WEBINAR

FAIRNESS FOR WOMEN AS USERS OF SURFACE TRANSPORT SERVICES

Challenges and good practice

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Prepared by the Diamond consortium

DIAMOND

#DiamondH2020

www.diamond-project.eu

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The DIAMOND Project

Validation in four specific public and private transport sector scenarios

1. Railways and public multimodal transport

Research study on stations safety, accessibility and capacity to address basic mobility needs from a gender perspective. Validation of the self-diagnose and DSS tool for infrastructure and transport service planning.

2. Autonomous vehicles

Analysis of the comfort and perception of safety of automated vehicles to adapt the design and functionality of AV.

3. Vehicle (bike) sharing

Evidence of needs and requirements in the planning of vehicle sharing services addressing gender. Validation and diagnosis of DIAMOND's Decision Support System for vehicles points and fleet distribution and location planning.

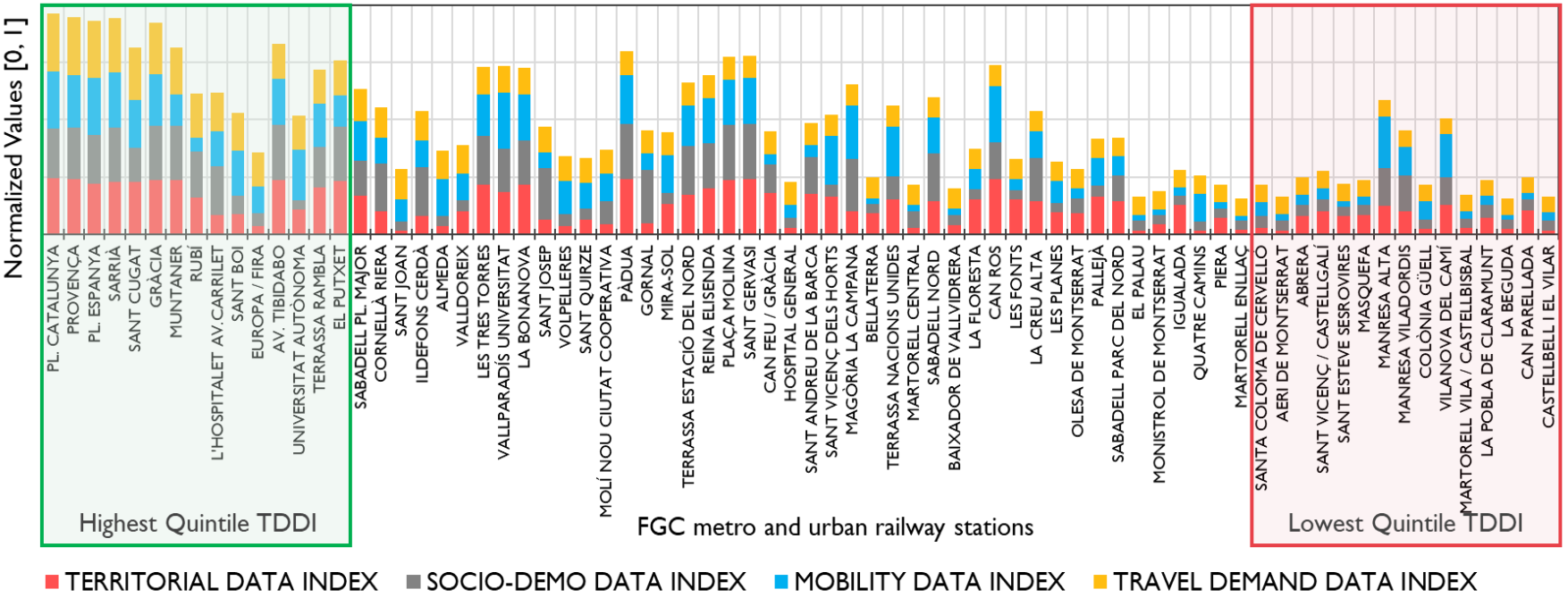
4. Corporate social responsibility and employment

Research on women's participation in the transport and logistics sectors crossed with concrete job positions and new opportunities to translate this understanding into concrete better gender-oriented job descriptions and use of adapted candidate search processes.

