partners: Coventry Living lab, University of Northampton, WMCA, Coventry University		Location: The Midlands
<div></div>			
Focus	<ul style="list-style-type: none">• further understanding of the specific transport requirements and needs of different groups of women, such as older women and women from diverse cultural and ethnic backgrounds		
Activities	<ul style="list-style-type: none">• understanding and prioritizing the addressing of women’s transport needs in rural and urban areas for traditionally excluded groups, older women and those from diverse cultural and ethnic backgrounds• Gender impact assessments and discourses around smart mobility• vehicle design and future transport scenarios• Gender Bias in Stem relating to Smart Mobility		
Approaches	GaDAP, Smart Indicators, Design provocation OIP, wworkshops with and for stakeholders, data analysis, intersectional analysis.co-creation, policy brief, citizen science	Quadruple helix actors	Transport company, City Council, Rural transport providers, voluntary organizations, citizens, university
Legacy	<ul style="list-style-type: none">▪ mobility providers to achieve gender and diversity smart mobility solutions”▪ Enhanced recruitment practices – with WMCA recruiting 5 young women onto traineeships▪ TfWM to follow up and evaluate return to work scheme after maternity leave through regular staff surveys and skills audits▪ Survey results for Transport provider Zeelo assess for future impact▪ Facilitate and encourage co-design activates arranged around users` experience (user centred design), particularly with excluded or marginalized groups.▪ Educational impact on 32 Design Students engaged in Empathy Module and further intern students involved in weekly Design Provocation meetings▪ Citizen course▪ Design tools		

Baltic hub news and events

[BALTIC](#)[NATIONAL HUBS](#)[TINNGO NEWS](#)

Baltic hub prepares "Guidelines for education institutions"

The Baltic Hub conducted a survey of Bal...

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Estonian mobility company to contribute to accessible mobility

Estonian mobility enterprise Bolt is ded...

[CONTINUE →](#)[BALTIC](#)[NATIONAL HUBS](#)[RELATED NEWS](#)

Mobility provider introduces inclusive mobility services with "Socialinis taksi" assistance

The most popular shared mobility and shu...

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Lithuania leads in Europe by share of female scientists

Although world statistics show that men ...

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Requirement for the companies to reveal salaries they pay to male and female employees

As the European Institute for Gender Equ...

[CONTINUE →](#)[BALTIC](#)[NATIONAL HUBS](#)[TINNGO NEWS](#)

Baltic hub finished collecting interviews from Estonian respondents

Baltic hub has collected all the planned...

[CONTINUE →](#)

