



1st Multistakeholders' Forum



The TInnGO Multistakeholders' Forum; "Expanding the Boundaries of Smart Mobility", took place on 22nd October 2020, being the digital forum where new perspectives to approach gendered inequalities in the transport sector were actually discussed and put in public discourse with different stakeholders.

It offered a view of gender in smart transport that connects the TInnGO project with wider discourses of smart cities and notions of automated, green transport, smart biking and walking. At the Forum scientific evidence was presented and discussed on how inequalities are created and addressed gendered practices of education, employment, technological innovations and entrepreneurship as arenas for change and inclusion of gendered innovations.

There were presented, the core concepts and approaches to gender and transport, such as sex-gender analysis, gender mainstreaming and inclusive language. During TInnGO Multistakeholders' Forum, an approach to monitor Gender Smart Mobility was presented and discussed with stakeholders. Discussions were capitalizing on the experiences and knowledge of the TInnGO observatory and the 10 national hubs in 13 European countries.

The way forward on how to open a policy window for Gender Smart Mobility in the provision of proximity between stakeholders at both regional and European levels and to contribute with new knowledge in the design and implementation of sustainable future strategies of transport and future European policies was discussed and innovative approaches were presented.

All sessions were live-streamed and recorded so they could be watched accordingly:

Session 1: The Gender Smart Mobility Roadmap

The opening session introduced the key concepts in TInnGO, such as gender smart mobility, gender and diversity mainstreaming, digital methods and gender and diversity action plans. It was presented the TInnGO roadmap and methods and discussed how this can progress current debates and create a paradigm shift towards greater inclusivity in the transport sector and in transport policy. Additionally, the use of design as a communication aid to draw out requirements and shape transport was presented.

Keynote speech: Building imagination and possibilities of 'gendering' smart mobilities

Session 2: Creating a paradigm shift in employment in the Transport Business Ecosystem

Despite concrete evidence affirming the benefits of gender and diversity in all industries in terms of increased satisfaction, creativity, innovation and sales, there is still a gender and diversity gap across the whole of the transport system (i.e. from education, through to operationalisation, sales and manufacture). Indeed, the automotive industry is viewed as one of the most hostile environments to women. In this session there were discussed the findings from TInnGO project research, point to best practices and strategies to removing barriers including preparedness to increase diversity in employment.

Session 3: Creating a paradigm shift in the educational sector and research and innovation

A gradual change is occurring in the diversity of students taking STEM subjects. Session3, discussed which strategies /policies and interventions have been most successful in increasing diversity, and where more could be done, and whether this is having any effects in the wider system. Attention was also drawn to the lack of diversity within teaching, research and senior management in education and the effects this would have.

Keynote speech: Transport and Social Exclusion in Global South Cities

Session 4: Intersectional approaches to understanding Mobility

Intersectionality is a key concept in advancing understanding of mobility and the subtle influences lack of accessibility to transport provision may have on life outcomes, as well as everyday life. The differential outcomes of COVID has provided a chilling reminder of the effects of intersectionality on disease transmission and severity. Similarly, personal factors such as age, gender and ethnicity can affect mobility. This session discussed the challenges of using an intersectional approach in transport research and posed possible solutions for researchers and policy makers wishing to adopt intersectionality.

Session 5: Stakeholders' Reflections on Gender and Diversity Sensitive Smart Mobility

Is the world prepared for smart mobility solutions, and how is it ensuring that future transport provision will be accessible and inclusive? This session took the form of a structured discussion with stakeholders discussing how they are addressing this.

Session 6: The way ahead

TInnGO project findings should be translated into more robust and long-lasting EU statistics and follow up projects. What are the possibilities and challenges in terms of Eurostat and central EU institutions? What are the needs of various EU NGOs such as age, lgbt, ethnic minorities? What can be offered by EU institutions such as the EIGE and EUROSTAT? How can (person) transport/mobility and diversity be galvanized in future EU treaties. What have we learnt from COVID?

Imbalances in educational provision in the STEM domain



A desktop review was conducted at the European level aiming at evaluating the imbalances in educational provision in the STEM domain, given the active link with the Smart Mobility and transport framework. Currently, European universities rarely offer study courses focused on Smart Mobility. As a consequence, it has been necessary to extend the study to the STEM world with a focus on the transport sector, given the correlation between gender gaps in STEM and gender gaps in Smart Mobility. Furthermore, the practices for encouraging and supporting women in transport and Smart Mobility sectors are often included in more general solutions proposed by STEM studies.