STRUCTURED DATA AND OBSERVATIONS CHECKLISTS
example of data from use case I

Achievements: structured data for station sleection and observations checklists

Structured (open and proprietary) data (Use Case I)



- Total number stations (No.82 stations), data validation (No.74 stations);
- At least two highest or lowest quintiles among territorial, socio-demographic & mobility data (No. 29 stations);
- Short list of No.10 heterogenous and non-adjacent stations.

SURROUNDING AREA (400 m)		Q1	Q5
LEVEL 1	LEVEL 2	M	M
Accessibility of the Service	Service Availability & Efficiency	0.600	0.300
Design of the Infrastructure	Universal Design	0.966	0.824
	Furniture & Facilities	0.737	0.611
Safety and Security	Harassment and Pickpocketing	0.688	0.597

STATION - CONCOURSE LEVEL		Q1	Q5
LEVEL 1	LEVEL 2	M	M
Accessibility of the Service	Service Availability & Efficiency	0.600	0.750
	Travel and Way finding Information Provision	0.667	0.483
Accessibility of the Service	Ticketing Options & Fares	0.200	0.000
Design of the Infrastructure	Universal Design	0.970	1.000
	Cleanliness & Maintenance	0.500	0.563
	Furniture & Facilities	0.364	0.391
Safety and Security	Harassment and Pickpocketing	0.767	0.625

USE CASE I CASE STUDY:
User satisfaction survey on fairness for a Northern European provider, a Eastern European service provider and a Southern European rail service provider

USE CASE I: RESPONDENTS' DEMOGRAPHICS

Northern European RAIL use case 336 transport users (163 males, 161 females, 3 nonbinary, and 9 prefer not to say) whose ages ranged from 18 years to above 75 years were included.

Southern European RAIL use case 425 users of FGC were collected on a face to face sample data collection before COVID-19 closure (147 males, 268 female, 10 non binary), Ages of responders from 18 to 75 (only 1% over 65 years of age)

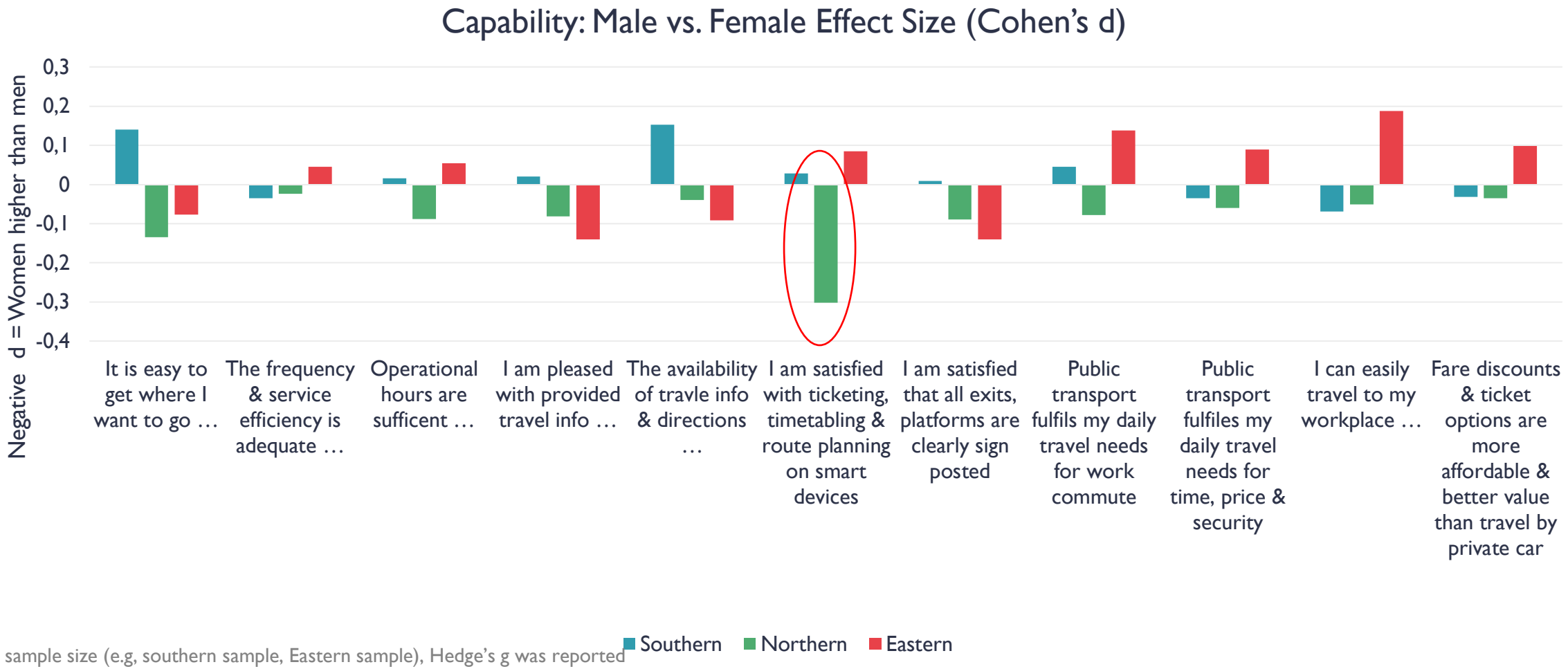
Eastern European Rail use case A total of 472 transport users (196 males, 237 females, 6 nonbinary, 1 transsexual male, 32 Prefer not to say) whose ages ranged from 18 years to under 75 years

