



CORDIS Results Pack on **inclusive mobility**

A thematic collection of innovative EU-funded research results

September 2023

Building sustainable transportation systems accessible to all



Research and
Innovation

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Editorial

The EU is developing a transport system that will enable all its citizens to travel seamlessly and independently. This Results Pack highlights 11 EU-funded Horizon 2020 projects that are plotting a route to an inclusive, accessible, affordable and fair transport system for all European citizens.

Across Europe, work is being carried out to increase the connectivity, accessibility and inclusivity of transport systems. The aim is to foster mobility as a universal right, which is essential to access other rights such as housing, work, education and health. An inclusive transport system provides ease of movement and ensures unrestricted access to jobs and services for all potential passengers and people, no matter their circumstances. These include people of different ages, gender, economic and social status, hereunder ethnic minorities and people with temporary or permanent vulnerabilities or disabilities.

Currently, over [80 million Europeans have a long-term disability](#) that may include physical, mental, sensory or intellectual challenges. While disabled citizens are at a high risk of social exclusion, making all transport modes available to them is a means to safeguard their mobility rights, their access to necessary services (housing, work, health, education, recreation, etc.) and thus their active participation in society.

Mobility for all

The European Commission's [Sustainable and Smart Mobility Strategy](#), as outlined in the [European Green Deal](#), lays the foundation for how the EU transport system can achieve its green and digital transformation, while making mobility fair and just for all. This means promoting people-centred mobility and making transport infrastructure and services affordable and accessible in all regions, for all passengers.

The [Women in Transport - EU Platform for change](#), set up in 2017, aims to address the sector's gender gap by encouraging an open dialogue on issues affecting women working in the sector. Moreover, the [Diversity Ambassadors in Transport](#), established in 2022, already includes 84 advocates who are working to spread the message on diversity, equality and inclusion in the sector.

The integration of socio-economic, behavioural and societal determinants into transport planning, thinking and practice will result in transport and mobility policies that reflect the values, needs and expectations of an inclusive, fair and just society. Co-creating people-centred mobility solutions with neighbourhood inhabitants, building child-friendly streets and public spaces, giving citizens a say in designing transport systems and making women feel safe on public transport are all concrete examples of actions and measures implemented through EU-funded research and innovation projects that are shifting the narrative of transport and mobility policies towards inclusivity and fairness.

Spotlight on EU research

This CORDIS Results Pack focuses on 11 projects funded under the EU's Horizon 2020 research programme. They depict societal drivers and users' behaviours that encourage the take-up and deployment of sustainable mobility solutions, services and infrastructure. They also illustrate the need for an inclusive, accessible, affordable and fair transport system for all, irrespective of age, gender, economic or social status.

The projects explore themes such as women's participation in the transport sector, be it as users or employees; transport services' inclusivity and accessibility for people with temporary or permanent vulnerabilities, disabilities or reduced mobility; and how new lifestyles and values or environmental and climate concerns shape our transport system and lead to a new mobility culture.

Giving citizens a stand to improve their cities

Many urban and peri-urban areas of EU cities face common mobility challenges. Through a people-oriented approach, the CIVITAS Cities-4-People project has been working to improve transportation and increase urban sustainability.

Commuters usually face various problems associated with convenience, access to live information and infrastructure. These issues must be addressed to improve mobility experience across Europe and make cities a better place to live.

Including citizens in urban mobility design

The EU-Horizon2020-funded **CIVITAS Cities-4-People** project is a CIVITAS initiative project which aspired to make transportation more sustainable, people-oriented, and accessible. With demand-driven and locally designed mobility solutions, it tapped into participatory and sustainable urban planning. Aiming to implement mobility solutions developed by the people for the people, CIVITAS Cities-4-People tapped into participatory practices of social innovation and neighbourhood governance. The project built on three main pillars: citizen participation, community empowerment, and sustainable urban planning. "Our project has empowered local communities to engage and interact towards changing their city for the better," explains project coordinator Isabel Froes, from Copenhagen Business School. Partners have set up citizen mobility communities in five areas across Europe (Budapest, Hamburg, Istanbul, Oxfordshire and Trikala) and implemented five pilot programmes. The CIVITAS Cities-4-People team tested the effectiveness of prototype and pilot innovative and smart mobility solutions that address pressing and real urban mobility challenges.

Improving mobility networks in European cities

Citizens of Budapest joined forces to transform the mobility landscape of the city, focusing on bringing people closer to the

Danube riverbank. This initiative was undertaken in collaboration with mobility providers and involved the design of a busy **transport hub** that includes e-cars, scooters and bikes. The usage of this environmentally friendly and sustainable means of transport has enabled citizens to reach their destination on time and at lower costs compared to using their own car. Up to now, more than

30 000 users have benefited from the service. The municipality of Üsküdar in Istanbul is a densely populated region and mobility is complicated, especially for vulnerable groups, such as the elderly, children and people with impairments. CIVITAS Cities-4-People installed **resting points** such as benches and improved pavement conditions for visually impaired citizens. In addition, renovation of the pavement and lighting in Salih Solman Park was intended to make it 'everyone's garden'. Such practices are expected to extend to other green areas in the city. To address traffic congestion around Oxfordshire, CIVITAS Cities-4-

People implemented **transport services on demand**. These include a shopper service and a connector that transfers people from peripheral villages to the Barton shopping centre.

