USER-CHI
CHARGING YOUR E-MOBILITY FUTURE

ETHICS MONITORING REPORT

D11.1: Ethics Monitoring Report

Date: **31/01/2021**
Author(s): **Anne Freiberger**
Co-author(s): **Julia Schmidt, Felix Nowack, Hermann Blümel, José Mercado**

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No [875187]

Deliverable details

Project number	Project acronym	Project title
H2020 - 875187	USER-CHI	Innovative solutions for USER centric Charging Infrastructure

Title	WP	Version
D11.1 Ethics Monitoring Report	WP11	1.0

Contractual delivery date	Actual delivery date	Delivery type*
31.01.2021	29.01.2021	ETHICS

*Delivery type: **R**: Document, report; **DEM**: Demonstrator, pilot, prototype; **DEC**: Websites, patent fillings, videos, etc; **OTHER**; **ETHICS**: Ethics requirement; **ORDP**: Open Research Data Pilot.

Author(s)	Organisation
Anne Freiberger	IKEM
Felix Nowack	IKEM
Julia Schmidt	IKEM
Hermann Blümel	IKEM
José Mercado	IKEM

Document history

Version	Date	Person	Action	Status*	Dissemination level**
V0.1	15/05/2020	Anne Freiberger	Table of Content - First draft	Draft	PU
V0.2	12/06/2020	Anne Freiberger	Written Summary - Webinar	Draft	PU
V0.3	05/11/2020	Anne Freiberger	Chapter 3 & 5	Draft	PU
V0.4	27/11/2020	Julia Schmidt	Chapter 1 & Chapter 2	Draft	PU
V0.5	07/12/2020	Anne Freiberger	Chapter 6	Draft	PU
V0.6	12/01/2021	Felix Nowack	Revisions Chapters 2-5	Draft	PU
V0.7	21/01/2021	Richard Kemmerzehl (GEW)	Review	Draft	PU
V0.8	26/01/2021	María Tomás (ETRA)	Review	Draft	PU
V1.0	28/01/2021	Anne Freiberger	Final version	Final	PU

*Status: Draft, Final, Approved, Submitted (to European Commission).

Dissemination Level: **PU: Public; **CO**: Confidential, only for members of the consortium (including the Commission Services); **EU-RES** Classified Information - restraint UE; **EU-CON**: Classified Information - confidential UE; **EU-SEC**: Classified Information - secret UE

Abstract

This report describes the procedures to manage the ethical issues of the project. Moreover, the report addresses the RRI strategy with a special focus on the gender dimension of the project. This includes gender-related specialities in regard of women involved as end-users, as well as female researchers within the project team. Therefore, the report includes a written summary of the Webinar "Diversity in Transport" offered for the USER-CHI consortium, as well as information on gender mainstreaming in research institutions and other organisations.

Keywords

Ethics monitoring; RRI strategy; gender dimension; Webinar "Diversity in transport"; gender mainstreaming.

Executive summary

The object of this report is to provide a description of the monitoring of ethical issues within USER-CHI.

Therefore, it introduces guidelines on the management process of ethical issues. Moreover, the report provides the legal foundation of ethics monitoring within the H2020 framework. The ethical research conduct will be outlined in order to provide a baseline for ethical research standards. In addition, guidelines for ethics monitoring procedures will be illustrated.

Moreover, the framework of the responsible research and innovation strategy will be explained. On this basis, the participation of stakeholders for topics on responsible research and innovation will be elaborated in the context of USER-CHI. The gender dimension of USER-CHI will be addressed, which includes both the gender dimension for women as end-users and women as participating researchers.

Based on the starting point of the gender dimension of USER-CHI for women as end-users of e-mobility, the “Webinar - Diversity in Transport” was held in M4 as part of the ethics monitoring activities. Therefore, a written summary of the main findings of the webinar is included.

Furthermore, an overview of toolkits for gender mainstreaming in research institutions and other organisations developed by the European Institute for Gender Equality is presented, motivating project partners to implement themselves.

Table of contents

1. Introduction 8
1.1 Purpose of the Document 8
1.2 Scope of the Document 8
1.3 Structure of the Document 8
2. Dependencies with other USER-CHI tasks 9
3. Ethics Monitoring 10
3.1 Legal Foundation of Ethical Principles 10
3.2 Ethical Research Conduct 11
3.3 Guidelines for ethics monitoring 13
4. Responsible Research and Innovation Strategy 16
4.1 Gender Dimension of USER-CHI 16
4.2 Public engagement 18
5. Webinar – Diversity in Transport 20
5.1 Human-centred design & the gender perspective in USER-CHI 22
5.2 Output of the research field: Gender & Transport 24
5.3 Gender-neutral planning and managing of e-mobility: Best practices and gaps 25
5.4 Main findings of the Webinar 25
6. Gender equality in research teams 27
6.1 Objectives of gender equality in research teams 27
6.2 Gender Equality Plans 28
7. Conclusions 32
Acronyms 33
References 34
Annexes 37

List of figures

Figure 1 Key Findings: European Parliament, Policy Department C, Gender Equality Plans in the private and public sectors in the EU 29

Figure 2 GEAR Tool. Source: European Institute for Gender Equality 31

Figure 3 The GEAR Step-by-step Guide 31

1. Introduction

1.1 Purpose of the Document

This document reports on the ethics monitoring procedure in the USER-CHI project as well as the implementation of the Responsible Research and Innovation Strategy (RRI). Therefore, it provides guidelines on how to manage ethical issues. In doing so, the guidelines will contribute to ensuring compliance with legal and ethical requirements under the Horizon 2020 Programme. Moreover, this report includes the gender dimension within USER-CHI to enable project partners to take it into account in their research tasks. Besides, the report aims at encouraging project partners to implement gender equality tools in their research teams within the project by explaining benefits and providing examples e.g., gender equality plans and gender equality training.

1.2 Scope of the Document

The scope of this document is to outline the role of ethical guidelines within the USER-CHI project and to describe the modus operandi for managing ethical issues that may arise involving the relevant stakeholders in the project. Another aspect described in this document is RRI, with a focus on the gender dimension of USER-CHI and gender quality of the participating research teams.

1.3 Structure of the Document

After providing an introduction in chapter 1, the rationale of ethics and its monitoring in the context of USER CHI is described in chapter 2. Therefore, chapter 2 provides a description of the two-step procedures to manage ethical issues, which might arise during the performance of USER-CHI research activities.

The concept of Responsible Research and Innovation (RRI) is introduced in chapter 3. Therefore, the different pillars of RRI will be explained. As this report focuses on gender, as one of the pillars of RRI, chapter 3 describes the gender dimension of USER-CHI.

Subsequently, Chapter 4 includes the summary of the Webinar “Diversity in Transport”, which was held in May 2020 (M4) of the project and addressed the gender dimension of USER-CHI in the transport sector as one of its topics.

Chapter 5 outlines instruments on gender equality in research teams. Besides, the concept of gender equality training for employees of authorities is introduced.

Following to which, Chapter 6 provides the conclusions of the report.

2. Dependencies with other USER-CHI tasks

This chapter addresses the dependencies of Task 11.1 “Ethics monitoring and Responsible Research and Innovation”, as well as D11.1 “Ethics Monitoring Report”, with other research tasks and deliverables.

Firstly, T11.1 features a cross-connection with T1.1 “User requirements”. T1.1 implies qualitative and quantitative user research, which will be carried out in order to gain an overview of user’s needs in regard to charging infrastructure for EVs. Therefore, D1.1 “User requirements for USER-CHI solutions” collects the user requirements, which are generated through the Big data analysis and the User-Driven Innovation approach. D11.1 includes different preferences by gender concerning the location of charging points for EVs in urban areas, as well as for user requirements for EVs. Accordingly, the results of D1.1 need to be taken into account in order to address the gender dimension of USER-CHI (chapter 4.1) as part of the ethics monitoring.

Moreover, WP6 “Demonstration Concept and Implementation Plan” establishes the demonstration activities, which will be carried out in the pilot sites. The demonstration activities are relevant for the process of ethics monitoring, since ethical questions can arise during the implementation. Therefore, the guidelines for the ethics monitoring in USER-CHI (chapter 3.3) should be followed during the implementation process.

Furthermore, T11.1 and D11.1 are connected to other tasks implemented in WP11. D11.2 “Research Participant Involvement Report” addresses the procedure and criteria, that will be used to identify and recruit research participants for USER-CHI. It establishes the requirement of informed consent in order for research participants to be able to take part in the project. The recruitment of research participants is sensitive towards the ethical issue of data protection. Therefore, the guidelines for the ethics monitoring process need to be followed (chapter 3.3). This connection applies to D11.4 “Protection of Personal Data Report” as well, which describes the actions conducted to protect the personal data collecting and processing processes, from an ethical point of view.