Northern European RAIL sample (Ireland): White (87.2%), single (39.8%), heterosexual (85.6%). No dependents (69.8%), and did not travel with dependents on weekly basis (87.8%),

Southern European RAIL sample(Spain): White (86.9%), married or in stable heterosexual relationship (45.4%), heterosexual (91.8%). No dependents (75.3%), and did not travel with dependents on weekly basis (91.5%),

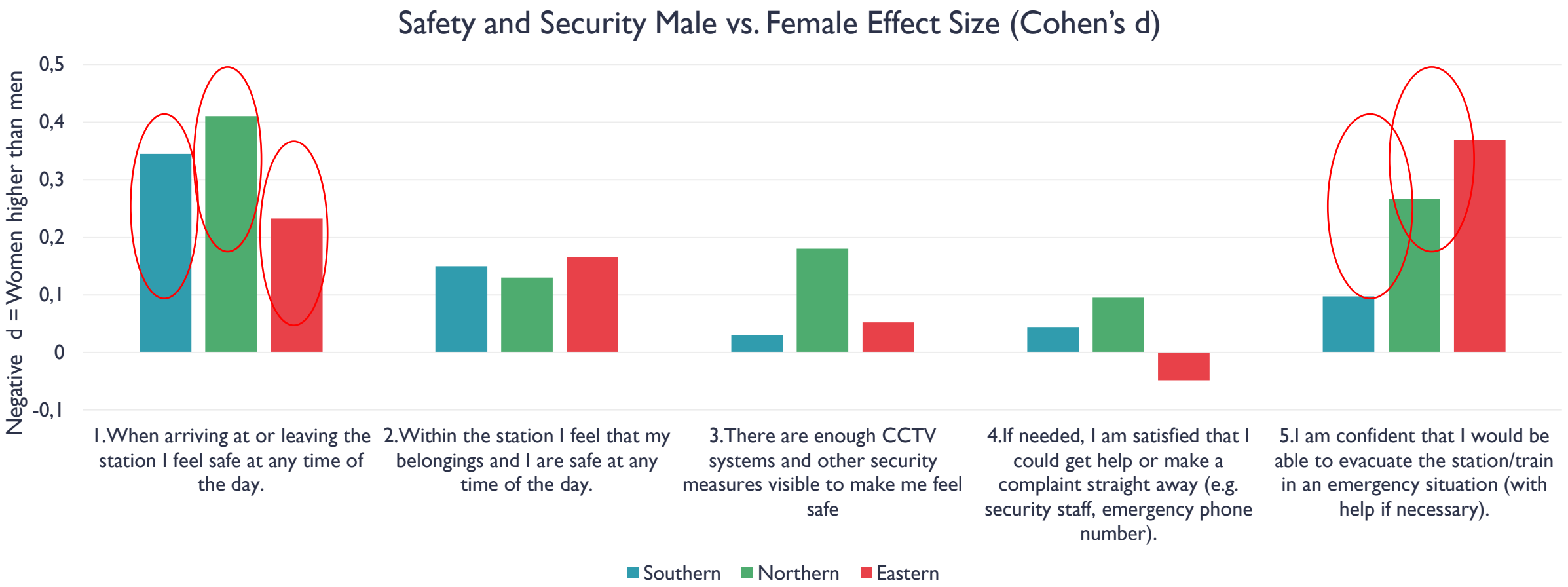
Eastern European RAIL sample (Poland): White (89.4%), married or in stable heterosexual relationship (49.6%), heterosexual (76.9%). No dependents (68.2%), and did not travel with dependents on weekly basis (83.5%).