Enhancing European city infrastructure

Expanding the bike infrastructure was the predominant solution that citizens of Altona, an urban borough of Hamburg, chose to implement. The city installed **bike racks including racks for cargo bikes** on roads used by cyclists after receiving input from local stakeholders. Altona added sprayed-on logos on the ground to distinguish cargo bike racks. Trikala citizens expressed their wish to combine different activities in the centre where all services are gathered. To accommodate this, CIVITAS Cities-4-People installed storage lockers at the central info point for people to leave their heavy luggage. Alongside pedestrianisation of the



Our project has empowered local communities to engage and interact towards changing their city for the better.



© City of Hamburg

streets around the main square, this solution is expected to [reduce traffic in the centre](#) and facilitate cycling and walking. Trikala has also provided electric scooters for citizens with mobility impairment to move around the centre of the city.

Lessons learned

Besides the permanent solutions implemented during the project, CIVITAS Cities-4-People underscored the importance of citizens in the co-creation process, especially when it comes to neighbourhood mobility. To raise awareness of this fact, project partners collaborated with other projects (CIVITAS Metamorphosis, CIVITAS SUNRISE and Looper) to produce a [‘Big Messages’ brochure](#) to encourage citizen participation in the urban planning of their neighbourhood.

PROJECT

CIVITAS Cities-4-People - New approaches for community-driven sustainable mobility innovations at neighbourhood and urban district level

COORDINATED BY

Copenhagen Business School in Denmark

FUNDED UNDER

H2020-EU.3.4.

CORDIS FACTSHEET

cordis.europa.eu/project/id/723194

PROJECT WEBSITE

cities4people.eu/




How transport systems can better meet the needs of women

Women rely most on public transport, but many avoid it when it doesn't meet their needs. Analysing these needs and actual usage helped DIAMOND develop data-driven recommendations and tools for more equitable and sustainable mobility services.

Women's mobility patterns are diverse and complex, depending on age, socio-economic status and caregiving roles.

According to a 2019 report by the [International Transport Forum](#), nearly 40 % of public transport journeys globally are [mobility of care](#) journeys, with 80 % made by women, most by foot or public transport. These include visits to health centres, escorting dependents, shopping and carrying out errands.

"Yet, public transport is still geared towards work commuting, on routes and schedules that don't meet mobility of care needs, which are for more frequent, local, shorter and irregular journeys," says Patricia Castillo, coordinator of the EU-supported [DIAMOND](#) project and head of the Eurecat European Programmes Unit, the project host. "Transport planning must enable these journeys and part of the answer should be having more women in decision-making roles."


Transport planning must enable [more frequent, local, shorter and irregular] journeys and part of the answer should be having more women in decision-making roles.

DIAMOND developed tools and guidelines to promote gender equality in the transport and mobility sector, based on the assessment of transport users' needs and drawing on big data and machine learning techniques.

A toolbox for assessing the inclusivity of particular transport services, including recommendations for assisting particular profiles, was tested and validated with transport sector companies across Europe, to be targeted at transport operators, public planners and transport employers.

The team produced a [white paper](#) outlining key actions for a more inclusive transport system, alongside [recommendations](#) specific to autonomous cars. [Curriculum guidelines](#) and corporate social responsibility (CSR) protocols were also developed to increase female employment in this sector.

Transport needs, obstacles and opportunities

DIAMOND focused on three key areas impacting women's engagement with public transport: capacity to address basic mobility needs, physical and monetary accessibility, and safety and security.



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The team carried out trans-European qualitative and quantitative data collection on diversity and gender-sensitive issues focused on: railways and public multimodal transport, autonomous vehicles, bicycle-sharing services, alongside CSR and employment.

Transport user data, collected from over 1 000 on-site surveys in Barcelona, Dublin, Warsaw and Paris, was combined with social media analysis of messages related to satisfaction with transport options. These were complemented by in situ observations of transport infrastructure. Focus groups and workshops were also undertaken, and in the autonomous vehicles case study a driving simulator was developed to better understand women's needs.

An overarching finding was that for women, feeling safe at all times was crucial for ensuring continued public transport use.

"Furthermore, we found safety and security were particularly important for women in low-income groups and those belonging to ethnic minorities – the groups most reliant on public transport," says Maria Chiara Leva, DIAMOND dissemination manager and Technological University Dublin lecturer.

The team also found that travelling with dependents often pushes women towards alternative transport, mainly private cars.

A multipronged approach

DIAMOND contributes directly to the European Commission's [Women in Transport – EU Platform for Change](#), an initiative launched in 2017 for exchanging best practices that strengthen women's employment and equal opportunities in the transport sector.

Opting for an open-source software as a service approach to the DIAMOND toolbox, the team is now in discussions with potential partners about its commercialisation.

"With only 22 % of the European transport sector's 11 million jobs held by women, this toolbox offers industry a user-friendly platform for collecting data about employment inclusion levels and so making strategic choices to improve things," adds Francisco Santarremigia, CTO of project partner AITEC and DIAMOND technical coordinator.

All the materials produced by DIAMOND are now available on the project website.

PROJECT

DIAMOND - Revealing fair and actionable knowledge from data to support women's inclusion in transport systems

COORDINATED BY

Fundació Eurecat in Spain

FUNDED UNDER

H2020-EU.3.4.