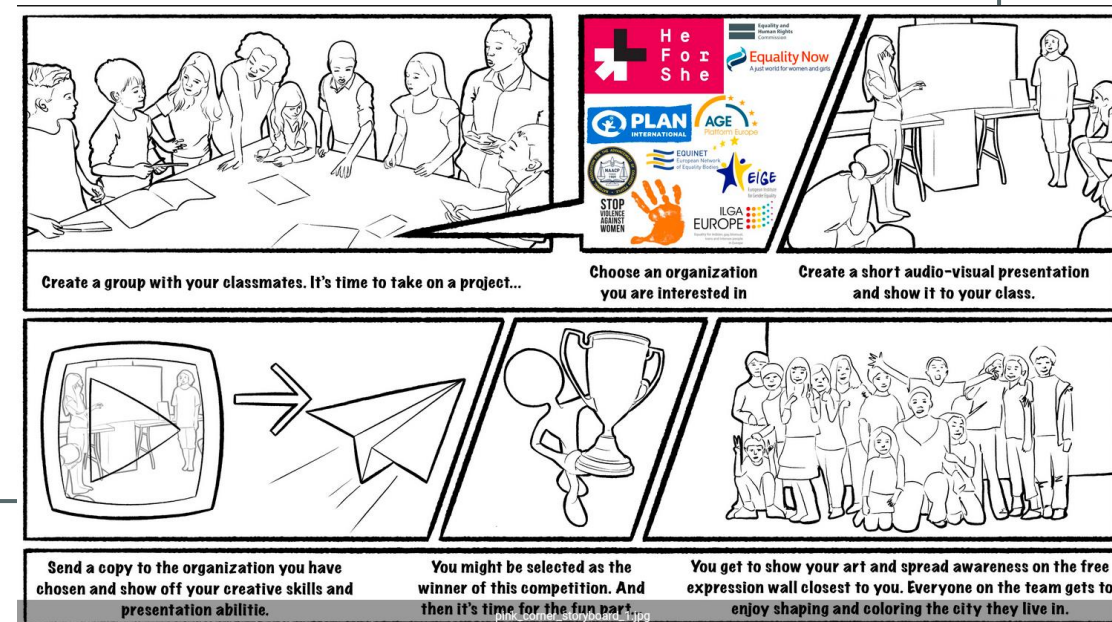
Objective

To create opportunities to develop gender smart mobility services and products:

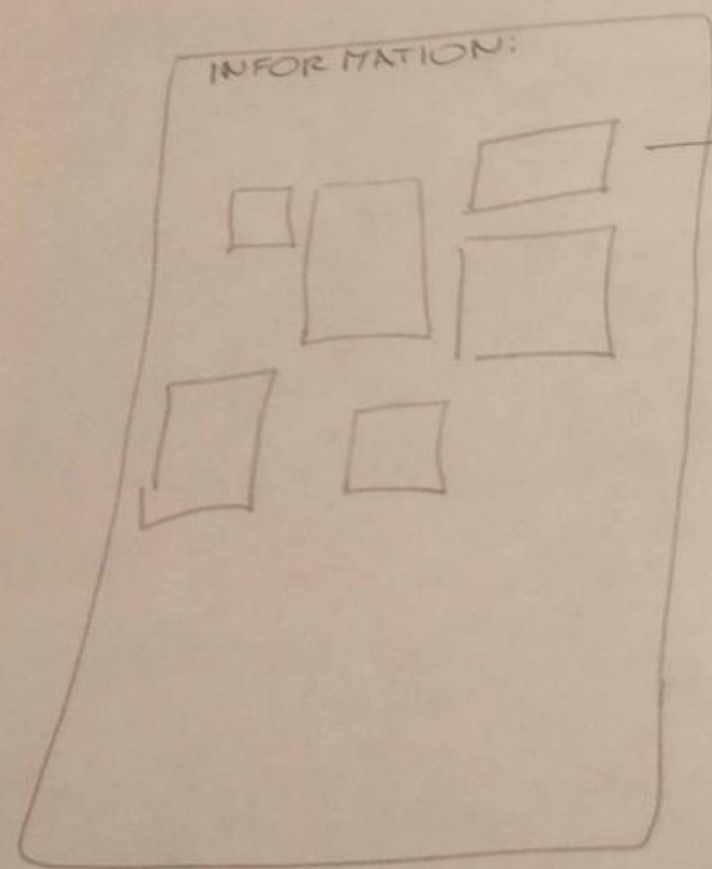


Design as provocation, as a conversation, as a systems approach

- Hubs -> locally generated ideas for smart and diversity sensitive mobility products
- Cov team -> develops design brief
- Codesign of solutions with the hubs
- Way of engaging communities, and Creating real solutions
- Severely influenced by Covid



BUS STOP = COMMUNITY HUB



EASY ACCESS

INFORMATION ON LOCAL charities / help

- domestic violence
- mental health support
- education / life long learning
- human trafficking help line
- legal help for undocumented
- local community groups



who is using bus stops?

- women
- elderly
- vulnerable

"There is no 'HARD to reach GROUPS' but
There are organisations that don't know how
to reach them



Design provocation

FIDO - ride on



Development +8

Design provocation

Relaxation room sign logo design

Relaxation room (quiet/safe space) sign/logo designs

Design 1

Design 2

Design 3

Awareness +3

Suggestion

The Skuchair



Development +7

Design provocation

meet FIDO



Awareness +8

Design provocation

Public charging point concept designed for the TInnGO project by Sanjeevi Suganthi Pugazhenthii



Design +3

Design provocation

Nursing Pod by Dr Nicola York



Design +1

Design provocation

Ride Sharing waiting space. Design Provocation No. 6

Compact modular installation

An attractively lit trunk.

Development +7

Design provocation

Ride Sharing waiting space. Design Provocation No. 5

Complete space, with illumination.

Multi-purpose information hub.