USE CASE I: CAPABILITY of meeting required needs



For unequal sample size (e.g, southern sample, Eastern sample), Hedge's g was reported

USE CASE I: Safety and Security



For unequal sample size (e.g, southern sample, Eastern sample), Hedge's g was reported

SPECIFIC PROFILES ANALYSIS:

- **Chronic illness**

NR: no significant difference between chronic and non-chronic respondents across themes.

SR: SIGNIFICANT DIFFERENCES: respondents with chronic illness were less satisfied with provided travel information, as well as feeling less comfortable at stations and in carriages (e.g., temperature, ventilation). There was also significant difference for safety and security issues (feeling safe, belongings, being able to evacuate).

ER: SIGNIFICANT DIFFERENCE: Respondents with chronic illness were less satisfied with accessibility to stations

- **Dependents (living with dependents and travelling with dependents)**

NR: SIGNIFICANT DIFFERENCES respondents living with dependents and travelling with dependents were less satisfied across several statements within the three themes.

SR: SIGNIFICANT DIFFERENCE between respondents travelling with dependents vs. not regarding satisfaction with announcements.

ER: SIGNIFICANT DIFFERENCES: People travelling with dependents and living with dependents were less satisfied across a number of statements regarding signage, travel, value for money, and design.

- **Discriminated against for using/working in transport for your appearance**

All 3 Countries: SIGNFICANT DIFFERENCES between respondents reporting previous discrimination for their appearance across all categories. Nonbinary respondents reporting greater discrimination.

Analysis of Focus Groups and Interviews: Thematic Analysis

Phase 1: Characteristics of the interviews and focus groups collected

Category	Group	Subcategory	No. of participants
Individual interviews of residents in Ireland users or non users of rail/ surface transport	I1	passengers aged 25-34	7
	I2	passengers aged 35-44	11
	I3	Passengers aged 45-54	2
	I4	passengers 75 aged years or more	2
Residents of Warsaw and its agglomeration using Public Transport	F1	passengers aged 18-25	7
	F2	passengers aged 26-35	7
	F3	passengers aged 36-45	8
	F4	passengers aged 46 and over	7
Focus group collection of residents in Spain	F1	passengers 35-44	7
	F2	passengers aged 45-54	1

Phase 2.1: NE Emerging Themes

Interval of operational hours.

Convenience of travel system & process

Accessibility of modes; Design or layout of transport mode & Exit time and boarding of service.

Transport network merge to locales

Available staff at ticket office.

Fare affordability and Exclusion.