CORDIS FACTSHEET

cordis.europa.eu/project/id/824326

PROJECT WEBSITE

diamond-project.eu/



Making the digital revolution in urban transport inclusive

Technological barriers risk excluding certain groups from next-generation transport. A new framework aims to tackle this problem.

The digital revolution is already changing the ways people access information about transport services and products, as well as shaping new mobility patterns and transport options. Yet, not everyone benefits from these digital upgrades. A 'digital gap' is emerging, one that threatens to divide and segregate groups based in part on their access to digital services. This includes, for example, older people, those with disabilities, the economically vulnerable and people with low education, who can't use next-generation transport for reasons such as inadequate access to the required technology or poor digital skills. "The digital gap in mobility, and specifically its potential effects on mobility poverty, has not yet received the necessary attention in national and local mobility policies," explains Silvia Gaggi, senior project manager at the [Institute of Studies for the Integration of Systems](#) and DIGNITY project coordinator. "If not urgently addressed, the growing digitalisation of mobility solutions is likely to cause further exclusion of specific vulnerable groups," she adds.

The DIGNITY approach

The first step was to assess the digital gap in urban centres across Europe, by getting an overview of the inclusivity of the digital transport scene in a given city, region or nation. The team gathered insights on: the digital abilities and mobility poverty of the population; the provision of digital urban transport; and the policies shaping digital mobility and inclusion. Using insights from this initial framing stage, the team then worked on bridging the digital gap. This process involved building potential scenarios in order to draft inclusive policies, and had input from a range of stakeholders, from policymakers to transport providers – and the end users. "The DIGNITY approach is developed in such a way that the output of framing and bridging phases collectively can be used to develop a local strategy towards an inclusive digital travel ecosystem," notes Gaggi.

Innovative transport for everyone

In the EU-funded [DIGNITY](#) project, researchers developed an entirely new framework for [urban transport](#). "The aim was to support public and private mobility providers in conceiving mainstream digital products or services that are accessible to and usable by as many people as possible, regardless of their income, social background, health situation or age," says Gaggi. The project also sought to help policymakers formulate long-term strategies that promote innovation in transport, while responding to global social, demographic and economic changes, including the challenges of poverty and migration.



The aim was to support public and private mobility providers in conceiving mainstream digital products or services that are accessible to and usable by as many people as possible.

Trials across Europe

The DIGNITY approach was successfully tested in four pilots across Europe: Barcelona, Flanders, Ancona and Tilburg. These efforts resulted in an innovative decision support tool for local and regional decision-makers to formulate digitally inclusive policies and strategies, and for digital providers to design more inclusive products and services. The [DIGNITY toolkit](#) and guidelines enable authorities to implement the research methods in their own locality. Furthermore, the collection of population-level data in five EU countries, combined with the collection of examples of existing digital mobility services across Europe, has provided a holistic perspective on who is excluded from using a particular digital product or service and why.



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“DIGNITY raised awareness of the digital gap in transport and the need to bridge the gap to leave no one behind in the digital transition, therefore contributing to building a ‘culture of dignity’ for all the actors in the digital transport ecosystem,” says Gaggi.

PROJECT

DIGNITY - DIGital traNsport In and for sociETY

COORDINATED BY

Istituto di Studi per l'Integrazione dei Sistemi
(ISINNOVA) –Società Cooperativa in Italy

FUNDED UNDER

H2020-EU.3.4.

CORDIS FACTSHEET

cordis.europa.eu/project/id/875542

PROJECT WEBSITE

dignity-project.eu/



Helping cities transition from four wheels to two

By positioning cycling as a safe and practical mode of transportation, an EU-funded project is helping make a number of European cities even more liveable.



Cycling is a powerful, cost-effective way to help cities become a more sustainable, equitable and economically prosperous place for citizens.

Did you know that one of the most efficient ways to reduce both urban congestion and air pollution can be found on two wheels? “Cycling is a powerful, cost-effective way to help cities become a more sustainable, equitable and economically prosperous place for citizens,” says Mario Gualdi, lead researcher at the [Institute of Studies for the Integration of Systems \(ISINNOVA\)](#). However, before any of this can happen, cities must first put into place the proper cycling infrastructure and services – which is exactly what the EU-funded [CIVITAS Handshake](#) project set out to do.

Cities where cycling is the norm help others to boost uptake

Led by ISINNOVA, the project helped [13 ambitious European cities](#) become more liveable places, improving conditions for cycling as an everyday mode of transport. “CIVITAS Handshake is the story of five years of close-knit international cooperation supercharged by 50 years of combined knowledge coming from our frontrunning cities,” explains Gualdi. These frontrunning cities, which include Amsterdam, Copenhagen and Munich, leveraged their deep cycling roots to mentor cities such as Bordeaux, Bruges, Cadiz, Dublin, Helsinki, Krakow, Manchester, Riga, Rome and Turin to make the transition from four wheels to two. This included supporting them to not only improve the quality of available cycling infrastructure, services and communications, but also to identify opportunities for innovation in areas like intelligent transport systems, bike sharing and parking, governance and decision-making. For example, Amsterdam worked with Dublin to help the city implement intelligent transport solutions for better managing cycling flows and data collection. The Dutch capital also mentored its Irish counterpart on developing its cycling infrastructure network. As a direct result of this collaboration, Dublin now benefits from eight trials for collecting cycle data – data that it is using to ensure all traffic signalling includes bike detection capabilities.