Awareness +8

Design provocation

Ride Sharing waiting space. Design Provocation No. 4

Sculpted, outdoor cocoon seat.

Installed in park perimeters and soft landscaped areas.

Awareness +8

Design provocation

Ride Sharing waiting space. Design Provocation No. 3

Night time illumination

User selectable colour/sequence

Awareness +8

Design provocation

Ride Sharing waiting space. Design Provocation No. 2

Double space version of design.

Rigid structure to support being roof, supporting wildlife and absorbing

Awareness +7

Design provocation

Ride Sharing waiting space. Design Provocation No. 1

Display illuminates when user approaches.

All interaction with service remains on user's Smartphone.

Awareness +7

Suggestion

E-scooters in the family?



Development +5

Design provocation

Emergency Drone Service



Design Safety and security +4

Design provocation

Emergency Drone Service



Design +3

Objective

Assessment of the specific transport requirements of diverse groups of women

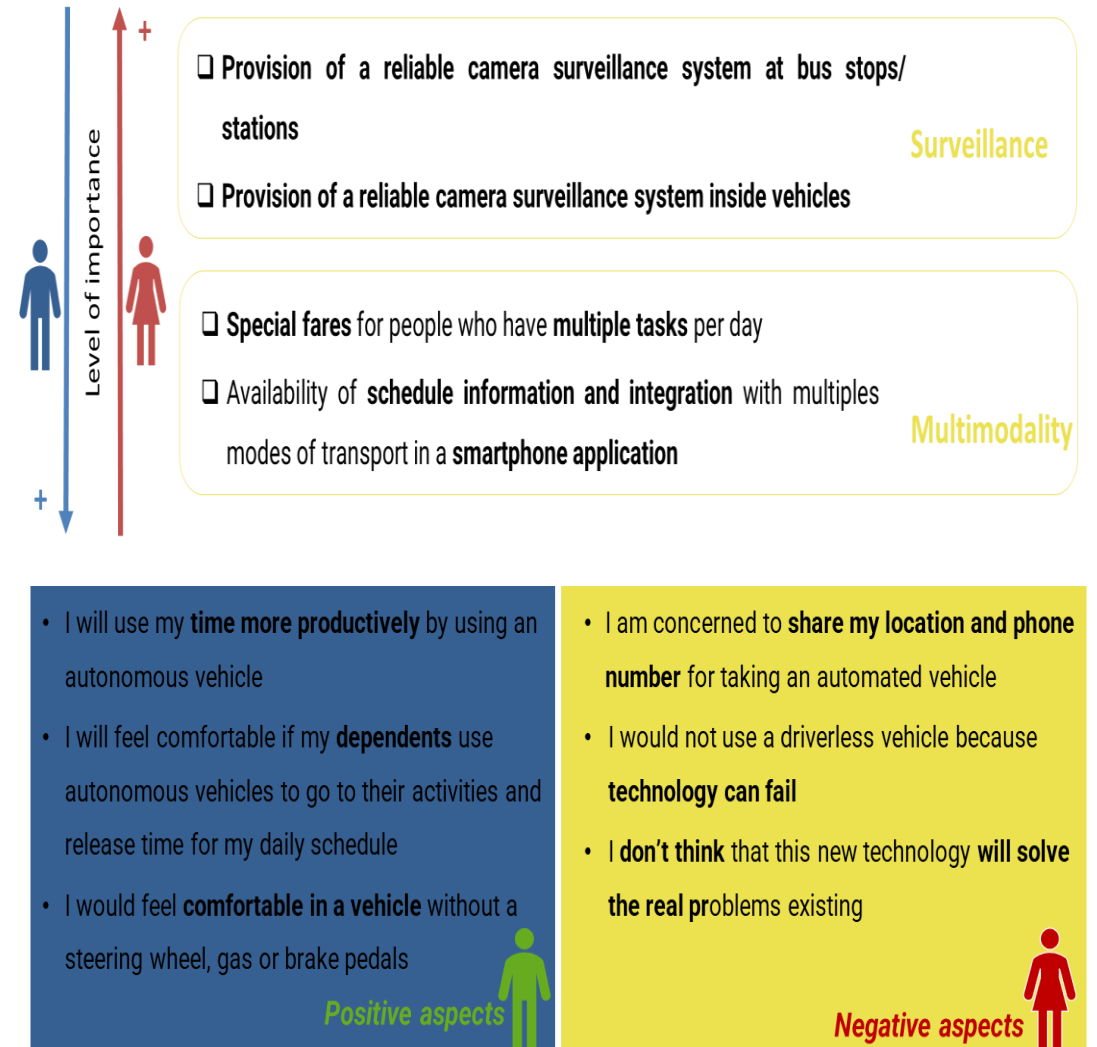


Data collection

- Severely effected by covid
- Agent based modelling could not be used
- 4436 completed surveys were provided from 10 TInnGO Hubs: Spanish, Portuguese, French, Italian, Greek, German, Baltic, Scandinavian, UK and Romanian
- Data sets were skewed, with insufficient replies from non-binary and transexual respondents and other vulnerable groups (older people, etc.).