Subsequently, WP12 “Ethics requirements” addresses the ethics committee in D12.1 “D12.1H – Requirement No. 1”, which will also be further described in D11.5 “Ethics Assessment Report”. The ethics committee plays a relevant role within the ethics monitoring process, as it will support the USER-CHI cities during the implementation of the pilot sites in regard to ethical issues.

3. Ethics Monitoring

This chapter addresses the legal foundation of the relevant ethical principles, which have to be met by the research activities undertaken in USER-CHI. Furthermore, it describes the ethical research conduct, which illustrates the Twelve Golden Rules to Ethical Research Conduct. Ethics Monitoring has the goal to systematically support the USER-CHI project partners to comply with ethical principles.

3.1 Legal Foundation of Ethical Principles

The Regulation (EU) No 1291/2013 was implemented to determine the regulatory framework for H2020 projects and establish the Programme in the first place. [1] Therefore, the Regulation No 1291/2013 establishes amongst other aspects the general objectives (Art. 5), gender equality (Art. 16) and open access (Art. 18). Moreover, Art. 19 of the Regulation No 1291/2013 establishes the requirement to follow ethical principles while carrying out research activities within H2020 projects. Thereby, Art. 19 states:

> ***Article 19 – Ethical principles***
>
> *1. All the research and innovation activities carried out under Horizon 2020 shall comply with ethical principles and relevant national, Union, and international legislation, including the Charter of Fundamental Rights of the European Union and the European Convention on Human Rights and its Supplementary Protocols. Particular attention shall be paid to the principle of proportionality, the right to privacy, the right to the protection of personal data, the right to the physical and mental integrity of a person, the right to non-discrimination and the need to ensure high levels of human health protection. (...)*

However, the guiding framework for USER-CHI is not only derived from general ethical principles based on Article 19, but also the relevant legislation.

[1] Regulation (EU) No 1291/2013 of the European Parliament and of the Council of 11 December 2013 establishing Horizon 2020 - the Framework Programme for Research and Innovation (2014-2020) and repealing Decision No 1982/2006/EC.

Article 19 refers explicitly to the Charter of Fundamental Rights of the EU[2], which defines personal, civic, political, economic, and social rights for European citizens. Also, the Council of Europe's European Convention on Human Rights[3], which entered into force in 1953, constitutes a basis for ethical questions.

The explicit reference in Article 19 to the right to privacy and the right to the protection of personal data underpins the importance of the privacy-related principles for research. Moreover, the principle of proportionality, as a fundamental legal principle, as well as the right to non-discrimination should be observed as well.

3.2 Ethical Research Conduct

Apart from its legal foundation, ethical research practices are also based on fundamental principles of good research. The USER CHI Grant Agreement, Section 4, Article 34.1 outlines how to comply with ethical standards within the project by means of ethical principles (including the highest standards of research integrity and applicable international, EU and national law). In fact, it states the project's obligation to comply with ethical and research integrity principles.

In doing so, the European Code of Conduct for Research Integrity formulates a set of characteristics of the highest standards of research integrity through the following four essential principles:

- **reliability** in ensuring the quality of research reflected in the design, the methodology, the analysis, and the use of resources.
- **honesty** in developing, undertaking, reviewing, reporting, and communicating research in a transparent, fair, and unbiased way.
- **respect** for colleagues, research participants, society, ecosystems, cultural heritage, and the environment.
- **accountability** for the research from idea to publication, for its management and organisation, for training, supervision, and mentoring, and for its wider impacts

[2] Charter of Fundamental Rights of The European Union - 2012/C 326/02.
[3] Convention for the Protection of Human Rights and Fundamental Freedoms as amended by Protocols No. 11 and No. 14 – ETS No.005.

Another example of guiding ethical principles for good research are formulated **through the Twelve Golden Rules to Ethical Research Conduct**[4] including the following twelve aspects:

You must ensure that your research:

1. Respects the integrity and dignity of persons (that this intrinsic worth protects them from being used for greater perceived benefits)

2. Follows the "Do no harm" principle. Any risks must be clearly communicated to subjects involved

3. Recognises the rights of individuals to privacy, personal data protection and freedom of movement

4. Honours the requirement of informed consent and continuous dialogue with research subjects

5. Treats animals with respect and works under humane conditions before, during and after the research

6. Designs animal research in accordance with the 3 Rs: Replacement, Reduction, Refinement

7. Respects the principle of proportionality: not imposing more than is necessary on your subjects or going beyond stated objectives (mission creep)

8. Treats societal concerns seriously - a researcher's first obligation is to listen to the public and engage with them in constructive dialogue, transparently, honestly and with integrity

9. Tries to prevent being openly available for misuse or malignant dual use by terrorists or military organisations

---

[4] European Commission, Ethics for researchers – Facilitating Research Excellence in FP7, Brussels 2013, p.24.

10. Recognises the wholeness of an individual and that any modification (genetic or technological) does not interfere with this principle

11. Respects biodiversity and does not impose irreversible change that threatens the environment or ecological balance

12. Builds on the understanding that any benefits are for the good of society, and any widely shared expressions of concern about threats from your research must be considered (with the acceptance that perhaps certain research practices might have to be abandoned).

Although a few aspects are directly linked to research activities in the field of medicine or biology directly affecting human beings, some aspects are basic and fundamental, and are applicable within USER-CHI project. For example, whereas No. 1 is a basic and fundamental aspect and applicable to any research activity, No. 3 (Right to privacy) and No. 4 (Informed Consent and continuous dialogue) are of peculiar relevance within the USER-CHI project. Moreover, the USER-CHI consortium needs to be aware of the ethical dimensions introduced by No. 8 (Societal concerns) and No. 12 (Threats from research), which could arise in connection to the development of innovative technologies. In relation to the involvement of research participants the principles No. 7 (Principle of proportionality) needs to be regarded as well.

Based on both foundations of ethical principles, all research activities in USER-CHI are obliged to follow these principles. An assessment whether the research activities comply with these principles or not needs to be considered, respectively. Guidelines for monitoring and assessment are described in 2.3.

3.3 Guidelines for ethics monitoring

This subchapter defines guidelines for the ethics monitoring for research activities undertaken in USER-CHI.

The ethics monitoring in USER-CHI consists of two components:

1) *Ethics issue – self-assessment*
2) *Ethics issue – memo template*

Both components will be further addressed in the subchapters below.

3.3.1 Ethics issue – self-assessment

The concept of “Ethics issue – self-assessment” requires the project partners of the USER-CHI consortium to be aware of the ethical dimension of their research task.

If the USER-CHI project partners detect ethical issues, which they cannot solve or need to discuss with the Ethics Advisor, they need to communicate this using the established communication channels.

In order to assess and detect potential ethical issues within USER-CHI research activities the following topics (based on the Twelve Golden Rules to Ethical Research Conduct – see section 2.2) are needed to be handled with special care:

1) *Privacy of research subjects: Data Protection and Informed Consent*
2) *Dignity of research participants e.g., during demo site actions*
3) *Societal relevance of technical development: USER-CHI technical products*

3.3.2 Ethics Issues: Memo Template

For finding suitable solutions for the different issues, which may arise, each partner should communicate issues to the Ethics Advisor. Therefore, project partners of the USER-CHI consortium should use the "Ethics Issue - Memo Template" in case they detect ethical issues coming up during their research tasks.

The collaborative processing of the "Ethics Issue-Memo Template" could be discussed between concerned project partners and the Ethics Advisor during biweekly WP leader telephone conferences, as well as additional bilateral telephone conferences or via e-mail.

In cases where an in-depth discussion is needed to find suitable solutions for the ethical issues that arise the transdisciplinary of the whole consortium might also be used through discussion rounds, such as general meetings of the consortium or bi-monthly WP-leader telcos. The Template is included as Annex II in this report.

Ethics Issue – Memo Template

Date:	
Work Package:	
Specific Task:	
Project partner:	
Site:	

Contact of project partner who has identified the ethical issue:	
Specific ethics issue	
Relevant legal aspects (note: legal aspects might not be applicable for the ethical issue):	
Proposed Solution or mitigation measures:	
Ethics Advisor assessment:	
Reasoning behind the Ethics Advisor assessment:	
Date of decision:	

4. Responsible Research and Innovation Strategy

Chapter 3 describes the Responsible Research and Innovation Strategy applicable to H2020 research projects.

