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MOBISITIE

INSIGHTS FOR RURAL MOBILITY IN THE NETHERLANDS: LESSONS FROM THE MOBISITIE PROJECT



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INTRODUCTION

Mobisitie has been a two-year research project that addressed a critical gap in sustainable mobility policy: the lack of tailored, locally grounded interventions for rural municipality contexts. Previous projects and policy efforts have often focused on generic solutions without accounting for the fact that each municipality faces unique conditions. Demographic profiles, infrastructure, the availability and quality of public transport, and the presence (or absence) of alternative mobility options can vary widely between municipalities. As a result, a one-size-fits-all approach falls short. Mobisitie recognizes that local challenges demand local solutions and placed this need for specificity at the heart of its methodology.

A unique methodological aspect of Mobisitie was to build interventions around real-life use cases brought in by the participating municipalities themselves. Rather than starting from theoretical models or top-down policy targets, the project began with concrete sustainable mobility challenges experienced on the ground, such as high car dependency, underused shared mobility options, and more generally a lack of overview of available in-house and open-source data. This bottom-up approach ensured that the research was directly grounded in the realities of each municipality, making proposed interventions more relevant, feasible, and impactful. It also created the opportunity for municipalities to co-develop (co-create) solutions that matched their own (policy) ambitions and constraints, while benefiting from shared insights and expertise across the project network.

To support this process, one of the outcomes of Mobisitie was developing a Policy Decision Support System (PDSS) called Ecomobi—a tool that integrates open-source data, in-house data, and communication strategies into one accessible platform. Ecomobi provides the analytical and practical foundation for municipalities to explore sustainable mobility interventions, prioritize actions, and tailor their communication to different target groups.

CO-CREATION WITH STAKEHOLDERS

The co-creation method is not a new one. Complex problems can only be addressed comprehensively if relevant stakeholders are activated to think along. Co-creation, also known as the Living Lab method is an approach that brings stakeholders together for a common co-design, such as identifying the specific elements of a use-case (Riegler, 2025). The questions to be answered during a Living Lab are: (1) why do we want co-creation for this problem? (2) which results do we want to obtain from the co-creation session? (3) who do we want to involve to address the issue(s)? (4) which activities need to be carried out in the co-creation session to achieve the goal?

With these questions in mind, two co-creation sessions were set up to refine and contextualize the mobility challenges faced by the three participating municipalities: Ooststellingwerf, Westerkwartier and Ameland (a West Frisian island municipality). Each municipality entered the process with a broad, initially unspecific use case on mobility. Through a combination of creative, interactive methods, such as brainstorm sessions and structured knowledge exchange, the municipalities were encouraged to reflect on their own experiences and offer input for the other participating municipalities as well as for other stakeholders, such as OV-bureau Groningen Drenthe. This cross-pollination of perspectives, combined with findings from qualitative research conducted by Hanze in this first phase of Mobisitie, enabled the municipalities to sharpen and specify their use cases.

The result was a set of three well-defined sustainable mobility challenges (see Chapter 3) that would serve as a basis for developing a Policy Decision Support System (PDSS).

A second, equally important outcome of these co-creation sessions was the recognition of the need for municipality-specific research—particularly surveys exploring citizens' current mobility habits and their perceived motivations and barriers related to the desired mobility options. These revealed patterns in travel behavior and mobility needs, such as that in Ooststellingwerf car use is dominant, even for short distances, while cycling and public transport are underused due to barriers such as distance, weather, scheduling issues, and limited direct connections. A relevant result for the municipality of Westerkwartier was that shared mobility is known but not widely used, often due to concerns about availability and convenience. These findings help identify where behavioral change is most feasible and which structural conditions need to improve to support citizens' use of the desired mobility options.