The importance of international mentoring and cooperation

This is just one example of how fostering cooperation across borders is the key to successfully delivering policies and solutions. “Working in isolation is costly, short-sighted and inefficient,” notes Gualdi. “In a world dominated by global trends and challenges, effective and timely solutions require a collective response based on our collective knowledge.” According to Gualdi, international, peer-to-peer mentoring and cooperation becomes the tool of choice for sustaining deep cultural transformation, such as that entailed by cycling. “It allows us to address, in an informed and trusted way, the queries and preoccupations of the involved urban stakeholders,” he explains. But it wasn’t just the mentee cities that benefited. “Even our frontrunning cycling cities learned a lot, both from their peers and from those striving to become a cycling-centred city,” adds Gualdi.

Climate-friendly cities start with cycling

The challenge now is to consolidate both the knowledge gained and the collaborative process perfected during the project so additional cities can benefit too. “Knowing that there can’t be climate-friendly, thriving cities without a strong role of cycling, we have established the International Cycling Community of Practice,” remarks Gualdi. This independently funded portal serves as a one-stop shop for all cities worldwide looking to leverage the lessons learned during the CIVITAS Handshake project. “Policymakers, practitioners, researchers, industries, consultants, businesses, NGOs and civil society can come together to help their cities build and achieve their cycling plans faster and more effectively,” concludes Gualdi. The initiative is currently in the fundraising phase and is expected to launch in early 2023.



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PROJECT

CIVITAS Handshake - Enabling the transferability of cycling innovations and assessment of its implications

COORDINATED BY

Istituto di Studi per l'Integrazione dei Sistemi (ISINNOVA) – Società Cooperativa in Italy

FUNDED UNDER

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CORDIS FACTSHEET

cordis.europa.eu/project/id/769177

PROJECT WEBSITE

handshakecycling.eu/



Transforming digital mobility from a privilege into a right

An EU-funded project offers a toolbox that effectively facilitates the design of user-friendly digital mobility services.

Mobility services such as car sharing, the rental of e-scooters or simply buying a bus ticket are becoming increasingly available only through digital channels such as a mobile app or a website. At the same time, many people do not have digital skills, a smartphone or a continuous internet connection and cannot therefore enjoy the benefits of such services.

An average of 42 % of the EU population do not have basic digital skills. Very often they belong to vulnerable population groups, such as people with low income or level of education, people with physical or mental disabilities, older people and children.

The EU-funded [INDIMO](#) project developed the Inclusive Digital Mobility Toolbox that addresses this issue by providing guidelines and recommendations to the key stakeholders in digital mobility.

A user-centric approach to digital mobility

"INDIMO takes a user-driven perspective on new technologies rather than trying to impose the new technology on people," clarifies project coordinator Imre Keserü, from the Mobilise Lab

of Vrije Universiteit Brussel. The team has done extensive research to explore the needs of vulnerable people when using digital mobility services by involving more than 240 users, non-users of digital services and other stakeholders through 64 co-creation sessions.



INDIMO takes a user-driven perspective on new technologies rather than trying to impose the new technology on people.

Therefore, the guidelines they developed reflect their needs, such as creating a friendly interface, providing in-person live assistance, and explaining the use of personal data concisely and understandably.

"Also, we have found that coupling the digital and physical experience is important since all digital mobility services have a physical component," explains Keserü. "You can create the most user-friendly digital interface, but the trip may not happen if the physical component is not accessible, because you cannot find that car-sharing vehicle in the parking or you cannot get on the bus because it is not accessible for wheelchairs."

Digital transport tools based on users' requirements

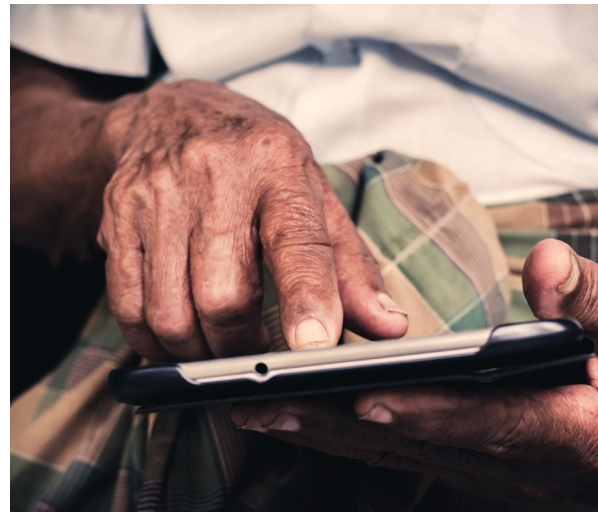
The toolbox consists of four online tools that are available in English, Spanish, Dutch, German, French and Italian on the project's website.

INDIMO's [Universal Design manual](#) for digital transport services supports developers and operators by incentivising user-centric thinking and offering a universal design perspective. The [Universal Interface Language manual](#) consists of guidelines for improving the design of icons and interfaces of smartphone apps and websites.

The [Cybersecurity and privacy assessment guidelines](#) enhance the security of digital mobility solutions starting from a user-needs perspective and in compliance with European regulations and standards. Finally, the [INDIMO Service evaluation tool](#) contains 76 questions to rate the inclusiveness and accessibility of a service, providing tailor-made recommendations to ensure both elements.

Accessibility and mobility for all

"We implemented the tools in five pilots in Emilia-Romagna, Madrid, Antwerp, Galilee and Berlin, but we hope that many more cities and regions will use them and at an early stage of service and software development," says Keserü.