Some difficulties had to be faced: numbers are not always easily accessible, especially from outside the academic context. More information can be found while searching for specific initiatives aiming to increase women's interest towards STEM disciplines at both academic and secondary school level. For example, the effectiveness of campaigns proposed by technical universities for promoting this kind of studies among secondary female students could be inferred by the increase of the percentage of women enrolled over the years, as emerged from some of the past European practices.

A wide network of associations and mentoring can be found operating in various European nations: most of them organise workshops and communication campaigns to make females aware of their potentialities in a deeply gender-biased field like the STEM one. Unfortunately, a low number of initiatives is explicitly focusing on bringing women closer to the transport sector. This is certainly a domain where the TInnGO project can contribute by supplying new knowledge and suggesting specific ways to address this issue. All these results have been investigated and exploited also thanks to the focus

on some available successful case studies. More specifically, the information collected can help to propose a set of guidelines that could be used by policy makers to address skills, opportunities and training needs in the mobility ecosystem to reduce gender gaps.

One of the fundamental points is the combined work of education institutions (mainly universities, but also secondary schools) and companies to explain the potentialities of female students in the technical disciplines and fight some stereotypes that would keep women far from some male-dominated labour ambits. Overcoming the gender gap in STEM would produce advantages both in terms of equity and efficiency. Already in 1999 Katy Matzui, an analyst at Golden Sachs, had coined the term "Womenomics" to indicate to the business world a new strategy that would enhance the female component as a resource and not as a constraint for the development of companies (Berra & Cavalletto, 2019). An increased number of women entering the labor market would produce an increase in the economy with benefits that could be perceived by the whole population (Del Boca et al., 2012). This aspect is necessary for an era like the current one, which is characterised by a broad technological change by developing new products and processes. Design of the technology and the organisation addressed only to the male component of the population would produce the risk of not exploiting the innovation and the creative proposal that the other half of the society would bring (Berra & Cavalletto, 2019).

The initiatives collected in the current document show that this path is starting to be followed. Most of the time, the initiative is directly taken by those companies that are beginning to run public events, workshops and online outreach activities to promote STEM-related careers to young women and female students. It is common to observe the creation of networks of women working in the STEM industry, made up of companies and educational institutes that combine their effort and their activities. These networks are commonly built at the national level, but some international experiences could be found too, mainly proposed by companies operating worldwide or through cooperation agreements established among different academies.

Most of the initiatives are directed to secondary school students to show women's potentialities in technical universities and propose the experiences of successful women operating in commonly male-dominated jobs, as, for example, within Smart Mobility. In these cases, the mentoring approach can involve either female university students or working women. In the first case, the goal is to present the experiences of female students in courses characterised by a vast majority of boys, highlighting both problems and satisfactions. The first potentiality of this activity lies in the not too large age

difference between the mentors and the participants, who can, thus, feel closer to the life experience. The meetings with working women may have the intent, instead, of highlighting the persistence of the gender gap and its effects in the many areas of professional life, with differences in the entry into the labor market, barriers during career paths, conflicts between working times, family obligations, and careers. However, these women can be seen as a living example of how it is possible to face these issues, demonstrating their ways of overcoming those barriers. This kind of workshops can also be proposed in universities, mainly in technical ones, in order to bring the female students closer to the job market, which will soon absorb them.

Some activities can also be proposed in primary schools, commonly to show that girls hold technical capacities. In fact, recent research showed that gendered notions of brilliance are acquired early (at six years of age) and have an immediate effect on children's interests (Bian et al., 2017). Moreover, some experimental activities proposing the use of digital technologies to primary students do not reveal differences in the ability between girls and boys, despite comments collected among scholars revealed a tendency to associate this kind of exercises mainly to males (Berra & Cavalletto, 2019). These feedbacks gathered directly on the field show the strong presence of models that can direct behaviours and attitudes since childhood. This result demonstrates that the creation of gender roles, and the corresponding expectations, arises before the secondary school attendance and is related to socialisation processes at family and school level.