A USE-CASE APPROACH FOR BEST VALUE INTERVENTIONS

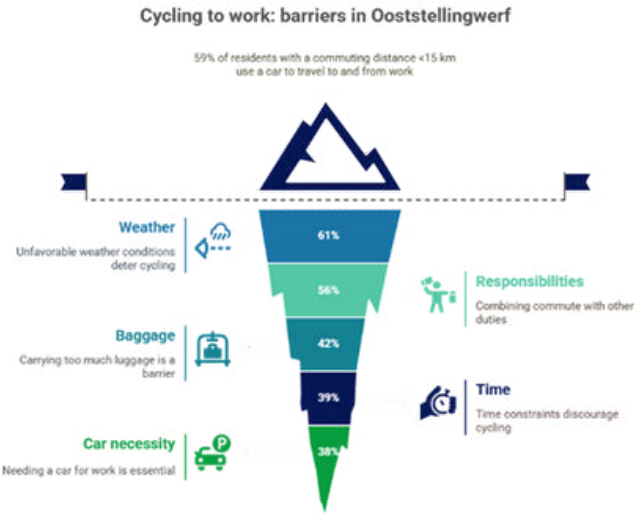


Figure 1. Barriers for cycling to work in Ooststellingwerf (created with Napkin AI)

As mentioned in Chapter 2, one of the outcomes of Mobisitie's co-creation sessions were a set of well-defined sustainable mobility challenges—one for each participating municipality.

The use case of Ooststellingwerf focuses on stimulating bicycle use for short commuting distances. A study conducted in the municipality (Hanze, 2024) indicated that in Ooststellingwerf many trips under 15 kilometers are still made by car, especially work commutes, even though these distances are generally seen as suitable for (e-)cycling (Kennisinstituut voor Mobiliteitsbeleid, 2016).

Common reasons for not cycling include bad weather, combining trips with other responsibilities such as taking children to daycare, having to carry baggage, time constraints, and needing a car for work (see Figure 1).

Within this use case an important aspect is exploring what prevents people from cycling and how communication and local and/or municipal initiatives can help make biking a more attractive option. The PDSS can help civil servants analyse the local context and advise on where and how cycling behavior can best be encouraged.

In Westerkwartier, the use case focuses on encouraging car sharing within residential neighborhoods. Although a few commercial (B2C) shared cars are available near the municipal offices, they are barely used by local residents. Because utilizing commercial shared mobility providers is often not a viable option for rural areas, the municipality is exploring alternatives like peer-to-peer and cooperative car sharing. Research by Mobisitie partner Newcom suggests that, for shared transport, potential users are mainly motivated by cost savings (64% for shared bike; 71% for shared scooter), flexibility (81% for shared scooter), and speed (50% for shared bike; 76% for shared scooter), while key barriers include lack of guaranteed availability (68% shared bike; 80% shared scooter), need for planning (71% shared car), and preference for the convenience of a private vehicle (78% shared bike; 74% shared scooter; 80% shared car) (Newcom, 2024).

Keeping this in mind, the idea is to support residents in sharing vehicles among themselves, with the municipality playing a facilitating role (e.g. hosting a sharing platform). The PDSS can help identify which neighborhoods have potential for peer-to-peer or cooperative car sharing and provides insights into both behavioral and logistical barriers, as well as communication strategies.

In Ameland, a relatively small (fewer than 3,800 permanent inhabitants) yet popular tourist destination (more than 500,000 visitors per year), the challenge is to make tourism-related travel/mobility more sustainable. Research suggests that although most cars brought to the island by visitors are barely used during their stay, many tourists (74%) still bring them—mainly for convenient transport from and to the ferry, and specifically to transport luggage (see Figure 2) (Wing, 2019). This use case looks at how to reduce car use among tourists by exploring improvement and the promotion of public transport options to the ferry, and by offering as well as communicating alternatives for luggage transport from the pier to accommodations.

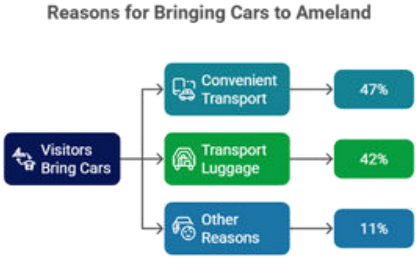


Figure 2. Reasons for bringing cars to Ameland (created with NapkinAI)

THE PERCEIVED CONVENIENCE OF PRIVATE VEHICLES IS A DIFFICULT BARRIER TO BREAK.

COMMUNICATING WITH IMPACT

VALIDATION OF GOAL SPECIFIC COMMUNICATION ADVICE

Tailored communication is always preferred to reach target audiences best. This design requirement was an important element from the start of the research: how to communicate sustainable mobility related advice to our audiences in a way that feels personal to them? To go about this challenge is a systematic way, a three-step validation study was designed and implemented.