The topic of Responsible Research & Innovation (RRI) is an "approach that anticipates and assesses potential implications and societal expectations regarding research and innovation, with the aim to foster the design of inclusive and sustainable research and innovation."[5] In accordance, RRI is a major element of the objective "Science with and for Society", which is an element of the H2020 work programs.[6]

RRI is subcategorised in different elements, such as public engagement, open access, gender, ethics, as well as science education.[7]

There can be different, creative, and innovative approaches for addressing RRI in H2020 projects. The approach, which is undertaken in USER-CHI has a strong focus on ethical issues, in terms of data protection and therefore privacy rights of research participants. This topic is addressed in D11.2, D11.4, D12.1 and D12.2. Another focus of RRI in USER-CHI is the topic of gender, which will be explained in the following subsection.

4.1 Gender Dimension of USER-CHI

With the topic of gender being one of the relevant aspects of RRI strategies, it needs to be differentiated between two different aspects regarding gender-related questions.

On the one hand, the aspect of gender balance in research teams participating in USER-CHI needs to be emphasised. Therefore, this topic will be addressed in Chapter 5 of this document focusing on toolkits to promote institutional support. On the other hand, the gender dimension of USER-CH itself needs to be explored.

---

[5] European Commission, H2020 – Responsible Research and Innovation <https://ec.europa.eu/programmes/horizon2020/en/h2020-section/responsible-research-innovation.>, last accessed 22 December2020.

[6] European Commission, EN Horizon 2020 Work Programme 2018-2020, 16. Science with and for Society, (Decision C (2020)6320 of 17 September 2020) p.25.

[7] European Commission, H2020 – Responsible Research and Innovation <https://ec.europa.eu/programmes/horizon2020/en/h2020-section/responsible-research-innovation.>, last accessed 22 December2020.

The position paper of the advisory group for gender for the Horizon 2020 work program defines the concept of "gender dimensions" for research projects.[8] It states that the gender dimension is a dynamic concept that ensures that researchers question gender norms and stereotypes and address the evolving needs and social roles of women and men.

Considering gender dimensions of innovation at an early stage of product development it will foster the societal relevance of the innovation and technologies and will therefore improve the suitability for entering potential markets.[9]

As an example, D1.1 "User requirements" (p.86, table 24) elaborated by the project partner IBV shows the different preferences by gender concerning the location of electric vehicle charging points in urban areas:

Gender differences related to EV charge[10]

- **Women park more in *private parking*; it could be related to security**
- **Likewise, in Norway more women than men want points in supermarkets**
- **Women would like to have more charging points at *home*; it could be related to security.**

Moreover, IBV has summarised the most important differences and attempted explanations for gender differences in the user requirements for electric vehicles.

On p. 108 of D1.1 "User requirements for USER-CHI solutions" the following results are described:

In regard to Germany, Hungary and Norway there is a bigger gender gap concerning EV users, than the existing gap between male and female EV drivers in Italy or Spain. However, in Italy and Spain female EV users are the ones who are accompanied by children more often, then male EV drivers.

In all analysed countries female EV users park more often in private parking spots, then they do in public spaces. Moreover, female EV users like to use charging points at home more. An explanation for both of the last two differences could be related to security aspects and how women experience public spaces.

---

[8] Advisory Group for Gender, For a better integration of the gender dimension in the Horizon 2020 Work Program 2018-2020, Position paper, 2016.

[9] European Commission, EN Horizon 2020 Work Programme 2018-2020, 16. Science with and for Society, (Decision C (2020)6320 of 17 September 2020) p.25.

[10] Giménez, et. al., USER-CHI Project Report D.1.1 - User requirements for USER-CHI solutions, 2020, p.86.

Moreover, in Norway more female than male EV users demand charging points for parking lots of supermarkets. This need could be linked to societal roles and how shopping activities are divided in families.

Furthermore, male EV users consider the duration of low-speed charging points more problematic than female EV users. [11]

The results generated by IBV in D1.1 should be considered by the USER-CHI consortium, as they could be relevant for the development of technical products, as well as administrative decisions, or outreach activities. In order to foster the deployment of charging infrastructure, the preferences of both genders need to be taken into account in the process of administrative decisions. Therefore, security aspects for female EV users in public places for location mapping via CLICK could be integrated in the administrative process.

Moreover, the design phases of the products could be influenced by the findings described by IBV in D1.1. USER-CHI project partner could consider additional safety aspects for children, which might accompany adult EV drivers.

4.2 Public engagement

Chapter 3.2 describes the activities of the Stakeholder Advisory Group (SAG), the producing of videos about the USER-CHI project by EUR, as well as the USER-CHI website as three examples of public engagement undertaken within the project.

Stakeholder Advisory Group meetings

Within USER-CHI project a Stakeholder Advisory Group involving different actors from the electric mobility sector has been established by the project partner EUR. The group includes representatives from the Regulatory Assistance Project, Eurelectric, CHAdeMO, ChargePoint, AVERE, EVBox, BEUC, and EPA.

There are four meetings of the SAG intended aiming at incorporating their views, collecting their feedback, and at the same time sharing the results of the project, so they can be considered for the stakeholder's work.

The first of four meetings of the project took place on November 30th, 2020 and included a presentation of first project results, namely the user needs assessment (WP1) and the interoperability framework and platform design specifications (WP3 – products INCAR and INFRA). The presentation of this first project results was followed up by specific questions from the participating stakeholders (EV Box, ChargePoint, Eurelectric, CHAdeMO, Q-Park, Regulatory Assistance Project) which can also be addressed on an ad-hoc basis in between the planned further meetings.

[11] USER-CHI, IBV D1.1 „User Requirements", p.108.

USER-CHI videos

Audio-visual productions in form of videos are an interesting tool to transmit key messages in a clear and brief way. Its visual character and its ability to say a lot in a short time are key features to reach a wide audience, like the various players involved in the electromobility field. Moreover, the possibilities of interaction and re-broadcasting offered by its publication in different social networks are another fundamental aspect to justify its value for the dissemination goals of the USER-CHI project. Therefore, videos for each of the demonstration cities (TUR, BER, AMB, BUD, RSM), as well as the replication cities (MUR, FLO) will be elaborated. In addition, a general video about the USER-CHI project will be produced in order to show how the cities have worked together on the products and solutions. The videos are intended to include interviews with local EV users, as well as the local professional community. Moreover, the videos will be made available on the project's website and on the streaming service Youtube. Moreover, they will be published at strategically important moments of the project, e.g., when specific milestones are reached.

Due to travel restrictions and sanitary requirements in regard of Covid-19 the filming and producing of the videos have not been finished yet. However, the shooting in the city of Turku was already implemented in October 2020. The filming activities in other cities has been postponed until further notice. Until then EUR focuses on the producing of the general video first, which is created out of raw material provided by the city partners.

USER-CHI website

The USER-CHI website is the third example of engagement between the USER-CHI consortium and the public. The USER-CHI website has been launched at an early stage of the project and provides an overview of the actions taken and results generated by the consortium. It provides information about the project itself, as well as the cities, which are taking part in USER-CHI (AMB, BER, BUD, RSM, TUR) as well as the replication sites (FLO, MUR). A section is dedicated towards an overview of the technical products, and another one is dedicated to upcoming events. The USER-CHI website can inform both, the professional community in the electric mobility sector as well as interested European citizens, or EV users, on the topic of innovative charging infrastructure in Europe.

5. Webinar – Diversity in Transport

This chapter describes the outcome of the Webinar "Diversity in Transport", which was undertaken in the context of IKEM's role as Ethics Advisor and aimed at providing knowledge of the gender dimension of USER-CHI to the consortium.

The Webinar was prepared collaboratively and held online during M4 (May 7th, 2020: 10:00 – 12:00) by IBV, EUR and IKEM. A high number of project partners from the USER-CHI consortium participated, which showed that the topic was of big interest for city partners, but also for project partners, which are involved in technical and administrative tasks.

The Webinar focused on the topic of gender, as one aspect of diversity. Diversity is defined as a state of being diverse, which reflects the inclusion of different types of individuals (e.g. gender, origin, colour, religion, sexual orientation, etc.). In the transport sector, gender-related inequality exists in various areas, e.g., gaps in access to transport infrastructure and services, inequalities within the transport labour market (e.g., weak representation of women in the decision-making process in the transport sector) and gender-based safety issues, of which mostly women are affected by. Another aspect is the strong need for data emphasising the mobility behaviour of women which helps to improve transport policies, hence, reduces gender-related inequalities.

Mobility patterns and factors

The gender-related difference in mobility patterns is closely linked to the different roles both men and women have in Western societies, nowadays. These observations are strongly linked to the factors explained below.