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The team would also like to see their recommendations implemented in a common European platform. This would take the form of a one-stop shop for inclusive co-design solutions and planning tools, ensuring the continuity of project results.

"With technological development going at a high pace, people should not be left behind. Therefore, building on the results of INDIMO, we would like to extend the principle of universal design to more digital services such as the design of autonomous public transport and mobility as a service," concludes Keserü.

PROJECT

INDIMO - Inclusive digital mobility solutions

COORDINATED BY

Vrije Universiteit Brussel in Belgium

FUNDED UNDER

H2020-EU.3.4.

CORDIS FACTSHEET

cordis.europa.eu/project/id/875533

PROJECT WEBSITE

indimoproject.eu/

Transforming neighbourhoods into child-friendly public spaces

Europe's public spaces tend to favour motor vehicles. But a group of researchers is working to change that by creating liveable, sustainable and safe cities that prioritise people over cars.

According to the EU-funded [CIVITAS Metamorphosis](#) project, a neighbourhood full of children playing outside is a well-designed, sustainable one. As such, the project is dedicated to transforming neighbourhoods across Europe from being car-centric to child-friendly places that offer a high quality of life for all generations.

"If you installed a children's ball pool in a housing unit's parking lot, you'd probably soon get a visit from the police," says Karl Reiter, researcher and former CIVITAS Metamorphosis scientific coordinator. "However, if you put the same ball pool in the back of your parked car you would not break the law. Even though



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this is public space, the privilege of using it is reserved for motorists.” Within this context, the CIVITAS Metamorphosis project has worked to address the injustices found in how we use public spaces, which are currently dominated by cars. “Our goal was to create a space for people, especially children, and not for machines,” adds Reiter.

Reimagining public spaces

The CIVITAS Metamorphosis project aimed to challenge the privilege of public space and the discrimination associated with this privilege. “When it comes to the use of public space, motorists are treated more favourably for no other reason than the fact that they own a car,” explains Reiter. “This unequal distribution or discrimination has become so widely accepted that it is part of most road codes in EU countries.”

The project implemented a number of initiatives aimed at highlighting the importance of granting equal use to public spaces. These initiatives included creating more than 200 temporary car-free spaces in 65 neighbourhoods across Europe, including in [Graz](#), [Munich](#), [Merano](#), [Zurich](#), [Southampton](#), [Tilburg](#) and [Alba Iulia](#).

These initiatives, many of which were led by school children, included everything from prohibiting cars from using streets to converting parking areas into living spaces. Over 150 000 people were directly affected by the initiatives, with 30 000 actively participating in their success. “For many, these simple initiatives were a real eye opener and have inspired those involved to work to make the changes permanent,” notes Reiter.

To help with these efforts, the project has developed a list of best practices for communicating about the importance of public spaces. They also published [fact sheets](#) and [recommendations](#) that urban planners can use to design child-friendly streets and for simplifying the approval procedure for creating car-free roads. All material is freely available via the project website.



Our goal is to create a space for people, especially children, and not for machines.

In line with the European Green Deal

Using the results obtained during its demonstration initiatives, the project set its sights on getting the EU to take action to end the discriminatory distribution of public space, particularly in densely populated urban areas. “The issue of fair use of public space is directly linked to cleaner, more active mobility and is therefore fully in line with the [European Green Deal](#),” adds Reiter.

The project worked with its partner cities to implement measures that promote the fair use of public spaces. Researchers also talked with other cities interested in learning about how they can create liveable public spaces.

“As the need for sustainable public spaces becomes more and more important, I am confident that we will soon see cities across Europe begin to adopt many of the concepts developed during the CIVITAS Metamorphosis project,” concludes Reiter.

PROJECT

CIVITAS Metamorphosis - Transformation of neighbourhoods in a child-friendly way to increase the quality of life for all citizens

COORDINATED BY

Stichting Breda University of Applied Sciences in the Netherlands

FUNDED UNDER

H2020-EU.3.4.

CORDIS FACTSHEET

cordis.europa.eu/project/id/723375

PROJECT WEBSITE

metamorphosis-project.eu/



Focus on parking management boosts urban planning

Intelligent parking management is critical to making cities more attractive and safer for citizens. New recommendations and an innovative auditing tool could help municipalities put this into action, and significantly boost their sustainable mobility plans.

Municipal policymakers have tended to address parking issues in a reactive manner. When faced with a lack of parking spaces, for example, many towns and cities have simply increased the number of parking spaces. “The thing that has often been forgotten about parking management is that it is not just about addressing parking supply,” explains [CIVITAS Park4SUMP](#) project coordinator Patrick Auwerx from Mobiel 21 in Belgium. “It is also about managing demand. All too often, parking policy has not been properly integrated in [sustainable urban mobility plans](#) (SUMPs).”

Need for better parking management

The EU-funded CIVITAS Park4SUMP project set out to change this policy mindset. “Parking regulations – different tariffs, off-street parking and expanding parking zones, etc. – are powerful



Parking regulations – different tariffs, off-street parking and expanding parking zones, etc. – are powerful policy instruments, and we wanted to focus on these.

policy instruments, and we wanted to focus on these,” says Auwerx. A total of 16 cities – from Norway to Albania – teamed up to share and develop best practices in the field of parking management. These included communicating clearly about parking management measures in an understandable way, and ensuring that parking rules and fines are reasonable, balanced and effectively enforced. Another key best practice was ensuring that revenues from parking fees and fines are invested in sustainable urban mobility.