As shown so far, the school is the primary environment where it is suggested to propose initiatives aiming to increase the interest of women towards STEM topics. The examples provided in the previous sections come from various European countries, each of them being characterised by a different perception of the female situation and awareness of the topic. Therefore, the replicability of a successful experience is not guaranteed simply through the exact reproduction of the actions undertaken. The suggestion is to study in detail each initiative so that it should be proposed in a manner fitting the context correctly, also bearing in mind the social situation. For that reason, it could be necessary to operate some investigations, preliminarily of the overall development, to prevent possible drawbacks.

Last but not least, the way the initiatives are disseminated is another fundamental point that deserves proper attention during their implementation. Despite the initiatives themselves can be proposed through different kinds of methods and tools, commonly workshops, conferences, or mentoring experiences, it is important to say to the world that they are going on. Therefore, the rapid increase of social media diffusion, mainly among the new

generations should be exploited to propose events and provide examples of successful experiences and people that could be seen as good examples and role models.

References:

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Bian, L., Leslie, S. J., & Cimpian, A. (2017). Gender stereotypes about intellectual ability emerge early and influence children's interests. *Science* (New York, N.Y.). <https://doi.org/10.1126/science.aah6524>

Del Boca, D., Mencarini, L., & Pasqua, S. (2012). Valorizzare le donne conviene. *Ruoli di genere nell'economia italiana*.

*More details are also found in the **D9.3 Case study/discussion document of methods used to reduce gender and diversity gaps in Smart Mobility** and in the paper Pirra, M.; Carboni, A.; Diana, M. (2020) *Assessing Gender Gaps in Educational Provision, Research and Employment Opportunities in the Transport Sector at the European Level*, *Education Science*, 10(5), 123, DOI: 10.3390/educsci10050123*

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Presentation of modelling framework of gender-disaggregated mobility



Increasing women's confidence in the use of transport systems seems to be an essential step in the creation of a more equal and non-discriminatory model, which involuntarily does not discriminate. The dissemination of campaigns regarding gender violence in public spaces and offers, for example, a number where victims can call seems to be an option to increase awareness and confidence of all users of the various modes of transport. Additionally, it is necessary to assure lively waiting areas in which they could feel comfortable, appropriate street lighting along the way to the next stations, friendly drivers and PT staff they trust. The sharing of good practices and experiences between the competent bodies, and cooperation between the various countries is also a solution. The provision of an environment in which female customers could feel safe and secure all along their journey is a fundamental point to attract and retain female customers. Such goals could also be achieved involving women at all levels of public transport development, as decision-makers, planners, as well as civil society leaders to understand better and address their daily concerns.

In general, PT is perceived as a very reliable option despite the dependency on the schedule: the use of apps and online services to check the times beforehand seem to be rather everyday habits (Kawgan-Kagan and Popp 2018). The main issues are related to the physical barriers related to travelling with this means (Hasson and Polevoy, 2011). The lack of storage space for strollers and the difficulty of bringing packages into the vehicle and storing them is mainly affecting women, due to the reasons behind their journeys. These issues cause them to avoid using PT when travelling with children, commonly because of a lack of (private) space for children, no barrier-free stations, and all the equipment that they need to take with them because of the children (Kawgan-Kagan and Popp 2018).

It should be noted that one of the main barriers of accessibility is the lack of connectivity between different modes of transport, mobility solutions need to be integrated and thought out together to increase the choices available. Thinking about mobility in the future only as user-centric may prove to be the enemy of inclusiveness and environmentally friendly solutions and according to Uteng (2019), it is especially important to distinguish between rural and urban areas. Thus, all solutions must be regulated and integrated into the bigger picture (Pangboure et al., 2020; Wong et al., 2020). Nonetheless, the lack of knowledge about mobility patterns and the needs of all users remains a barrier to the policy-making process. The mobility of a place must be planned to take into account all angles and with the participation of the whole mobile population, mainly by the most vulnerable groups, since they are the ones who are most subject to the least effective modes of transport (CIVITAS, 2016; Inclusion, 2018; Pangbourne et al., 2020).

In addition, the evolution and availability of the technology are changing the transport sector, and with it, the options for shared mobility are expanding, and the use of autonomous modes of transport in both passenger and freight is already a certainty in the future (Wong et al., 2020). With the expansion of cities and the changing mindsets of new generations, modes that have less impact on the environment and do not require commitment from the user are becoming increasingly popular (Kanota et al., 2020). Furthermore, safety will be one of the aspects that will benefit the most from technological development by, for instance, making easier to victims to report incidents, to authorities to locate them and to hold criminals accountable for their behaviour, increasing thus, the security perception of users, especially the most vulnerable ones (ITF, 2018).