Boarding measures or protocols

security or staff personnel; Security & Garda Response Time plus Security relational skills

Safety of Personal Belongings

Noise Control

Sense of place

Social Image & perception of public transport

Surveillance and emergency alert systems

- Convenience of travel system & process noted by demographic of gender - male and female; travelling and not travelling with a dependent; not living with a dependent and living with dependents under 5 years
- Female participants; Sense of place & Transport network merge to other form of local transports
- Living with dependents - Interval of operational hours; Travelling with dependents - Garda, security or staff personnel

Development of a tool for Fairness Maturity Model evaluation

Fairness Maturity Model

Fairness Maturity model declined according to three main themes:

Capacity to meet required needs (ability to travel in an appropriately designed transport system; meeting basic expectations and being environmentally sound, or ability to work for a role that is suitable and remunerated appropriately); **Accessible** (ability to access activities and services that people have reason to value; accessible to all groups also in terms of design and comfort provided, e.g. those with children, and in terms of fares and costs for those with lower income, including distribution of costs and benefits, or ability to work in a role that is also ergonomically suitable for different types of workers); **Safe and Secure** (i.e. ability to travel safely and securely for all type of users (e.g. income, ethnicity, age, those with children etc., or as the ability to work in all roles without fear for one's personal safety)

Observable variables:
Observation of spatial and objective availability of information such as punctuality of service, accessibility of station and carriages, level of intermodality available etc. (i.e.Measured as % of conformances across stations)

User perception and satisfaction:
Measured through a survey on different type of users and their level of satisfaction with how inclusive the service/employment is.
Average satisfaction on likert scale 1-7

Self Audit for Management
Audit on Fairness characteristics across various dimensions specifying the three themes above : Self audit

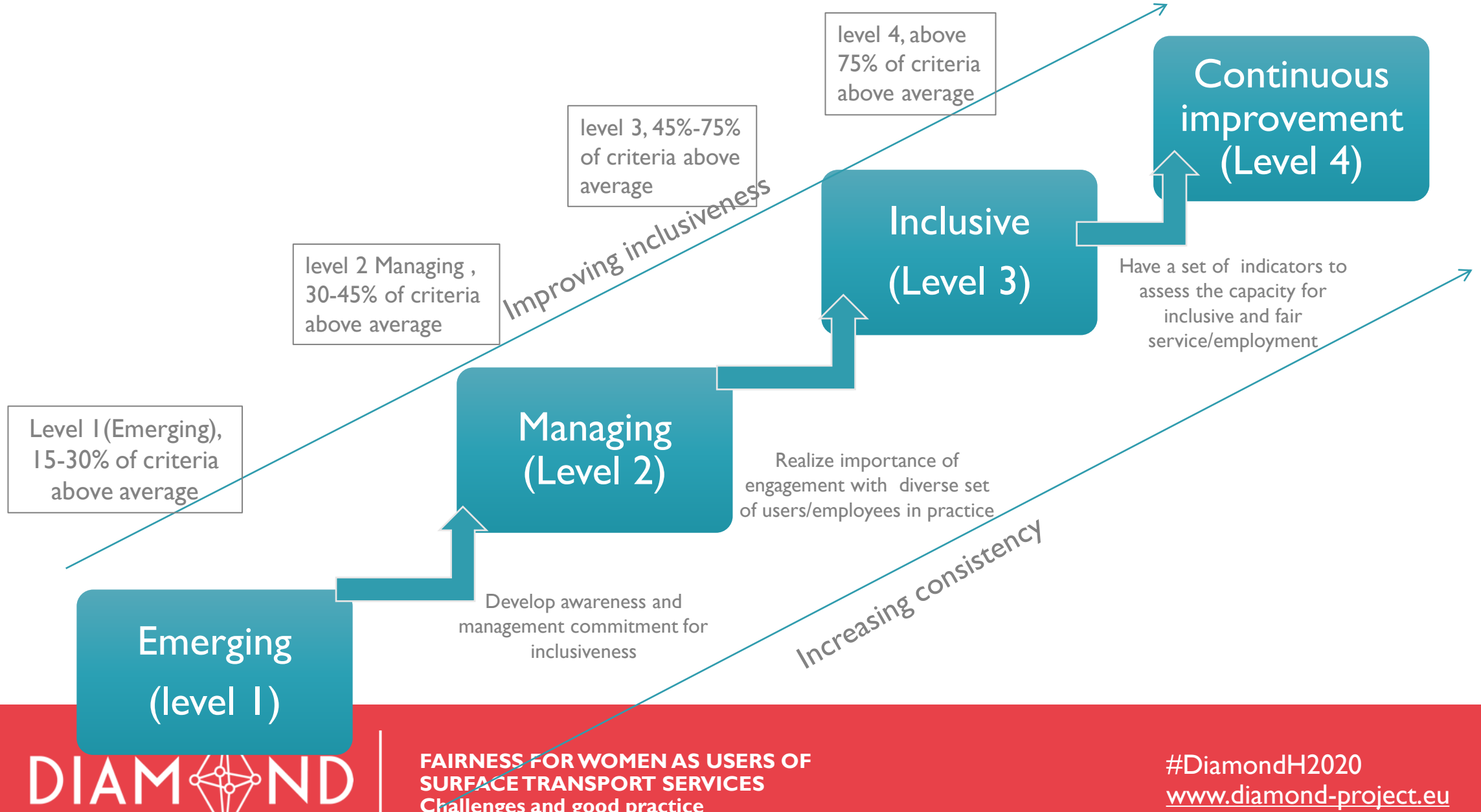
Based on Cooper M.D. (2000) Towards a model of Safety Culture, Safety Science 36, 111±136