Citizen participation in developing parking management measures was also found to be helpful in ensuring acceptance of and compliance with new measures. In addition, digitalisation was shown to improve the public reputation and personal job satisfaction of parking enforcement personnel.

Sustainable mobility best practices

Through sharing and implementing these best practices, [all 16 CIVITAS Park4SUMP participating cities](#) were able to improve their parking policies and establish parking management as central to their SUMPs. Within the project, some 55 000 new parking places were regulated, with 3 239 parking spots successfully reallocated for other use. Reducing subsidies for parking spaces, while charging for existing parking in the form of fees or fines, helped to generate income for municipalities. “This is what we call the earmarking principle,” adds Auwerx. “During the project, cities like Krakow were able to reinvest such income into [sustainable mobility](#) measures, thus helping to encourage a modal shift.” A number of [policy recommendations](#) have since been put forward. For example, municipalities should implement a maximum cap on how many parking spots a new building or development is allowed to provide, and think about putting in place more Park & Ride facilities, car-sharing possibilities and cycling lanes.



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Auditing national parking policies

The 16 participating cities are still putting into practice many of the CIVITAS Park4SUMP findings, with insights now being shared across Europe. Central to this is the [ParkPAD](#) audit tool, a key deliverable of the project. This tool gives municipalities the opportunity to bring in a national auditor to assess current parking management policies and practices, and put forward tailored recommendations. "This is important because national laws differ," notes Auwerx. No fewer than 22 European cities have already carried out a ParkPAD audit, demonstrating the replicability and scalability of the tool. Nonetheless, there is still a lot of work to be done. The CIVITAS Park4SUMP project estimates that 15-20 % of smaller and medium-sized European cities still have no regulated parking in place. The hope is that by encouraging the better integration of managed parking into SUMPs, citizens will begin to see noticeable improvements in their urban environment.

PROJECT

CIVITAS Park4SUMP - Actions demonstrate how CIVITAS Park4SUMP will lead to achieve sustainable transport in urban areas by strategically integrating innovative parking management solutions into SUMP policies

COORDINATED BY

MOBIEL 21 VZW in Belgium

FUNDED UNDER

H2020-EU.3.4.

CORDIS FACTSHEET

cordis.europa.eu/project/id/769072

PROJECT WEBSITE

park4sump.eu/



Unconventional and multidisciplinary: creating a Europe-wide conversation around mobility

Philosophers, experts and stakeholders depart from past practices to envision a value-based framework that will guide transport policy decision-making.

Environmental and human needs coupled with rapid advances in technology have set the stage for a new age of transport and mobility across Europe. To guide the steps of all stakeholders, including legislators, industrial players and ordinary citizens, the EU-funded [REBALANCE](#) project took a close look at the needs and values of contemporary society. To facilitate this process and to incorporate as many views as possible, the project sought voices from a myriad of fields. While other foresight studies have focused primarily on technology applications in the transport sector, REBALANCE used four contrasting models of mobility culture to ignite thinking. The essential features of each model were: strength, justice, connection and speed. Current European mobility culture prioritises speed, but REBALANCE thinkers agreed that Europe would be better served by aligning mobility culture with the values of justice and connection. What emerged were documents that clearly enunciated a future-focused set of European values concerning mobility. According to project coordinator Andrea Ricci: "The resulting shared vision has the overarching objective of imagining a new transport paradigm that reclaims the proper place of culture in the policy-making process."

A roadmap to the future

Among the documents produced by REBALANCE is a roadmap describing current European mobility culture and considerations for

determining what that culture should look like in the future. While the project's vision for the future of EU transportation is radical, the roadmap offers practical, immediately applicable steps for transforming transportation. The approach taken and the conclusions reached by REBALANCE are far-reaching and Ricci recognises that: "While revolutionising the current paradigm is urgent, it could lead to a complete impasse in the political dialogue and arguments of utopianism." Consequently, the team chose to present their work in the form of a manifesto. It offers a comprehensive critique of current mobility culture and builds on the roadmap to define the beliefs and values that should drive future decision-making.



The resulting shared vision has the overarching objective of imagining a new transport paradigm that reclaims the proper place of culture in the policymaking process.

Prioritising values

The starting point of the project was the consensus that the current mobility culture of Europe is environmentally unsustainable as well as detrimental to social living conditions. It is easy to see that a mobility culture dominated by vehicles run on fossil fuels is damaging to the environment. To recognise the impact of mobility on quality of life requires deeper consideration. The work of REBALANCE centred caring and mindfulness in the discussion of mobility. The team determined that a reduction in compulsory travel would do much to transform mobility culture in Europe. Furthermore, participants advocated for the decoupling of policy decisions from the valuation of time savings. They recommended that [slow movement](#) should also be integrated into the values guiding European transport. The process and the players involved in REBALANCE represent a significant departure

from other foresight studies concerning mobility. However, our rapidly changing world and the role of transport in it demand broad thinking around values and beliefs. The paradigm shifts proposed by the project, if adopted, will put European mobility on a path that is both more humane and more environmentally friendly.



PROJECT

REBALANCE - future moBility vALues ANd CulturE

COORDINATED BY

Istituto di Studi per l'Integrazione dei Sistemi (ISINNOVA) – Società Cooperativa in Italy

FUNDED UNDER

H2020-EU.3.4.