Specimen results

- Public transport provision only meets needs of 33% of population
- For public transport women need increased space, accessibility, security, flexibility and better service integration multimodality
- More sceptical/less trusting of autonomous vehicles and their usefulness.

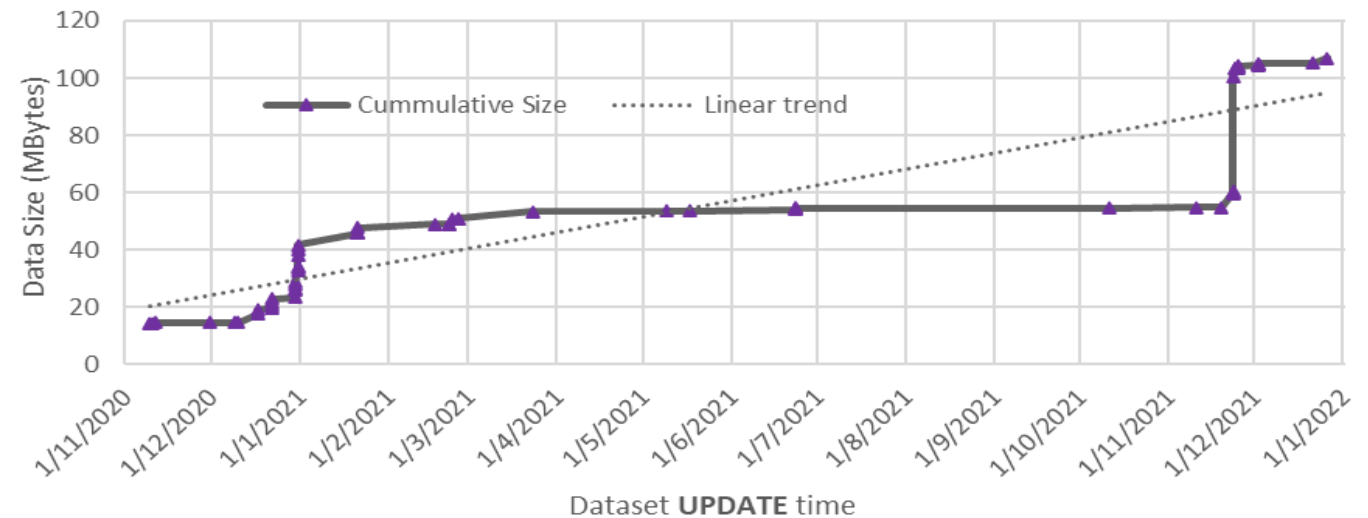


Objective

To provide an interrogatable easily accessible, standardised mobility data repository and survey engine as a one stop shop for gendered mobility data



T-ODR CUMMULATIVE DATA SIZE IN TIME



Based on "F.A.I.R." requirements Findable, Accessible, Interoperable and Re-usable principles

Objective

*Development of actions and measures to
remove barriers in smart mobility :
organisations and products*



Gender and Diversity Action Plans (GaDAPs)

Based on methods used in gender equality, TInnGO developed the “GaDAP” as a tool for gender equality work with an intersectional approach within the smart transport context.

The work aimed to ...

- Develop, or deepen, the understanding on the issue of gender and diversity within an institution, a municipality, or similar...
- Ensure that the policy programs and activities include a gender and diversity perspective;
- Promote the considerations of gender and diversity issues at all policy levels; and
- Support people in achieving a sustainable everyday life.