Therefore, mobility plans should be more specific, produced according to the characteristics of each location and taking into consideration the advances of technology. Therefore, TInnGO project aims at producing tools and reports that can help the competent authorities in the decision-making process.

Regarding women's participation in the transport sector, there are several barriers when accessing job opportunities, but also to maintain and grow as female transport professionals. The change in society in the allocation of roles to specific genders is still a barrier to building a fair system, since women have a double burden, while men are used to sticking more with their breadwinning role, rather than taking equal responsibility for household and family work (Scheiner and Rau, 2017). Changing these mentalities and behaviours should be encouraged through education and the increase of awareness of gender disparities. An Italian study demonstrates that most women without educational qualifications live with their families and rely on other people to drive them (Cristaldi, 2005). Instead, graduates from secondary schools or universities are

commonly using broader range of means of transport.

The most relevant information on the topic has been developed mainly in the last decade, according to the proposals of a few ground sources: “Promoting the employment of women in the transport sector - Obstacles and policy option” (Turnbull, 2013), the program “From Membership to Leadership – Advancing Women in Trade Unions” (ETUC), Women in Transportation (Hanson and Murakami (2010) and Attracting and Retaining Women in the Transportation Industry (Godfrey et al., 2019).

Moreover, it is vital to understand that future employment will be associated with the ability to quickly learn new skills for the employee and the efforts to ensure the possibility to develop the staff for the employers. Hence, broader training programs, along with the gender-oriented inclusion, will significantly influence further employment tendencies.

International experience shows that poor accessibilities to transport can be an outcome of poor planning as well as a cause and a product of economic and social disadvantage and exclusion. Nevertheless, without proper and detailed gender statistics, correct identification of the problems, equal gender involvement in the decision-making processes, appropriate gender impact assessments and robust data that characterise women’s lives and their daily commuting, it is not possible to improve planning with a gender perspective approach (CIVITAS, 2016; Gauvin et al., 2019).

The understanding of all needs is essential to build more effective mobility plans that integrate new mobility solutions into an inclusive and fair transport system. For this purpose, TInnGO project adopts a modelling approach that embraces multiple methods for the understanding of women’s needs in terms of mobility that could reflect in better job opportunities, the formulation of new datasets and the deduction of policy-related conclusions to be employed in future planning.

*More details are also found in the **D7.1 Presentation of modelling framework of gender-disaggregated mobility***

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Recommendations for a Gender Smart Transport Sector



The projections of new Smart Transport are often closely linked to new technological solutions. Where the 'smart' here compares to technology, the Smart Transport solutions of the future will not only be technological in nature. There will continue to be functions at the transport labor market that are not just 'technical', but consist in maintaining, repairing, operating as well as providing services and management. In other words, the future transport labor market will continue to have many of the functions we see in today's transport sector. This also means that we must be aware of whether we continue to reproduce the gendered opportunities and barriers that we find in the transport sector today. Although the gender imbalances in technical professions are decreasing, we must ask whether the operator functions will continue to be male-dominated and if women also in the future primarily will be found in transport service jobs. Lastly, we have to raise a question about whether smart transport is actually smart if parts of the population cannot access the sector. Or if people working in the sector have few opportunities to develop their skills.

In the TInnGO project, we have set out the following recommendations for a *Gender Smart Transport* labor market:

- Since the transport sector is divided into different work functions, it is important to investigate the opportunities and barriers for women within various job functions and work levels.
- Measures and efforts to improve work conditions and to attract a more diverse work force must be directed to the specific level of employment.
- Transport companies must ensure a work-life balance that fits employees with small children, i.e. working hours, the planning of meetings, and work activities must reflect the opening hours of child-care institutions.
- In order to widen the use of all talents, people with impaired mobility must be included in the working force. That means that companies must meet the requirements of access for all groups of people, including persons with disabilities.
- The transport sector would benefit from flexibility and autonomy on job levels, which today are characterized by little flexibility, such as jobs at the operator level.
- Representatives from different functions within the company as well as a variety of genders, age, ethnicities (etc.) must be involved in processes of evaluating and developing the company.
- Gender and diversity perspectives must be included in the development of a Smart Transport sector.