Self evaluation protocol: Breaking down the responses in three macro areas

- Considering the results of the correlation matrix it makes sense to organise the responses in three macro areas:

Capability to meet user basic transport needs	**easy to get to destination frequency service operational hrs travel infos @ station announcements travel ticketing signs travel satisfaction travel satisfaction time, security travel to work satisfaction value for money**
accessibility	accessibility station lighting cleanliness seating facilities parent facilities ventilation A/C, comfort with space, walking from station
Safety and security	safe access and parking feel safe safe belonging cctv get help perception of confidence in evacuation

Fairness and inclusiveness Maturity Model



Feedback for the Steps offered by toolbox

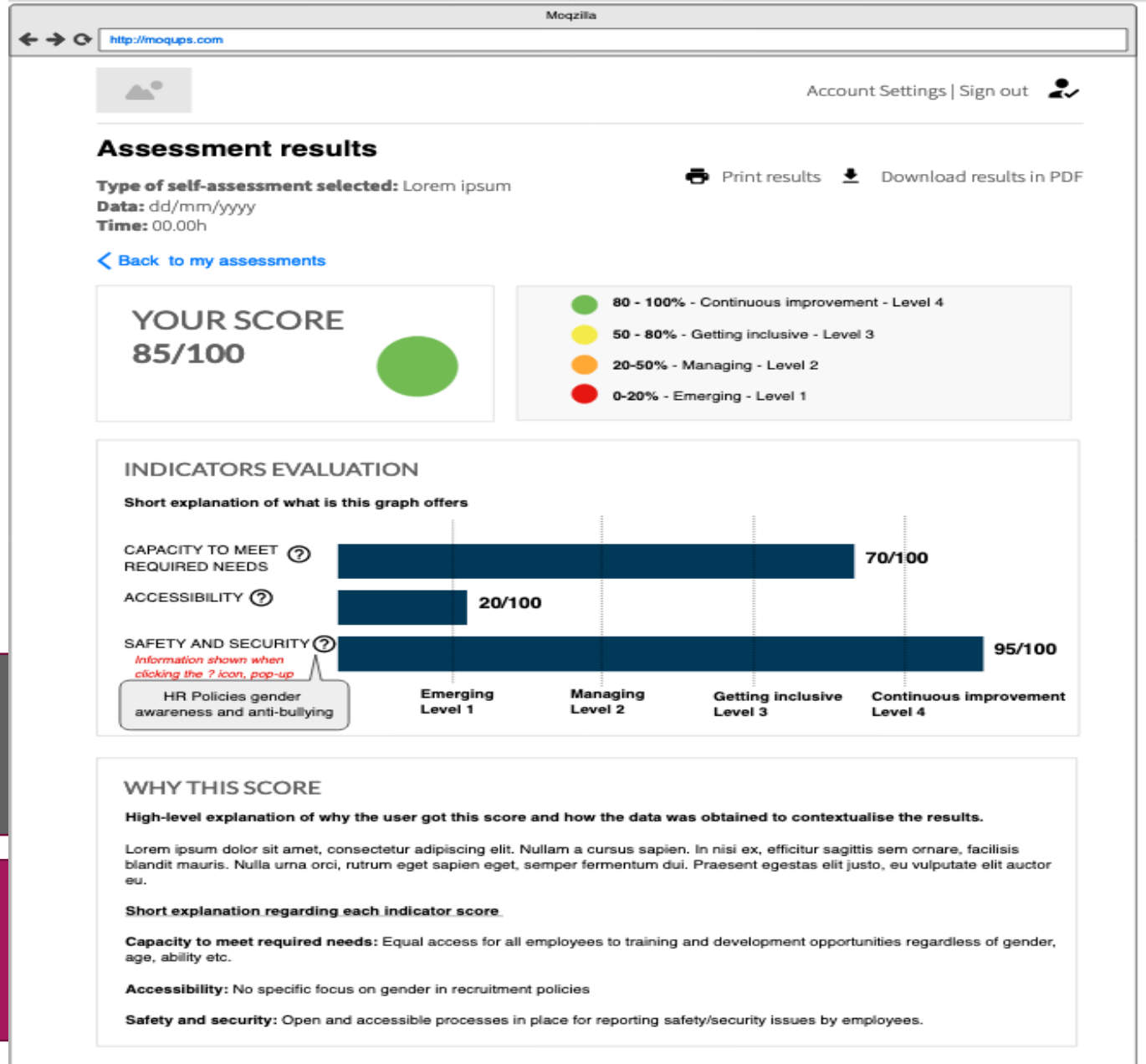
Present the definition of fairness and inclusivity for: (1)Service provision in surface transport (rail-metro) (2) autonomous vehicles (3) bike sharing (4) employment in transport

Present the idea of a fairness maturity model and self evaluation for organization providing transport service and employment

Offer an example of a self evaluation and benchmarking tool

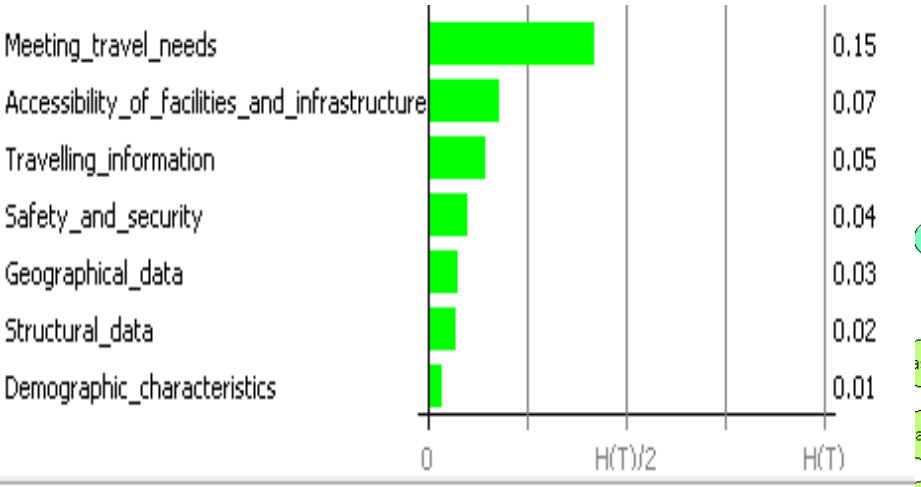
Offer extra tools for their own evaluation (survey for service users and employee satisfaction and observation checklist for actual conditions of service provisions)