GaDAPs applied through standard action planning process

Define the vision and goals

Define measures to reach visions and goals

Set up time bound targets

Define activities and responsibilities

Means for implementation

Prioritise activities

Allocate resources

Follow up and revise ...



Gender Smart Mobility Indicators

1. Affordability

Transport is not 'smart' if citizens cannot afford to use it. Affordability must be regarded for all forms of transport: Public transport solutions, smart cars, smart biking, and walking.

2. Effectiveness

An effective transport system is one that is effective for different kind of trips and users. Smart transport solutions must accommodate both work and care trips for example. What is effective also needs to include intersectional categories, such as age, (dis)abilities, and class.

3. Attractiveness

Attractive transport counts for a transport system that is customized and comfortable for a broad group of people. Should but considers the users' wishes for a clean, safe and convenient place to be at. It connects to life styles and life style changes.. "smart" includes e.g. biking/electric cars etc

4. Sustainability

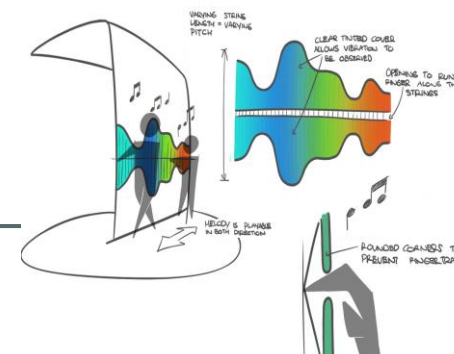
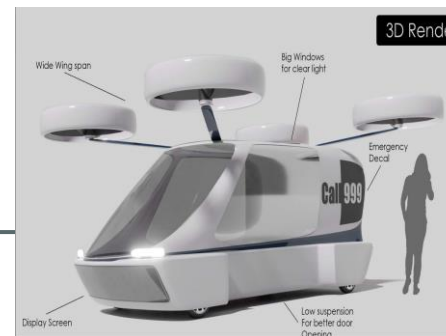
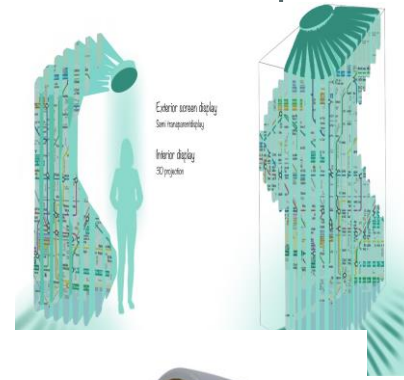
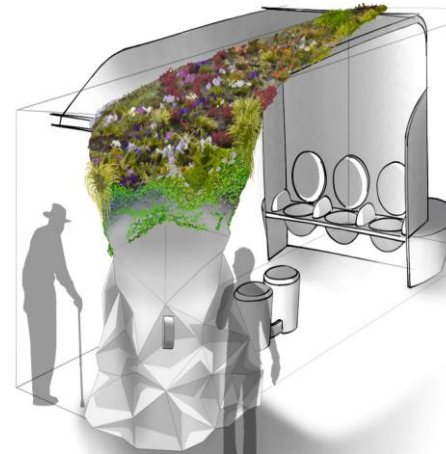
A key dimension in gender smart Transport is that it provides an environment friendly and green way of moving around. Smart transport aims at reducing CO2 emissions, and holds a social dimension, being socially sustainable for a broad group of users.

5. Inclusivity

An inclusive transport system integrate the four dimensions of affordable, effective, attractive and sustainable transport. Moreover, inclusive transport solutions are inclusive in so far that they diminish discrimination towards certain groups of people e.g. in relation to race as well as gender, i.e. racism and sexual harassment.

Use of Indicators in TInnGO

- To assess concept design
- To assess web sites of entrepreneurs
- To assess mobility systems
- Developed into a reflective tools for use with students



Media analysis



Digital analysis of internet imagery

Digital analysis of visual representations using Gephi and Clarifai produced by auto companies etc revealed:

Future is

- technocentric,
 - exclusionary,
 - featuring large cars with small footprints
 - empty roads!
-
- Significant underrepresentation of wider diversity and public transport



Visual analysis of female entrepreneurs' web sites

- Three cases of female entrepreneurships (Hövding: safety collar, Påhoj, helmet with sound, Safe+Sound/combi baby pram/bike seat.
- Method: Visual and qualitative analysis
- Research question: How do these three cases contribute to gender smart mobility?