One factor determining the mobility behaviour of women is related to safety issues. Particularly, women hold a strong fear of harassment, that they consequently want to avoid. This does not only affect the mobility choice of women, but also their decisions participating in social life, in general.[12]

Another factor determining the mobility pattern of women is related to trip-chaining. While men tend to move from A to B and from B to A, the mobility pattern of women usually seem to be more complex. Women tend to undertake multiple trips – not only from A to B and vice versa –

[12] JRC (European Commission), Science for Policy Report – Women in European transport with a focus on research and innovation: An overview of women's issues in transport based on the Transport Research and Innovation Monitoring and Information System (TRIMIS), 2019.

based on their different daily activities compared to men, e.g., related to household maintenance, and taking care of children and elderly.[13]

Another factor influencing the mobility pattern of women is related to the consciousness for environmental issues. Women tend to be more aware of environmental impacts related to their transportation mode of choice. Based on this, women are more willing to adapt their everyday-life behaviour to contribute to a greater environmental impact.[14]

The last factor is related to ergonomics of women. Ergonomics of female bodies are mostly not considered for safety tests and adaptations. For example, smaller women and pregnant women are often not represented in the development process of vehicles when it comes to crash and safety tests.[15]

Women and new transport technologies

The second main aspect that has been highlighted during the keynote is the difference between men and women when accepting new technologies. In general, women tend to be more sceptical about the readiness of new technological solutions and their liability, such as EVs and charging infrastructure, respectively.[16] One argument for this observation may be linked to the fact that women tend to have fewer positive attitudes towards emerging technologies in general.[17] Therefore, it does not seem to be remarkable that a typical early adopter of EVs may be a man.[18]

Also, female e-mobility users tend to be less interested in EV car-ownership compared to male users.[19] This aspect may be relevant for transportation services following the concept of mobility-as-a-service (MaaS).

---

[13] JRC (European Commission), Science for Policy Report – Women in European transport with a focus on research and innovation: An overview of women's issues in transport based on the Transport Research and Innovation Monitoring and Information System (TRIMIS), 2019.
[14] JRC (European Commission) Science for Policy Report – Women in European transport with a focus on research and innovation: An overview of women's issues in transport based on the Transport Research and Innovation Monitoring and Information System (TRIMIS), 2019.
[15] IBV, Interview Questions for the Webinar, USER-CHI 2020.
[16] Nils Berkely, David Jarvis, and Andrew Jones, Analysing the take up of battery electric vehicles: An investigation amongst drivers in the UK., Transportation and Research – Part D: Transport and Environment (2018).
[17] JRC (European Commission) Science for Policy Report – Women in European transport with a focus on research and innovation: An overview of women's issues in transport based on the Transport Research and Innovation Monitoring and Information System (TRIMIS), 2019.
[18] ANS Project - Analyse der Nachfragereaktionen und der Stellplatzbelegung bei Variation des Preismodells für die Nutzung von Ladeinfrastruktur im Berliner Modell, IKEM, (to be puplished).
[19] JRC (European Commission) Science for Policy Report – Women in European transport with a focus on research and innovation: An overview of women's issues in transport based on the Transport Research and Innovation Monitoring and Information System (TRIMIS), 2019.

EU activities – Gender & Transport

The European Commission has initiated activities aiming to reduce gender-related inequalities in the transport sector. The initiative "Women in Transport: EU platform for change"[20] was launched in 2017 with the goal of strengthening the employment of women and provide equal access to job opportunities for both men and women in the transport sector. This initiative has been initiated when the overall share of women being employed in the European transport sector was only circa 22 %.[21]

The initiative offers a forum for discussion and exchange of good practices for enterprises in the transport sector. Moreover, on the practical side, the platform provides a toolkit, which assists companies to check what measures they can apply deriving from different case studies from European countries.

5.1 Human-centred design & the gender perspective in USER-CHI

Another key aspect addressed was brought to the participants in an interview that Matilde Chinellato (EUR) carried out with Ricard Barberà-Guillem (IBV) about the approach of human-centred design and how it contributes to the gender dimension in general, and particularly to USER-CHI. The following subsections present a summary of the interview highlights. The complete interview could be found in Annex I.

Human-centred or user-centred design means to put the person or user in the middle of the product design and development processes. It also means that the user or consumer must be a source of relevant information for product design and development. In a human-centred design, users become collaborators of the development process, from the initial requirement definition until the final concept and prototype validation. Not focusing on the needs and expectation of the user, could lead to facing potential undesired situations in the product implementation face. Human-centred design means better products and more satisfied and happier clients

Usually, the "neutral" user used as a reference in user-centric research activities is by default a man. The development of innovations and technologies misses business opportunities because of failing to understand sex or gender factors. Furthermore, the critical point is that sometimes this may cause health problems for women. An example of this is that, although users have

[20] European Commission "Women in Transport: EU platform for change", <https://ec.europa.eu/transport/themes/social/women-transport-eu-platform-change_en.>, last accessed 22 December2020.

[21] European Commission "Women in Transport: EU platform for change", <https://ec.europa.eu/transport/themes/social/women-transport-eu-platform-change_en.>, last accessed 22 December2020.

gained more weight in the development processes in the automobile industry, so far, the cars in the market are not crash tested with women dummies, nor have safety belts for pregnant women.

Moreover, there are things that we can do systematically: analysing results differentiating by gender, looking for a well-balanced gender representation of participants in any phase of the design or development process. If we want to analyse patterns of mobility e.g., it is important to consider a population with young children, because we will ensure the presence of the challenges related to the mobility of care.

USER-CHI will incorporate the final user into the USER-CHI project in three basic phases: learn, ideate and validation.

The objective in the 1st phase is understanding and quantifying the behaviours and habits of EV users. In the 2nd phase, the goal is to identify and generate new solutions and ideas. Finally, in the 3rd phase, the first concept and a functional prototype will be validated.

Each phase (learn, ideate, and validation) incorporates the voice of the users and has its own tools and methodologies. In all of them, the participation of a balanced number of women and men is promoted and the differences and similarities between them are analysed, using descriptive and segmented data. In the learning phase netnography, field diaries, Delphi questionnaires and surveys are used.[22]

Considering all this, it is expected to have a successful development in the USER-CHI project that contributes to have better EVs systems also for women, considering the use of the EV as a combination of tools and experiences.

---

[22] In netnography, the information obtained came from specialised forums, where most participants are men. A similar situation was found with the delphi methodology. In the field diaries men and women where EVs users and wrote down their own experience. However, in the electric car sector, most of the users and most of the professional involved are men. In this case to apply a gender perspective means: 1) ensure the presence of women; 2) being aware of the unbalanced situation; and 3) planning possible correction measures such as making extended interviews to some of the women participating in the delphi survey and diaries or identified in the forums after the analysis of the results, if such an approach is required. In the survey expects to reach 1.800 answers; questions that are relevant also for women will be selected.

The ideate phase has two main tools: 1) co-creation workshops, where users and professionals are put together to generate solutions and proposals; and 2) personas and scenarios methodologies, that consist in imaging potential users and scenarios of use.

Finally, in the validation phase different tools to assess the acceptance of the product, based on questions about functionality, usability, and satisfaction, as well as tools to know the predisposition to buy or recommend the system are used.

5.2 Output of the research field: Gender & Transport

Moreover, IKEM presented a set of studies and research-related media within the Webinar. As example of a research and network activity the work of the CIVITAS 2020 Initiative in regard of gender and urban mobility planning is further included. Moreover, the link between stereotypes and communication is explained.

CIVITAS 2020 Initiative

The policy recommendations for urban mobility planning from the CIVITAS Initiative[23] aimed at enhancing the capacity of urban mobility planning to respond to the mobility needs of both women and men in a sustainable way. The first recommendation is to improve gender-based statistical data and research. This is needed to understand gender differences in mobility patterns.

The second recommendation is to support women's participation in decision-making processes. In order to take women's needs regarding transport modes into account, they need to be able to express them. Therefore, it is essential to involve women in consultation, transport planning and decision-making processes. Accordingly, two instruments could be promoted: Gender Impact Assessment procedures (GIAs) and Gender Audit Checklists.

The third recommendation is aimed at the improvement of accessibility, safety, and comfort of transportation modes**:** as women walk and use public transportation more than men, the existence of pathways in cities, as well as safe pedestrian crossings, is very important for both safety and comfort. Bus stops and the paths leading to bus stops must also take account of women's needs, and accessibility to transportation vehicles and safety.