CORDIS FACTSHEET

cordis.europa.eu/project/id/101007019

PROJECT WEBSITE

rebalancemobility.eu/



Placing citizens at the heart of sustainable mobility solutions

Using the co-creation approach, an EU-funded project brings people together to address mobility challenges at the neighbourhood level.



Neighbourhoods are where people's everyday lives unfold – where they live, raise a family, and commute to and from work. Most locals have intimate and detailed knowledge about their immediate surroundings, including the mobility challenges their neighbourhood is experiencing. However, such detailed local knowledge is rarely considered in mainstream mobility planning processes.

We aimed to develop, implement, assess and facilitate learning about new, collaborative ways to address common mobility challenges at the neighbourhood level.

With a focus on tackling common local urban mobility challenges, the EU-funded **CIVITAS SUNRISE** project set out to put citizen-centred policymaking at the heart of urban mobility planning. "We aimed to develop, implement, assess and facilitate learning about new, collaborative ways to address common mobility challenges at the neighbourhood level," outlines Ralf Brand, project coordinator.

To achieve this, people living in six [neighbourhoods](#) (known as the neighbourhood mobility labs) were invited to identify and help to solve what they perceive as pressing local mobility problems. Particular focus was paid to the involvement of under-represented groups such as migrants, women, and older and younger people.

The power of co-creation

Co-creation – as a direct and active involvement of citizens – played a central role in all project activities along all phases of the innovation chain. These included the co-identification of mobility problems, the co-planning/co-selection of solutions, the co-implementation of solutions and their co-evaluation.

“We really tried to fill the ‘co-creation’ buzzword with life and therefore went far beyond typical consultation, involvement or participation processes. This manifested, for example, in the fact that we started by co-identifying problems as they were perceived by the local residents and stakeholders,” outlines Brand.

Residents were also involved in the brainstorming of possible measures, in the prioritisation of actual measures and, as far as possible, the implementation of concrete actions on the ground. “Of course, we also ensured that people were involved in the co-evaluation process to make sure that the results were assessed through the eyes of the local beneficiaries,” adds Brand.

Improving sustainable neighbourhood mobility

One of the project’s key results comes from the neighbourhood mobility labs. They set the foundation of a new, district-level governance approach to mobility, [sustainable mobility planning](#). This builds on the sustainable urban mobility planning concept – a strategic plan addressing transport-related problems in a more sustainable way.

“The CIVITAS SUNRISE consortium also initiated the production of the ‘[Big Messages](#)’ brochure and contributed heavily to it. It encapsulates the findings of four European projects which pursued similar goals,” highlights Brand.

The six neighbourhood mobility labs (in the pilot cities of Bremen, Budapest, Jerusalem, Malmö, Southend-on-Sea and Thessaloniki) led to various [results and recommendations](#). One of the key findings is that co-creation does in fact work well at the neighbourhood level as this is where most daily mobility takes place and where people are invested in having a good quality of life. CIVITAS SUNRISE deliverables and documents for



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the labs can be found on the [SUNRISE Neighbourhood Mobility Pathfinder](#), an inventory of information that local communities can use to set up their own co-creation processes.

Adding to findings, Brand concludes: “We found that it’s important to take people seriously with their mundane, yet existential hopes, concerns, constraints, etc., and acknowledge that their pursuit of happiness is what makes them ‘tick’. Work with them to provide the framework conditions that enable them to be happy; ‘happy’ in the sense of healthy, safe, socially integrated, acknowledged, included, etc.”

PROJECT

CIVITAS SUNRISE - Sustainable Urban Neighbourhoods - Research and Implementation Support in Europe

COORDINATED BY

RUPPRECHT CONSULT-FORSCHUNG & BERATUNG GMBH in Germany

FUNDED UNDER

H2020-EU.3.4.

CORDIS FACTSHEET

cordis.europa.eu/project/id/723365

PROJECT WEBSITE

civitas-sunrise.eu/

Leading the way for gender- and diversity-sensitive smart mobility

Researchers approach the concept of smart mobility by highlighting the need to include equality and diversity in its development.

In the EU transport sector, women are a minority representing about [22 % of the workforce](#). It is a field where women face higher risks and burdens than men because they do not have equal access to, among others, resources, education and job opportunities. Without strenuous efforts, future transport systems will also fail to meet the needs of many potential users, including women, those with disabilities, people on lower wages, children, the elderly and those from ethnic groups, and will further structural inequality.

In this context, the EU-funded [TinnGO](#) project set out to develop gender- and diversity-sensitive smart mobilities and solutions for sustainable European transport. “Our aim was to present gender and diversity in smart transport as a game changer for urban metropolises and provide tools and methods which could be used for operators, employers, designers, planners and policymakers to increase gender- and diversity-sensitive design and decision-making,” explains Andree Woodcock, principal investigator and professor at Coventry University.



Our aim was to present gender and diversity in smart transport as a game changer for urban metropolises.

Bringing change to the transport sector

A paradigm shift is needed so that transport, research and innovation can become more integrated with and responsive to societal, economic and cultural factors. “In terms of creating this paradigm shift, TinnGO’s [outputs](#) include policy briefs, guidelines, gender and diversity action plans, training material and the gender smart mobility charter. This is together with action research of the [10 national hubs](#) which provide a means of

challenging the lack of diversity and the prevailing quantitative approaches to understanding mobility,” outlines Woodcock.