Hövding



Safe+Sound



Påhoj

Objective

Evaluation of barriers to employment and education in the smart mobility sector

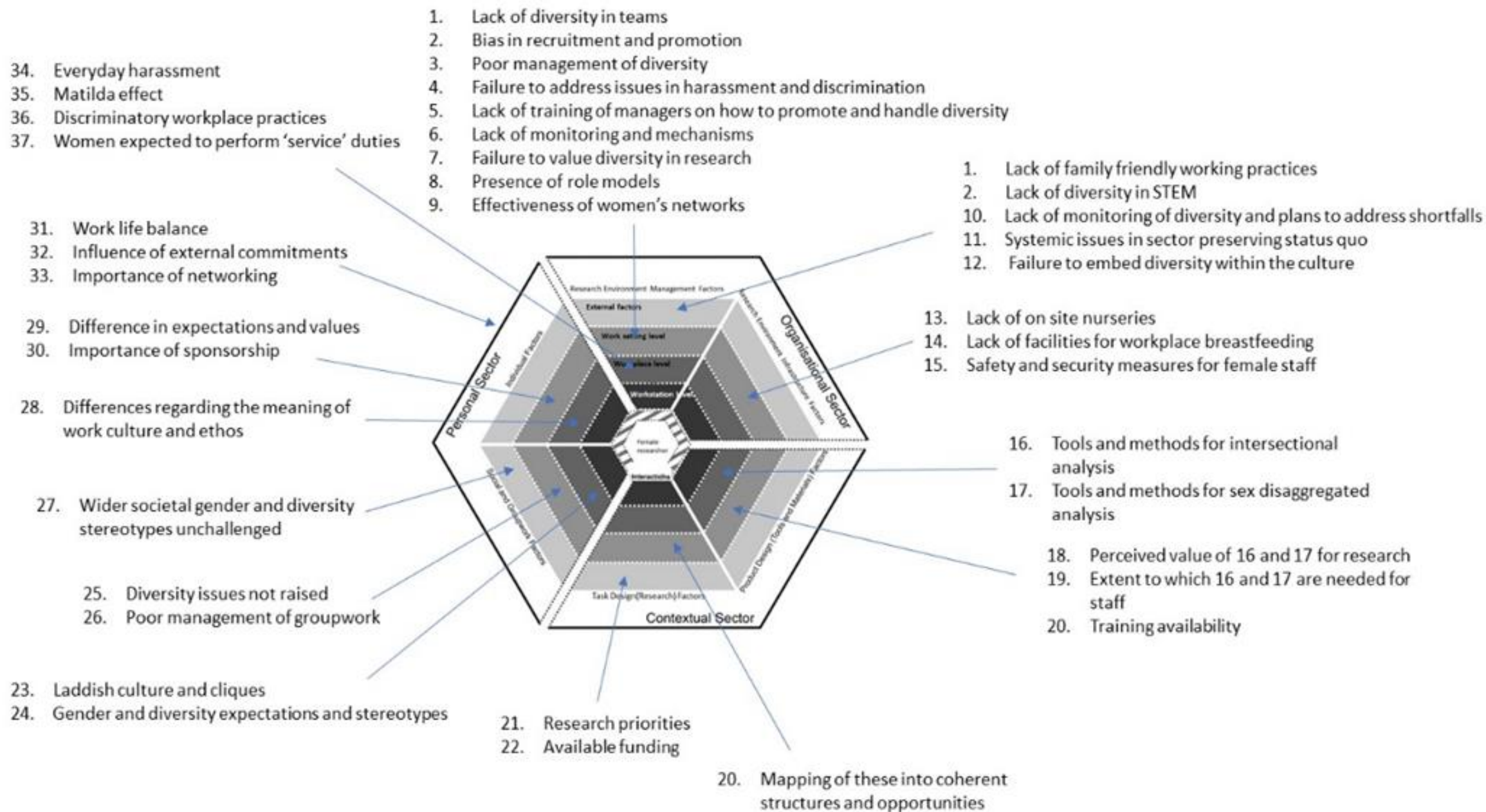


Education and research

- Still lack of female students and wider diversity in STE(A)M subjects which feed smart mobility
- Female students believe that this is a good preparation for their later careers as the transport sector is also biased
- Female research footprints are significantly smaller
- This remains a global problem
 - Some good practices are emerging
- Key issues around leadership and who controls the rhetoric