Repetition of stereotypes

To close this section, an old commercial for an American car brand was shown. The headline of it states: "Wear a Mustang to match your lipstick", suggesting that the main reason for women to buy a Ford Mustang would be the option to choose it in a colour matching their lipstick's colour.

On this basis the participants have been asked whether the car industry is repeating the 20th century stereotype of women and cars with EVs?

Sexism and marketing are still seen as a relevant issue fostering stereotypes. Therefore, within the USER-CHI communication it is common ground to pay attention to the gender dimension making sure that stereotypes are avoided, and women's visibility is ensured.

---

[23] CIVITAS 2020, Policy Note – Smart choices for cities. Gender Equality and mobility: mind the gap!.

5.3 Gender-neutral planning and managing of e-mobility: Best practices and gaps

The last aspect addressed during the webinar was based on the topic of gender-neutral planning and managing of e-mobility. The section aimed at fostering the exchange of best practices between the project partners, as well as providing new input.

The first question aimed at finding out whether the gender dimension is already considered in the planning process of charging infrastructure for electric vehicles as well as in its managing process of the demo site's administrative staff. If so, it has been discussed at what planning stages they are considered.

The city of Turku stated that its city administration is in an early stage of planning for their e-mobility infrastructure concept. Most of the people involved in the planning process of the city's administration are female. Therefore, the male perspective needs to be considered more in this specific example.

This input leads to the questions of differentiation between the organizational level (involvement of women as employees/researchers) and gender-dimension of planning (considering women's needs). If the involvement of women as employees and researchers automatically leads to the consideration of women's needs in infrastructure planning is something which needs to be further analysed.

The second question addressed was related to whether actions performed by the city administration, as well as companies, exist to motivate women particularly to use e-mobility services. The city of Turku stated prior to the webinar that no such activities are planned by their city's administration so far.

The participants were also asked whether they have ideas for projects regarding the subject "gender and electromobility" they would like to implement either in the short-run or in the long-run. Turku explained that it would be interesting to address different behavioural mobility patterns of women and men during the project, as well as the differences regarding communication needs. Turku plans on taking the different communication needs into account in future campaigns that are part of the USER-CHI actions in Turku.

In conclusion, it can be said that the USER-CHI project partners were highly interested in the topic of gender and e-mobility. However, the topic is still a new approach towards transport planning processes. Therefore, the demo site partners were not all able to share best practices yet.

5.4 Main findings of the Webinar

The measures that were presented throughout different parts of the webinar were related to the production and usage of innovative data, which includes women's needs in regards of transport and e-mobility in particular. Thereby, it is of major importance to provide an equal share of male

and female research participants. However, if this cannot be achieved, it is an option to adopt qualitative research methods in order to provide an equal share towards the female perspective. This can be implemented by offering a larger platform for female research participants in order to enable them to specify their needs and views.

Another aspect is the need to include women in the decision-making processes within the transport sector. This will partially be reached automatically by increasing the share of female employees within the European transport sector.

Moreover, communication strategies should highlight the environmental friendliness of e-mobility, as this is an important aspect of women's choices of transport modes.

However, regarding the safety of women, while using public transportation, which is also linked to e-carsharing and the concept of mobility as a service, there is still the need of improvement.[24]

During the webinar's discussion, Alessandra Barbieri from the City of Florence (FLO) emphasised this by stating that "the safety for women at night needs to be a priority aspect in transport planning." "The goal should be a city for all", she developed further. In relation to the topic of e-mobility potential security issues in regard of electric charging points surveillance systems might be an option.

According to Alessandra Barbieri (FLO) "The increasing activities of women regarding their role in the employment market needs to be taken into account by city planners". Moreover, she affirmed the idea of test-drives for female users by explaining that she made good experiences with pedelec test drives as well. Women should be seen as enablers of sustainable mobility due to their different attitudes towards environmental issues, such as the carbon footprint of transportation.

This remark was also highlighted by Claudia Baumgartner (VMZ) who emphasised that "the flexibility of women regarding multimodal trips is an important key factor for innovations, which could be integrated in Berlin's general mobility strategy."

Felix Nowack (IKEM) further explained that (also) in Berlin about 90% of EV users (e-car sharing not included) were male. This finding is based on results of two user surveys conducted in the "ANS" Project by IKEM in 2017/2018. This shows that electromobility is still at an early stage of its implementation into the mass market, which highlights the need for further efforts in this direction.

Another important aspect, that was mentioned by Chiara Lorenzini (FLO) during the final discussion was the possibility to provide child's safety seats for both e-cars and e-bikes by sharing providers, as this circumstance might be an important factor on why women do not use the services with children.

---

[24] See also: Nicole Kalms, Ross Douglas, Complexity and Contradiction: MaaS and the gender-sensitive lense, The Urban Mobility daily, 2019.

6. Gender equality in research teams

This chapter addresses the subject of gender equality in research teams. At first, the objectives of gender equality in research teams will be analysed. Moreover, the instrument of gender equality plans and its implementation will be described.

The USER-CHI consortium is thereby encouraged to explore their internal management approach towards gender equality in research teams and evaluate what has been achieved so far. If no gender equality plan is in force in their organizations, the project partners are encouraged to examine, whether a gender equality plan could be implemented in the future.

6.1 Objectives of gender equality in research teams

The second pillar of gender aspects in USER-CHI, besides the gender dimension of the project itself, is the field of gender equality in research teams.

Providing gender equality in research teams will catalyse three objectives:

1) *Gender equality in scientific careers*
2) *Gender balance in decision making*
3) *Integration of gender dimension in research content.*[25]

The first objective, gender equality in scientific careers, and the second objective, gender balance in decision-making, will be fostered to create updated evidence as the basis of future policy-making.[26] Therefore, the EU as European policymaker has a great interest in promoting gender-equal research teams working within H2020 research projects, in order to create updated evidence, created by professional and scientific talents from both genders.

Moreover, the third objective, the integration of the gender dimension in research contents, shows that the pillars (gender dimension of projects and gender equality) are linked with each other. This objective is stated on the premises, that gender-equal research teams can

[25] European Commission, EN Horizon 2020 Work Programme 2018-2020, 16. Science with and for Society, (Decision C (2020)6320 of 17 September 2020) p.25.
[26] European Commission, EN Horizon 2020 Work Programme 2018-2020, 16. Science with and for Society, (Decision C (2020)6320 of 17 September 2020) p.25.

automatically consider the gender dimension of research projects, as female and male researchers are both familiar with each of the physical differences of women and men as well as societal particularities of gender.

6.2 Gender Equality Plans

This subchapter describes the toolkit of Gender Equality Plans, with a focus on Gender Equality in Academia and Research (GEAR-tool), established by the European Institute for Gender Equality (EIGE).

The EIGE functions as an autonomous body of the European Union.[27] Its goal is to "contribute to and strengthen the promotion of gender equality, including gender mainstreaming in all EU policies and the resulting national policies, and the fight against discrimination based on sex, as well as to raise EU citizens' awareness of gender equality."[28] The policy areas, which are covered by the EIGE's work range from the digital agenda, to the environment and climate change, to transport amongst many others.[29]

Gender Equality Plans (GEPs), which are sometimes also referred to as Gender Action Plans, can be defined as "strategic and tailored initiatives meant to define the legal framework and the operational conditions to implement gender mainstreaming and put them into practice at the workplace."[30] Moreover, they are "characterised by the identification of a set of strategic actions meant to reach, in a defined length of time, expected results in terms of gender equality."[31]

The European Commission defines a "Gender Equality Plan" as a set of actions, which aim at:

1) *Conducting impact assessment/audits of procedures and practices to identify gender bias;*
2) *Identifying and implementing innovative strategies to correct any bias;*
3) *Setting targets and monitoring progress via indicators.*[32]

---

[27] EIGE, About EIGE, <https://eige.europa.eu/about>, last accessed 22 December2020>.
[28] EIGE, About EIGE, <https://eige.europa.eu/about>, last accessed 22 December2020>.
[29] EIGE, Policy Areas, <https://eige.europa.eu/gender-mainstreaming/policy-areas>, last accessed 22 December2020>.
[30] Directorate General for Internal Policies Policy Department C: Citizens' rights and constitutional women's rights and gender equality, Gender Equality Plans in the private and public sector in the European Union, Study for the FEMM Committee, 2017, p.7.
[31] Directorate General for Internal Policies Policy Department C: Citizens' rights and constitutional women's rights and gender equality, Gender Equality Plans in the private and public sector in the European Union, Study for the FEMM Committee, 2017, p.7.
[32] European Commission, A Reinforced European Research Area Partnership for Excellence and Growth, COM (2012) 392 final, Brussels, 17.7.2012, p. 13.