*More details are also found in the **D9.1 Identification of current and future issues in employment of women in Smart Mobility***

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Science for kids; fun video experiments



The TInnGO project shares United Nations' view, that empowering women and girls and promoting gender equality is crucial to accelerating sustainable development. Ending all forms of discrimination against women and girls is not only a basic human right, but it also has a multiplier effect across all other development areas. Adolescent girls worldwide assert their power as change-makers, International Day of the Girl 2020 will focus on their demands to:

- Live free from gender-based violence, harmful practices, and HIV and AIDS
- Learn new skills towards the futures they choose
- Lead as a generation of activists accelerating social change

For the International Day of the Girl 2020, the TInnGO project, in an effort to promote science for young girls, has created a series of fun video experiments, *Science for kids*, which can be found in the links below:

[Lava Lamp experiment](#)

[Testing Water Density](#)

[Creating Vacuum](#)

Rurality and Gender Webinar on International Day of Rural Women



The TInnGO project celebrated the **International Day of Rural Women** by organising the webinar: Rurality and Gender on 15th October 2020, with special guests presenting their work and studies on different rural areas in the United Kingdom and Serbia.

The panel of speakers was composed of **Biljana Ranković**, **Polly Gibb**, **Julia Lyford**, **Jacque Bridgman**, and **Hannah Budge**.

Rural women and diversity are being investigated by TInnGO and the UK hub. To continue stimulating the discussion and calling attention to their issues, the recorded sessions and presentations are available on TInnGO **YouTube page**.

The first presenter was Dr. Biljana Ranković, with an overview of the European Union's rurality scenario and how opportunities for rural women are influenced by factors such as transport, household configuration, and more.

The second presenter, Polly Gibb, presented WiRE's work on supporting entrepreneurial women in rural and countryside areas, showcasing successful stories, barriers, and the experience gained in past and present projects. As a former entrepreneurial woman herself, Polly provided great insight on how diverse rural economy and gender can be, as well as discussing possible tools and strategies to incentivize rural business and diversity

Julia Lyford presented her instigating work in Northampton with rural immigrant and local women, the challenges of transport, cultural adjustment, access, and maintenance of work placement. Through innovative and instigating approaches, Julia and her colleagues presented the various opportunities to make rural women's' voices heard and presented to policymakers and the

general society, the form of autobiographical videos, artwork, and more.

Jacquie Bridgman presented an overview of Northampton's transport and mobility patterns between rural and urban areas, both for workers and familial commuting. Issues of transport access and availability, as well as the elderly population's needs, were covered in her presentation, pointing out how the current system is car-dependent and excludes minorities with no access to private transportation, be it economically or due to disabilities and other issues.

Hannah Budge provided a novel insight on her research and personal life experience as a researcher but also a woman from the rural Scottish Islands. She shared the challenges of getting access and instigating the debate around agricultural women, gender, and culture, before and after the pandemic.

Did you know?

- *Rural women – a quarter of the world's population – work as farmers, wage earners, and entrepreneurs.*
- *Less than 20% of landholders worldwide are women. In rural areas, the gender pay gap is as high as 40%.*
- *Reducing the gap in labour force participation rates between men and women by 25% by the year 2025 could raise global GDP by 3.9%.*
- *If women in rural areas had the same access to agricultural assets, education, and markets as men, agricultural production could be increased, and the number of hungry people reduced by 100-150 million.*

Rural women are key agents for achieving the transformational economic, environmental and social changes required for sustainable development. But limited access to credit, health care and education are among the many challenges they face, which are further aggravated by the global food and economic crises and climate change. Empowering them is key not only to the well-being of individuals, families and rural communities, but also to overall economic productivity, given women's large presence in the agricultural workforce worldwide.

Read more in [United Nations' Women website](#).

TInnGO

SEASON'S GREETINGS

We wish you an innovative new year hoping that **gender smart mobility** will drive our lives.



TInnGO is a three years research project, funded in the context of the HORIZON 2020 Programme of the EU, aiming to create a framework and mechanisms for a sustainable game change in European transport, through a transformative strategy of gender and diversity sensitive smart mobility.

Subscribe to [TInnGO](#) for free!



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