Overview of barriers to career progression in transport research



Main recommendations

- Need for organisational and structural change across TBE (including HEIs) and funding bodies; creating learning organisations
- Implementation of Gender and Diversity Mainstreaming tools and methods at every level of operations and projects
- Training and education of managers on creation of diverse inclusive working environments
- Need for innovative tools and roadmaps to drive gender and diversity in transport sector and research teams (TInnGO)

Employment

- Women still form 22-27% of the transport workforce across our project
- Indepth interviews and case studies revealed most had experienced
 - discrimination, everyday harassment, belittlement, gender pay gaps and glass ceilings, the need to work harder and constantly prove themselves
 - successful women were passionate, committed and resilient
 - entrepreneurial women faced difficulties in gaining investment
 - lack of role models and powerful networks

Key outcomes to address education and employment issues

- 8 training modules and webinars to explain 'gender'
- Dissemination events to over 400 people
- Educational case studies
- Motivational portraits
- New role models recruited to act as mentors
- New supportive networks created
- Social media, videos, web sites
- TinnGo hubs
- Extensive recommendations targeted at different sectors of the R&I environment
- Gender and Diversity Action Plans

- 11 policy briefs related to GaDAPs from the hubs
- Workshops with stakeholders to produce and implement action plans in their organisations
- Developed, tested and initiated a replicable change process in the sector
- Gender Smart Mobility Indicators to assess smart mobility products and services
- Role of design and living labs secured
- Resources for the research community
- Observatories integrated into organisations

TInnGO conclusions and impact



Wider issues



Need for structural change in HEIs

- 1) Opaqueness in decision-making;
- 2) Institutional practices in which unconscious cognitive biases operate in assessing merit, suitability for leadership or evaluation of performance;
- 3) Unconscious gender biases in the assessment of excellence and the process of peer review;
- 4) Gender bias present in the content of science itself
- 5) A gendered labour organization, resulting in a gender pay gap, harassment and concentration of power, as well as in a need to recognize the importance of life work balance.

How? Design in at the proposal stage

1. **Fostering equal opportunities and gender balance in projects teams** – look at opportunities for mentorship, co-authoring, women as leaders of work packages
2. **Ensuring gender balance in decision-making** – look at make up of all advisory panels and steering groups, use previous PIs
3. **Integrating the gender dimension in research and innovation (R&I) content**,
Brainstorm, look at qualitative, social and citizen science approaches. Go beyond gender to look at wider inclusion and intersectionality
4. Recruit team and board members early!

Ranking of 111 gender flagged projects ([Sandstrom et al](#))

Rank	Evidence	Number of projects
A	Projects carry out a full gender analysis and a sex analysis where appropriate, take the gender dimension seriously into account and integrate gender in a good sense throughout the whole project. They integrate the gender dimension into a significant part of their activities, at various levels, such as in theoretical background, methodology, the impact and dissemination sections. The result is a clear vision of how the gender dimension will be integrated into the research content, and good internal coherence within the project. These projects tend to include good gender expertise and, more generally, social science expertise in the teams.	17 (13.5%)
B	Projects discuss gender dimension in a few lines, with no further development. Some of these projects develop to some extent a sex analysis but miss the gender analysis while it is relevant.	49 (39.6%)
C	Projects only mention (generally rapidly) gender balance in the team and completely miss any gender dimension in their research.	45 (46.8%)

Table 11: Ranking scheme



POLITECNICO
DI TORINO



CITTÀ DI TORINO



TInnGO



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The work continues:
HORIZON-WIDERA-2022-ERA-01-80 — Living Lab
for gender-responsive innovation

H2020 GILL project starting 2023
Gender Innovation Living Lab

Thank you

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