KEY FINDINGS

- There are a **number of significant barriers** to the achievement of gender balance in top management and non-executive positions.
- The impact of **gender discrimination and stereotyping** should not be underestimated. There are, unfortunately, general pervasive perceptions that either women are not suitable for such positions, would be intimidated by the male dominance in the boardroom or that there are not enough women in the top management and non-executive pipelines to fill the available roles and these perceptions have a distinct impact on the ability of women to get promoted to such positions. This is particularly the case outside of the scientific arena.
- The recruitment process and, in particular, **the interview process often focus on issues which are more difficult for women to show competencies in**, such as, past experience in top management or other non-executive positions or social capital **or which women cannot control**, such as their fit with the culture of the organisation (which is often male dominated).
- The organisational culture is also pivotal in acting as a barrier to the promotion of women. Promotion of women is inhibited by a **lack of transparency in advertising roles, limited information sharing, poor interpersonal relationships, a male-dominated senior management structure and the lack of suitable female role models**.
- The lack of suitable support for women in achieving a balance between work and family life, including the **lack of policies to assist males in sharing the family workload** such as parental and carers leave and the **high cost of childcare**, is a central barrier to women in achieving top management or non-executive board positions.

Figure 1 Key Findings: European Parliament, Policy Department C, Gender Equality Plans in the private and public sectors in the EU[33]

It needs to be highlighted, that the scope of gender equality plans can differ according to the type of organisation they are implemented within. Recently the intersectionality of gender bias has been acknowledged in regard with other inequality grounds such as disability, age, sexual orientation, religion, or ethnicity.[34]

Different phases for the implementation of gender equality plans are:

[33] Available at: https://www.europarl.europa.eu/RegData/etudes/STUD/2017/583139/IPOL_STU(2017)583139_EN.pdf

[34] EIGE, Gender Equality in Academia and Research.

> "1) An analysis phase, in which sex-disaggregated data is collected; procedures, processes and practices are critically assessed with a view to detect gender inequalities and gender bias;
>
> 2) A planning phase, in which objectives are defined, targets are set, actions and measures to remedy the identified problems are decided, resources and responsibilities are attributed, and timelines are agreed upon;
>
> 3) An implementation phase, in which activities are implemented and outreach efforts are undertaken to gradually expand the network of stakeholders;
>
> 4) A monitoring phase, in which the process and the progress are regularly followed through and assessed. Findings from the monitoring exercise(s) allow to adjust and to improve interventions, so that their results can be optimised."[35]

Gender Equality Plans (or Gender Action plans) can be implemented in the private and business sector.[36] The GEAR tool, which is presented further is designed especially for academia and research institutions. However, the most basic definition of phases for implementing GEPs (analysis phase, planning phase, implementation phase, monitoring phase) is useful as state-of-the-art practice for most GEPs in different working organisations irrespective of their specific scope.[37]

[35] EIGE, Gender Equality in Academia and Research, <https://eige.europa.eu/gender-mainstreaming/toolkits/gear/what-gender-equality-plan-gep>, last accessed 22 December2020.
[36] Directorate General for Internal Policies Policy Department C: Citizens' rights and constitutional women's rights and gender equality, Gender Equality Plans in the private and public sector in the European Union, Study for the FEMM Committee, 2017, p.7.
[37] Directorate General for Internal Policies Policy Department C: Citizens' rights and constitutional women's rights and gender equality, Gender Equality Plans in the private and public sector in the European Union, Study for the FEMM Committee, 2017, p.12.

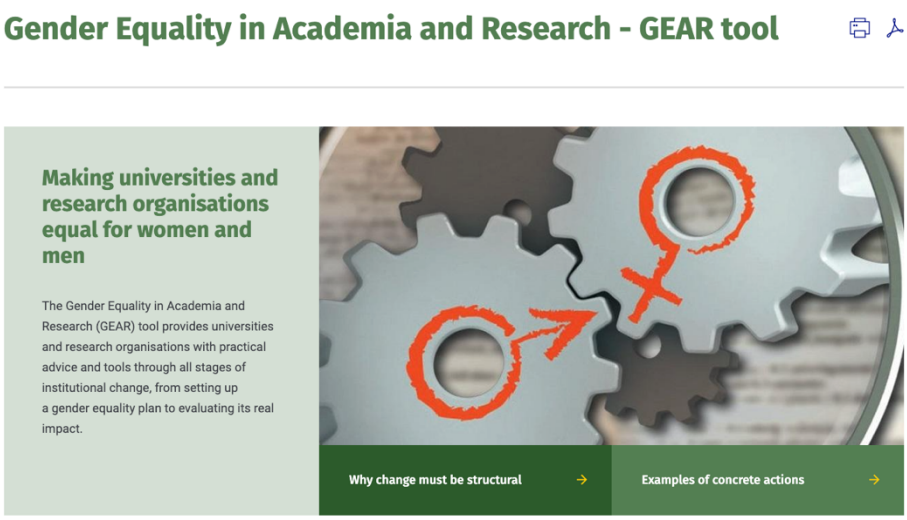

Figure 2 GEAR Tool. Source: European Institute for Gender Equality [38]

The GEAR Step-by-Step Guide describes the following approach towards establishing a Gender Equality Plan:

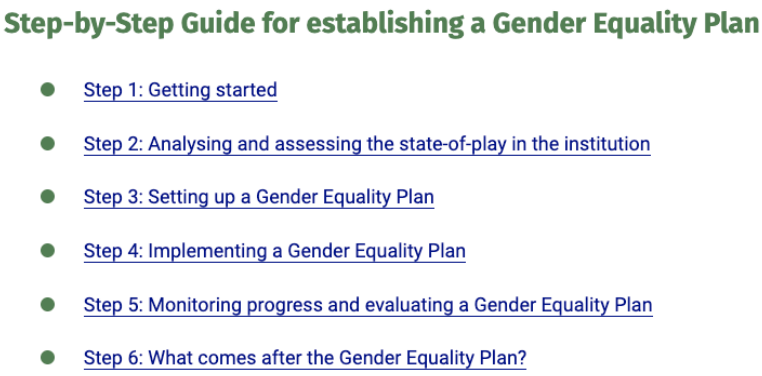

Figure 3 The GEAR Step-by-step Guide[39]

For further information, the project partners are encouraged to consult the GEAR tool guide, which describes the different implementation steps in detail. In addition, useful examples on lessons learned and gender equality plans already implemented by research organisations or universities are offered by the GEAR Step-by-Step Guide.[40]

---

[38] Available at: https://eige.europa.eu/gender-mainstreaming/toolkits/gear
[39] Available at: https://eige.europa.eu/gender-mainstreaming/toolkits/gear/step-step-guide
[40] EIGE, Gender Equality in Academia and Research – GEAR tool. 2016, (available at: https://eige.europa.eu/gender-mainstreaming/toolkits/gear/step-step-guide, last accessed: 18.01.2020.)

7. Conclusions

This report provides an overview of the legal foundation of ethics monitoring. Moreover, it describes fundamental rules for ethical research conduct and includes the guidelines for the ethics monitoring within the USER-CHI project. The consortium is urged to follow the procedure on ethical issue self-assessment and the ethics issue memo template. Accordingly, the consortium partners have to be aware of the ethical dimension of USER-CHI and communicate ethical issues if they arise to find solutions in collaboration with the Ethics Advisor. The Ethics Advisor may use the interdisciplinary strength of the consortium to find suitable solutions for ethical issues.

Furthermore, the report includes a description of RRI and summarises the project's gender dimension regarding the first project results from WP1 "Analysis for user needs and patterns for requirement definitions." The gendered preferences towards the location of charging infrastructure, as well as the family-friendliness of charging infrastructure needs to be considered for administrative and technical decisions undertaken in USER-CHI.

In addition, the report presents the outcome and summary of the Webinar "Diversity in Transport". The outcome of the Webinar in regard to the gender dimension of USER-CHI needs to be considered in the research tasks as well. This could be achieved by e.g., considering women's needs, prevent gender stereotypes in public outreach and motivate women to use e-mobility to overcome existing gender gaps in e-mobility usage.

Moreover, project partners involved in USER-CHI are invited to review their internal status on gender equality in their research teams. If suitable, the consortium partners are encouraged to implement gender equality tools, such as the GEAR tool. Project partners are welcomed to share their expertise on the topic of Gender Equality Plans, or the GEAR tool, in case they have already gained experience. Even if none of the project partners has implemented Gender Equality Plans yet, the topic could be potentially further addressed in one of the upcoming consortium meetings in order to assist the project partners to take first steps in the regard.