Twenty organisations, including seven higher education institutes and research institutes, four municipalities and nine transport consultants, from 13 countries set up the 10 national hubs located in France, Germany, Greece, Italy, Portugal, Romania, Spain, United Kingdom, and the Baltics and Scandinavia.

“The hubs have gathered gender mobility data, generated intersectional analysis, developed gender and diversity action plans, produced best practices and case studies, designed training materials and tools, co-created solutions and raised awareness of gender-sensitive smart mobility by publishing articles, among other activities,” highlights Woodcock.

Comprehensive observatory for smart mobility

The main output of the project, however, is the development of an [observatory](#) in European transport that is fed by the 10 hubs. “The observatory is being continued and updated by Coventry University and contains reviews, links to articles and resources, as well as educational and training materials from the project,” notes Woodcock. It also includes a range of tools such as the [open data repository](#) – a global repository for gender-related data collections in the transport sector.

“Using the open data repository, we have shared and invited others to contribute gender-disaggregated data to create a foundation for future research, policy and practice,” adds Woodcock.



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Continuing the work

“Applying gender and diversity, spelled out in variables such as age, class, ethnicity and disability, to the field of transport, TInnGO has offered an invitation and a range of methods and tools to take a fresh look at mobility planning and policies as well as research in this area,” reports Woodcock.

Some of the project partners are now continuing the conceptual and methodological efforts to make change happen in local municipalities, design studies and city planning in the context of the [Gender Innovation Living Lab](#) project. This Research and Innovation Action is focused on gender smart innovation and entrepreneurship and living labs methodologies.

“Also a book, *Gender Smart Mobility*, a revised and extended version of the TInnGO roadmap, has been published,” concludes Woodcock.

PROJECT

TInnGO - Transport Innovation Gender Observatory

COORDINATED BY

Coventry University in the United Kingdom

FUNDED UNDER

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CORDIS FACTSHEET

cordis.europa.eu/project/id/824349

PROJECT WEBSITE

tinngo.eu/



Co-designing public transport with disabled citizens

Planners get an accurate assessment of needs and can provide actionable solutions when people with disabilities collaborate in designing public transportation.

Over 80 million Europeans have a long-term disability, which may include physical, mental, sensory or intellectual challenges. Disabled citizens are at high risk for social exclusion, and mobility issues represent one of the greatest barriers to accessing all a modern society can offer. The EU-funded project [TRIPS](#) addressed this issue by involving disabled persons in the design of future transportation solutions.

Inclusivity by design

The project consortium involved teams in seven pilot cities across Europe: Lisbon, Zagreb, Bologna, Cagliari, Brussels, Sofia and Stockholm. Each team in the consortium included

individuals with long-term disabilities, and their work was supported by experts in design methodology, systems integration and privacy issues. According to project coordinator Kristina Andersen: "Working with these groups throughout the project allowed lived experience and a deep commitment to change to guide the project. Teams prioritised goals and developed a co-design method for involving stakeholders in the design of changes that affect them." In addition to including experts who were themselves disabled, a major goal of TRIPS was to survey disabled citizens to determine needs and attitudes about future mobility solutions. The survey collected data from 553 people in 21 countries. Over half of those surveyed lived with a physical disability. Respondents included individuals with vision, hearing, mental and intellectual disabilities.



Assessing assistive technologies

The survey distributed by the project assessed mobility needs using the [Mobility Divide Index](#). This tool considered the following aspects of mobility services: autonomy, travel time, comfort, safety, convenience and affordability. The survey also uncovered attitudes towards future mobility solutions by having respondents rank which solutions they might use. Across the board respondents had a positive view of assistive technologies. These included adaptation of robotics and smart technology such as canes, voice recognition, platforms and ramps. The most popular assistive technology, irrespective of disability, was the [accessible journey planner](#). An accessible journey planner uses technology infrastructure to provide in-depth real-time information to the user. For example, a planner could allow a traveller to know how many seats are available on the next bus and where they are located.


By engaging people who are most affected by changes in transport decision-making in the design process, we avoid bias and promote equity.

Recommendations for transport planning

A journey is not accessible until the entire journey from door to door is accessible. To address this, TRIPS recommended prioritising

accessible journey planners and also recommended promoting ownership of assistive technology and training in how to use it. The most important recommendation from TRIPS is the inclusion of disabled citizens in the transportation design process. Andersen emphasises: "By engaging people who are most affected by changes in transport decision-making in the design process, we avoid bias and promote equity. We also create designs and solutions that are good for everyone. As such, the main deliverable of the project is the TRIPS co-design methodology toolkit, available as an online training programme aimed at citizens, designers and transport providers alike." Social inclusivity is a principle of modern European culture. The TRIPS model for inclusive transportation solutions helps to make it a reality.

PROJECT

TRIPS - Transport Innovation for vulnerable-to-exclusion People needs Satisfaction

COORDINATED BY

Technische Universiteit Eindhoven in the Netherlands

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RESULTS PACK ON SOCIAL INNOVATION

Social innovations are inventive responses that provide solutions to unmet social problems and needs. These innovations can be products, services or models that address societal, business and governmental needs more effectively. This Results Pack highlights 10 projects that illustrate the value and broad scope of social innovation, providing examples of novel approaches and new forms of cooperation to boost economic activity, support citizen well-being, and foster cultural enrichment.



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