



D2.2 Methodology and conceptual framework.

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Revision History

Version	Date	Author	Document history/approvals
0.1	01/11/2019	Recio, Lucía (EUT)	Document structure circulated to partners
0.2	02/15/2019	García Jiménez, M ^a Elena (AITEC) Hervás Peralta, Miguel (AITEC) Molero Prieto, Gemma (AITEC) Poveda Reyes, Sara (AITEC) Santarremigia Rosaleny, Francisco (AITEC)	Draft version to be reviewed by all the partners
1.0	06/20/2019	García Jiménez, M ^a Elena (AITEC) Hervás Peralta, Miguel (AITEC) Molero Prieto, Gemma (AITEC) Poveda Reyes, Sara (AITEC) Santarremigia Rosaleny, Francisco (AITEC) Gorrini, Andrea (SYS) Rezaallah, Anahita (SYS) Leva, Maria Chiara (TU Dublin) Saleh, Wafaa (ENU) Ababio-Donkor, Augustus (ENU) Hail, Yvonne (STIR) McQuaid, Ronald (STIR) Millenkovich, Milos (FTTE)	Second draft version reviewed by all the partners
1.0	06/28/2019	AITEC	Final complete version and validation
1.0	06/28/2019	Project Coordinator	Submission
2.0	19/03/2020	García Jiménez, M ^a Elena (AITEC) Hervás Peralta, Miguel (AITEC) Molero Prieto, Gemma (AITEC) Poveda Reyes, Sara (AITEC) Santarremigia Rosaleny, Francisco (AITEC) Gorrini, Andrea (SYS) Rezaallah, Anahita (SYS) Leva, Maria Chiara (TU Dublin) Saleh, Wafaa (ENU) Ababio-Donkor, Augustus (ENU) Hail, Yvonne (STIR) McQuaid, Ronald (STIR) Millenkovich, Milos (FTTE)	Deliverable updated <ul style="list-style-type: none"> ▪ Introduction of the factor and regression analysis in the methodology previous to the Bayesian Networks analysis to improve the results (Fig. 5 and 8). ▪ Clarification between the interaction of the Polyhedral individual and the data analysis when mixing data collection tools linked and not linked to profiles (Figure 11).



			More level of concretion in the outputs of the methodology: Toolbox development (Section 5).
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Executive Summary

This document constitutes Deliverable D2.2 ‘Methodology and conceptual framework’ in the framework of the project titled ‘Revealing fair and actionable knowledge from data to support women’s inclusion in transport systems.’ (Project Acronym: DIAMOND; Grant Agreement No 824326).

The Deliverable D2.2 **aims to** define a methodology and a conceptual framework for the overall project by following the next three different tasks according with the DoA:

- Task 2.2 ‘DIAMOND **fairness concept definition**’ produce a definition of fairness to assess the level of fair inclusion of a transport operator and take action to generate more inclusive transport system. A detailed definition of fairness for each use case will be produced.
- Task 2.3 ‘DIAMOND **methodology design and development**’. This is a very important task due to it clearly define the methodology followed in the project to assess and favour women inclusion in the transport sector. A good definition of the methodology, including the data collection, data analysis, and the development of the Toolbox, will be crucial to lead to the results expected in the definition of the use-cases.
- Task 2.4 ‘Definition of the **conceptual framework**’ will set a uniform vision for the following WPs to accomplish the objectives of each use-case.

The deliverable introduces the goal per each of the use cases addressed by the project based on the needs identified through a study of the state of the art. These goals were already presented in the D2.1.

After a deep analysis to apply the **fairness concept** to the transport system, a bottom-up (through the Focus group performed at Dublin, Paris and Warsaw) and an up-bottom (through literature review) approach has been defined to achieve a hierarchical model about the Fairness characteristics (FCs) or relevant criteria for women with potential influence on each of the goals defined per each use case.

The bottom-up and top down approach converges in a 3 level hierarchized FCs which will allow the interdisciplinary panel to generate Fairness Measures (FMs) for the toolbox and the guidelines.

The AHP (Analytic Hierarchy Process) for qualitative characteristics/criteria and BNs (Bayesian networks) for quantitative characteristics/criteria are the 2 mathematical methodologies used to establish the hierarchy, and a variation of the Rasch model (Section 4.4) is used for the final fairness assessment of the results in order to validate that not only the criteria have the fairness concept



inside established in the bottom-up approach (gathering valuable information directly from women by Focus groups), but also that the fairness concept has not been lost along the process.

The **results** of this deliverable are a conceptual framework and a methodology, including the impact assessment and the validation of the toolbox and the Decision Support System (DSS), where all the project development will be obligated to be framed in.

These results are **addressed to** researchers in the field of gender applied to the transport, to Public Authorities, and they will be the base for further developments in the next work packages (WPs) of the project:

- WP3 Data Collection;
- WP4 Interdisciplinary Model Creation;
- WP5 DIAMOND Toolbox Development;
- WP6 DIAMOND Testing and Validation;
- WP8 Ethical, Legal and Data Management.