Subsequently, ethics monitoring is an ongoing process for the duration of the USER-CHI project until M48. Therefore, the Ethics Advisor will be constantly available as a contact person for the project partners. In case that project partners detect ethical issues within their research tasks and use the ethics issue memo template, the Ethics Advisor will document the issue and solve it collaboratively.

The work of the Ethics Advisor addressed in WP11 will also be supported by the establishment of an ethics committee in WP12, as it will assist the USER-CHI cities during the implementation of the pilot sites in regard to ethical issues. Further information on the function and goals of the ethics committee is addressed in D11.5.

Acronyms

Acronym	Meaning
AMB	Metropolitan Region Barcelona (USER-CHI project partner)
BER	Berlin
BUD	City of Budapest (USER-CHI project partner)
D	Deliverable
DSI	Digital System Integrator (USER-CHI project partner)
e-carsharing	Electric carsharing
e-mobility	Electronic mobility
EC	European Commission
EIGE	European Institute for Gender Equality
EUR	EUROCITIES (USER-CHI project partner)
EV	Electric vehicles
FLO	City of Florence (USER-CHI project partner)
GEAR	Gender Equality in Academia and Research
GEP	Gender Equality Plan
GET	Gender Equality Training
GIAs	Gender Impact Assessment procedures
IBV	Instituto de Biomecanica de Valencia (USER-CHI project partner)
IKEM	Institut für Klimaschutz, Energie und Mobilität (USER-CHI project partner)
MaaS	Mobility-as-a-service
MUR	City of Murcia (USER-CHI project partner)
RRI	Responsible Research and Innovation
TUR	City of Turku (USER-CHI project partner)
USER-CHI	Project Title: innovative solution for USER centric CHarging Infrastructure
VMZ	VMZ Berlin Betreibergesellschaft mbH (USER-CHI project partner)
WP	Work Package

References

Advisory Group for Gender for a better integration of the gender dimension in the Horizon 2020 Work Program 2018-2020, Position paper, 2016, <https://ec.europa.eu/transparency/regexpert/index.cfm?do=groupDetail.groupDetailDoc&id=28824&no=1>, last accessed 22 December2020.

ANS Project - Analyse der Nachfragereaktionen und der Stellplatzbelegung bei Variation des Preismodells für die Nutzung von Ladeinfrastruktur im Berliner Modell, IKEM, (in press).

Charter of Fundamental Rights off The European Union - 2012/C 326/02.

CIVITAS 2020, Policy Note – Smart choices for cities. Gender Equality and mobility: mind the gap!, <https://civitas.eu/sites/default/files/civ_pol-an2_m_web.pdf> last accessed 22 December2020>, last accessed 22 December2020.

Convention for the Protection of Human Rights and Fundamental Freedoms as amended by Protocols No. 11 and No. 14 – ETS No.005.

Directorate General for Internal Policies Policy Department C: Citizens' rights and constitutional women's rights and gender equality, Gender Equality Plans in the private and public sector in the European Union, Study for the FEMM Committee, 2017, p.7 <https://www.europarl.europa.eu/RegData/etudes/STUD/2017/583139/IPOL_STU(2017)583139_EN.pdf>, last accessed 22 December2020.

EIGE, About EIGE, <https://eige.europa.eu/about>, last accessed 22 December2020.

EIGE, Gender Equality in Academia and Research, <https://eige.europa.eu/gender-mainstreaming/toolkits/gear/what-gender-equality-plan-gep>, last accessed 22 December2020.

EIGE, Gender Equality in Academia and Research, <https://eige.europa.eu/gender-mainstreaming/toolkits/gear/action-toolbox> last accessed 22 December2020.

EIGE, Gender Equality in Academia and Research, Step 1: Getting started, <https://eige.europa.eu/gender-mainstreaming/toolkits/gear/legislative-policy-background.> last accessed 22 December2020.

EIGE, Gender Equality Training, Gender Mainstreaming Toolkit, 2016, p.4, <https://eige.europa.eu/publications/gender-equality-training-gender-mainstreaming-toolkit>, last accessed 22 December2020.

EIGE, Gender Equality Training, How to: guiding principles for commissioning authorities, <https://eige.europa.eu/gender-mainstreaming/toolkits/gender-equality-training/how-guiding-principles-commissioning-authorities>, last accessed 22 December2020.

EIGE, Gender Equality Training, Who is the guide for?, <https://eige.europa.eu/gender-mainstreaming/toolkits/gender-equality-training/who-guide>, last accessed 22 December2020.

EIGE, Our work, <https://eige.europa.eu/about/our-work>, last accessed 22 December2020.

EIGE, Policy Areas, <https://eige.europa.eu/gender-mainstreaming/policy-areas>, last accessed 22 December2020.

EIGE, What is Gender Equality Training (GET), <https://eige.europa.eu/gender-mainstreaming/toolkits/gender-equality-training/what-gender-equality-training-get.>, last accessed 22 December2020.

Electromobility is female, Ostfalia Hochschule für angewandte Wissenschaften, Research Project, Final Report (in German) available at <https://www.ostfalia.de/cms/de/ifvm/projekte/die-elektromobilitaet-ist-weiblich/>, last accessed 22 December2020.

European Commission "Women in Transport: EU platform for change", <https://ec.europa.eu/transport/themes/social/women-transport-eu-platform-change_en.>, last accessed 22 December2020.

European Commission, A Reinforced European Research Area Partnership for Excellence and Growth, COM (2012) 392 final, Brussels, 17.7.2012, p. 13, <https://eige.europa.eu/sites/default/files/era-communication_en_2012.pdf>, last accessed 22 December2020.

European Commission, EN Horizon 2020 Work Programme 2018-2020, 16. Science with and for Society, (Decision C (2020)6320 of 17 September 2020) p.25, <https://ec.europa.eu/research/participants/data/ref/h2020/wp/2018-2020/main/h2020-wp1820-swfs_en.pdf.>, last accessed 22 December2020.

European Commission, Ethics for researchers – Facilitating Research Excellence in FP7, Brussels 2013, p.24.

European Commission, H2020 – Responsible Research and Innovation. <https://ec.europa.eu/programmes/horizon2020/en/h2020-section/responsible-research-innovation.>, last accessed 22 December2020.

European Commission, Women in Transport, <https://ec.europa.eu/transport/sites/transport/files/images/women-in-transport-infographic.jpg>, last accessed 22 December2020>, last accessed 22 December2020.

GENDER-NET Analysis Report, Plans and initiatives in selected research institutions aiming to stimulate gender equality and enact structural change, p. 59, <https://eige.europa.eu/sites/default/files/gender-net_d2-6_-_plans_and_initiatives_in_selected_research_institutions.pdf>, last accessed 22 December2020.

Kawgan-Kagan, I., Early adopters of carsharing with and without BEVs with respect to gender preferences, Eur. Transp. Res. Rev., 2015.

JRC (European Commission) Science for Policy Report – Women in European transport with a focus on research and innovation: An overview of women's issues in transport based on the Transport Research and Innovation Monitoring and Information System (TRIMIS), 2019 < https://op.europa.eu/en/publication-detail/-/publication/ee562f6e-cec7-11e9-992f-

01aa75ed71a1/language-en/format-PDF/source-119908128>, last accessed 22 December2020.

Giménez, J., López, A., Soriano, C., Seidel, C., USER-CHI Project Report D.1.1 - User requirements for USER-CHI solutions, 2020.

Saunders, K., The real reasons why mobility is not women friendly, The Urban Mobility Daily, 2019, <https://urbanmobilitydaily.com/the-real-reason-why-mobility-is-not-women-friendly/.>, last accessed 22 December2020.

Kalms, N,. Douglas, R., Complexity and Contradiction: MaaS and the gender-sensitive lense, The Urban Mobility daily, 2019, <https://urbanmobilitydaily.com/complexity-and-contradiction-maas-and-the-gender-sensitive-lens/>, last accessed 22 December2020.

Berkely, N., Jarvis, D., Jones, A., Analysing the take up of battery electric vehicles: An investigation amongst drivers in the UK., Transportation and Research – Part D: Transport and Environment (2018).

Regulation (EU) No 1291/2013 of the European Parliament and the Council of 11 December 2013 establishing Horizon 2020 - the Framework Programme for Research and Innovation (2014-2020) and repealing Decision No 1982/2006/EC.

Annexes

Annex I: Interview – Human-centred design and the gender perspective in USER-CHI (IBV, EUR) May 7th 2020

Another key aspect addressed was brought to the participants in an interview that Matilde Chinellato (EUR) carried out with Ricard Barberà-Guillem (IBV) about the approach of human-centred design and how it contributes to the gender dimension in general, and particularly to USER-CHI.