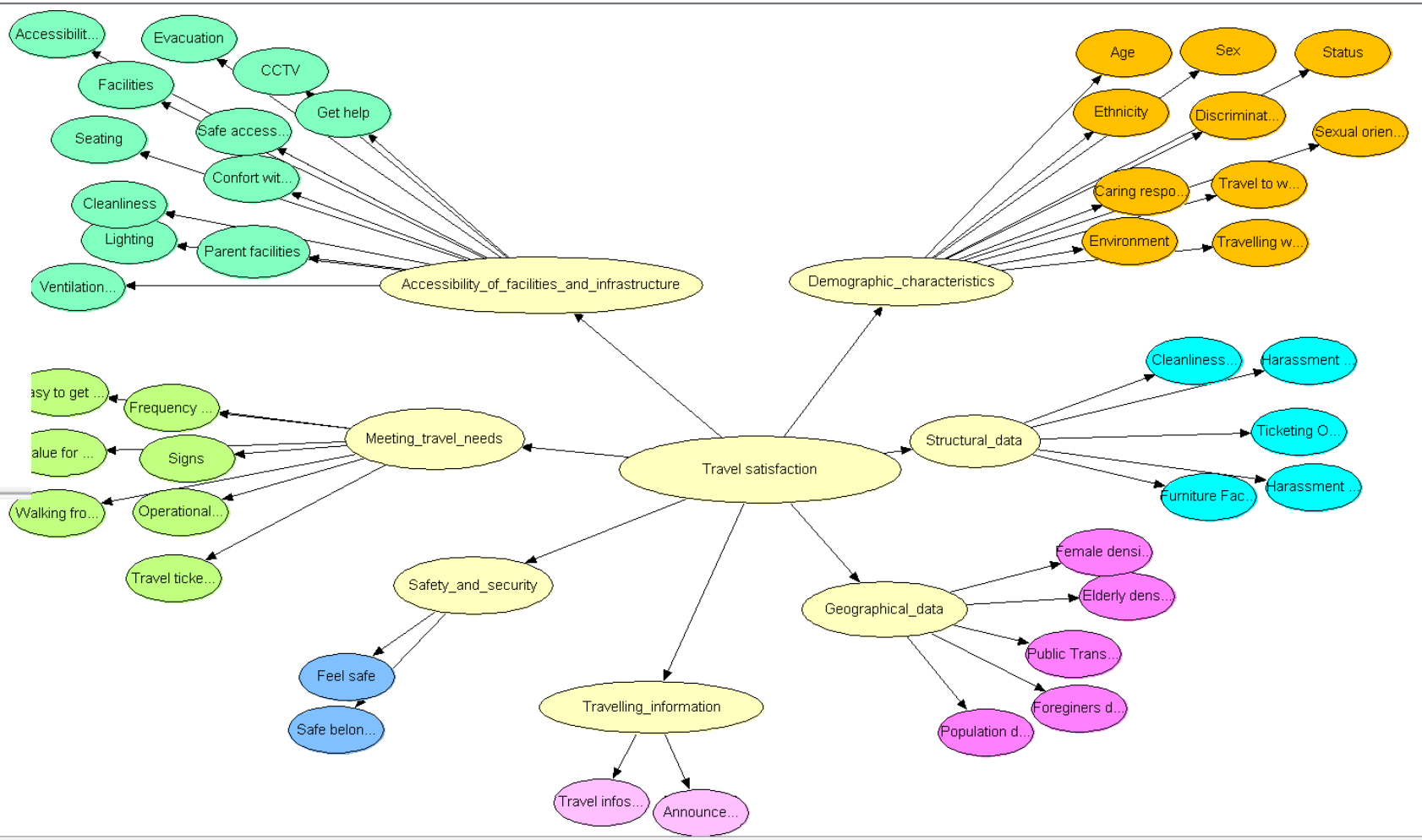
Provide an idea with the BBN web interface on how improvement in certain area can influence users- or employees projected satisfaction considering also certain socio-demographic profiling



BBN to represent the knowledge space :

http://demo.hugin.com/example/TravelSatisfaction





The model can be used to change demographic variables and structural variables and see how they affect travel satisfaction for the type of user identified by the demographic characteristics

Thank you!

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