Why is human-centred design so important?

First, what do we mean by human-centred or user-centred design? It means to put the person in the middle of the design and development process. And it means also that the user or consumer has to be seen as a source of relevant information for the design and development of the product. That the (potential) user is the one who better knows their needs, requirements, or preferences for the product. So, in a human-centred design our users become the desired and required collaborators of the development process, from the initial requirement definition until the final concept and prototype validation.
If we do not focus on the needs and expectation of the user, we will face potential undesired situations. Let us see two examples. Some years ago, IBV participated in the development of a communication system for people with cerebral palsy. There were important differences between the final users desires and the opinion of their parents and care professionals. User's explained "If I'm going to use a communicator, I want one with bright colours and a futuristic shape, so I can be proud of it!" On the contrary, parents and professionals wanted the system to be very discreet, almost invisible, to be unnoticeable.

The substitution of a gas appliance by ceramic glass hobs in the kitchen, if we think in technology for elderly people, means gaining safety -avoiding the use of gas- but also may become a problem because touch controls are not ease of use, nor intuitive, especially if we add age-related tremor problems.
In this case, from a gender perspective, it is almost certain that we will find an old lady living a nightmare when she tries to cook. Because women are normally, no matter the age, the ones still cooking at home.
In summary, human-centred design means better products and more satisfied and happier clients.

By definition, human centred design should be women inclusive and should have a gender perspective, is that right?

Yes, at least it should. In human centred design we put the person in the middle of the design and development process. The problem is that person is always as default a man.

It is not only that the development of innovations and technologies misses business opportunities because of failing to understand sex or gender factors. The critical point is that sometimes this may cause health problems for women. For instance, if we try to use the men symptoms of a heart attack to detect this situation in women's bodies.

Traditionally in the automotive sector human centred design has been overshadowed by technology-led innovation. The evolution of vehicles from past to present can be explained based on the degree of "intelligence" transferred to the car if we think in autonomous vehicles. But also, by other innovation drivers, such as power efficiency, new materials, safety mechanisms and of course, the change in the powering energy.

And, although users have gained more weight in the development processes, so far, the cars in the market are not crash tested with women dummies nor have safety belts for pregnant women.

Questions or problems important for women are not considered properly because they are out of the "standard" or "neutral" user. Therefore, as a consequence of that, problems or situations important for women are not well analysed.

We need to think twice meaning that the project team has to answer continuously the question: is this information, data, or proposed design relevant also for women? Or only for men?

There are things that we can do systematically: analysing results differentiating by gender, looking for a well-balanced gender representation of participants in any phase of the design or development process; and ensuring that problems or situations mostly involving women are put into consideration and are not avoided because they are not in the core of an "hypothetical neutral user". If we want to analyse patterns of mobility, it is important to introduce population with young children, because we will ensure the presence of the challenges related to the mobility of care.

Applying the gender perspective means being a tourist in your own town or using feminist wording to wear gender-sensitive glasses for gaining perspective of "what has always been".

So, according to what you are saying there is not something like "gender neutral" or valid "design for all"?

"Gender neutral" is like "design for all", two fake news. With the idea of solving accessibility problems, we could substitute stairs by ramps! And we will discover that some people who manage properly stairs are not able to walk slopes. In this case the solution could be to have both options in the same point, stairs, and ramps. Is a traffic light a design for all product? Let's consider colour blind people and then we will realise that it is not! That's one of the reasons to add sounds to traffic lights in pedestrian crossing. One idea in the design for all, "design for most". We will always leave someone out. But as designers, developers, manufacturers, or policy makers we should quantify this number and be able to limit it by finding ways to compensate this lack of accessibility. But women are half or the population. However, they are treated as an outlier sample in a statistical analysis. Let's talk about music! Female pianists have more serious work-related diseases than men. Why? Because 'no-man' has ever considered that women have smaller hands. Let us change the topic. Industrial cyborg-skeletons? A sort of orthotic robots used in industrial workplaces implying great physical efforts. They are not comfortable or even safe for women. Why? Maybe the data sets used in their design were based on stocky American male

marines? Did not one male person working on the design notice that women have breasts and wider waists? It is not so difficult! To sum up, gender neutral means, otherwise specified, men. Against fake news, open eyes, critical approach, and gender differentiated data!

How will a user-centred methodology be integrated into the USER-CHI project?

We incorporate the final user into the USER-CHI project in three basic phases: learn, ideate and validation.

In the first phase learn the objective is understanding and quantifying the behaviours and habits of users answering questions like: How does people use the electric cars? Which are the main challenges, obstacles or barriers for people accessing to electric cars? Which are the facilitators for a widespread implementation of electric cars?

Second phase, ideate, is the creative part of the process where we identify and generate new solutions and ideas: Construction of a mobile application containing the required information by users, development of a charging point that is easy to use by men and women, development of a campaign to promote the use of electric cars that is women inclusive. And finally, it comes the validation first the concept and then a functional prototype: Does what we have developed cover the needs and requirements of the users? Are there any elements or aspects we need to incorporate or improve to have a better product according to the preferences or the expectations of the users?

Keep in mind that the user is a partner in the development of the product in the project that's the reason we need them in the whole process, learn, ideate and validate.

How do we ensure that the methodology incorporates a gender perspective?

The three phases to incorporate the voice of the users are learn, ideate and validation. Each phase has its own tools and methodologies. In all of them we will promote the participation of balanced number of women and men and analyse the differences and similarities between men and women, using descriptive and segmented data. In the learn phase we are using netnography, field diaries, delphi and surveys.

From the netnography (already made!) we wanted to obtain a first approach to the electrical vehicle, the experience of users, desires, needs. In this case the information obtained comes from specialised forums, where the majority of participants are men. So, in this case we have to be aware that this is the situation.

We have a similar situation with the delphi methodology where most of the answers from professionals have come from men, and in the field diaries where users of electrical vehicles, men and women, write down their own experience with their use. Including planning the route to charge the car, potential problems of maintenance, lack of autonomy.

However, that is, so far, a reality of the electric car sector, most of the users and most of the professional involved are men. In this case to apply a gender perspective means: first ensure the presence of women, second being aware of the unbalanced situation, third planning possible correction measures such as making extended interviews to some of the women participating in

the delphi survey and diaries or identified in the forums after the analysis of the results, if such an approach is required.

In the survey we expect to reach 1.800 answers we will select questions that are relevant also for women. For instance, we know from mobility studies that the feeling of safety or the lack of it is very relevant for women. Therefore, we should know how to increase the safety perception in the re-charging points of the electric vehicles.

In the ideate phase we have two main tools the co-creation workshops where users and professionals are put together to generate solutions and proposals. Here, in addition to force a gender-balanced representation, we will moderate the workshop enhancing the participation of women and highlighting aspects we know from bibliography that may be relevant for women.

The personas and scenarios methodologies consist in imaging potential users and scenarios of use. Here the gender perspective is applied in the definition of them ensuring that are significant for women, for instance some of them displacements are related to the mobility of care or some safety issues are introduced.

Finally, in the validation we will use different tools to assess the acceptance of the product, based on questions about functionality, usability, and satisfaction, as well as tools to know the predisposition to buy or recommend the system.

The last tool we will use is the think aloud / interview where a combination of spontaneous thinking and directed questions is used to know the opinion of the product of the users.

Taking all these into account, we expect to help to have a successful development in the user-chi project that contributes to have better electric vehicles systems also for women, considering the use of the electrical vehicle as a combination of tools and experiences.

Annex II: Ethics Issue – Memo Template

The Ethics Issue Memo Template will be separately forwarded to the project partners of the consortium. Moreover, the consortium will be informed about the use and the goal of the Template, which is the basis for communication and documentation of ethical issues detected by the project partners and forwarded to the Ethics Advisor as explained in chapter 3.3.

Ethics Issue – Memo Template

This Template is used by USER-CHI project partners in order to communicate and document ethical issues they detect during their ethical issue self-assessment procedures (D11.1, section 3.3.1).

The USER-CHI project partners will find suitable solutions on how to deal with the ethical issues in collaboration with the Ethics Advisor.

Date:	
Work Package:	
Specific Task:	
Project partner:	
Site:	
Contact of project partner who has identified the ethical issue:	
Specific ethics issue	

Relevant legal aspects (note: legal aspects might not be applicable for the ethical issue):	
Proposed Solution or mitigation measures:	
Ethics Advisor assessment:	
Reasoning behind the Ethics Advisor assessment:	
Date of decision:	