THE FIRST STEP entailed creating rich and comprehensive communication labels from secondary data (see Figure 3). These labels summarized broad traits and attitudes across generational cohorts (Baby Boomers, Gen X, Millennials, Gen Z), their preferred use of (social) media, the impact of the social environment, or midstream audiences (such as schools, churches, and sports clubs) on helping with delivering sustainability messages, and the pro's and con's of various mobility options.

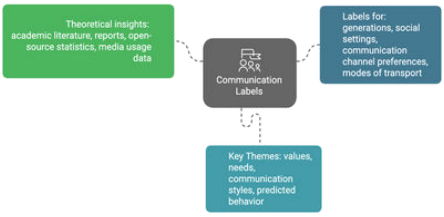


Figure 3. Conceptualizing the communication labels, step 1 (created with Napkin AI)

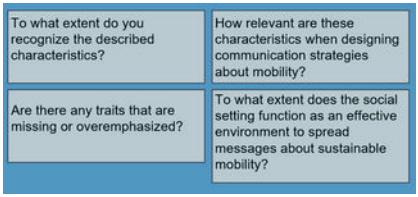


Figure 4. Main topics covered in the expert interviews

THE SECOND STEP entailed verifying these theory-based labels with communication experts. In a qualitative study, three communication experts commented on the validity of the descriptions, traits or behaviors that were either missing or were overemphasized, their personal opinion on the relevance of the descriptions when designing communication about mobility options, and finally, their personal opinion on the role of the social environment/midstream audiences.

MAIN FINDINGS: EXPERTS FOUND THE COMMUNICATION LABELS DRAWN FROM SECONDARY DATA AS RECOGNIZABLE AND VALIDLY CAPTURING THE GENERATIONAL DESCRIPTIONS FROM SECONDARY DATA.

THE THIRD AND FINAL STEP entailed a final refinement of the labels with the help of survey research. Through a multiple-choice questionnaire, inhabitants from the Municipality of Ooststellingwerf (*N* = 943) were asked to indicate their levels of agreements or disagreement with assumptions about their needs, values, preferences, the influence of the social environment on their choices, and social media usage.

By and large, the survey results indicate that healthy and sustainable choices, and choices that benefit society and are valued by one's friends are generally perceived as more desirable across all generations, and even slightly more strongly endorsed by older generations. But when it came to making financial sacrifices to achieve these choices, this was seen as an important impediment for all respondents. Very rarely would respondents indicate the desire to pay a slight premium (in our case, 1-10% more) for this. A significant majority of participants even indicated that they would not be willing to pay anything extra for choices that were either healthy (22%), sustainable (29), benefit society (35%) or are valued by friends (70%). Exploring the role of the social environment revealed very limited influence on choices made by other social groups such as celebrities (2%), social media (7%), trends (4%), various associations (9%) and school (18%).

Finally, the use of social media in our sample seems to be significantly skewed towards younger people. In other words, younger generations indicate to be more present online (Facebook, LinkedIn, Instagram, X, etc.) when compared to older generations, who in turn prefer more traditional media such as TV and newspapers.

With this 3-step validation process we achieved both face validity and content validityand were able to create a data-driven understanding of the users and their communication and mobility needs (Mohd Sidik, 2018; Laubheimer, 2024). Incorporating these labels into the tool (Ecomobi) allows municipalities to give a more tailored advice to their inhabitants. Example personas (see Figure 5) showcase how such profiles can further be generated to support decision makers in understanding different inhabitant groups and formulating advice for them. This functionality will be available in Ecomobi in a later stage, while the complete labels are already fully integrated in the tool.



Figure 5. Marco the Millenial, mock-up persona created after survey validation (created with AI)

LIMITATIONS: WHILE THE SURVEY RESULTS INDICATE A CLEAR GAP BETWEEN PERCEPTION AND ACTION, THESE RESULTS SHOULD BE TREATED WITH CAUTION BECAUSE (1) PRIMARY DATA WAS ONLY COLLECTED FROM ONE MUNICIPALITY, AND (2) THE SAMPLE WAS OVERREPRESENTED BY OLDER GENERATIONS (IN OUR SAMPLE THOSE BORN BEFORE 1964).

FROM IDEAS TO PROTOTYPING

HANDS-ON WITH THE TOOL

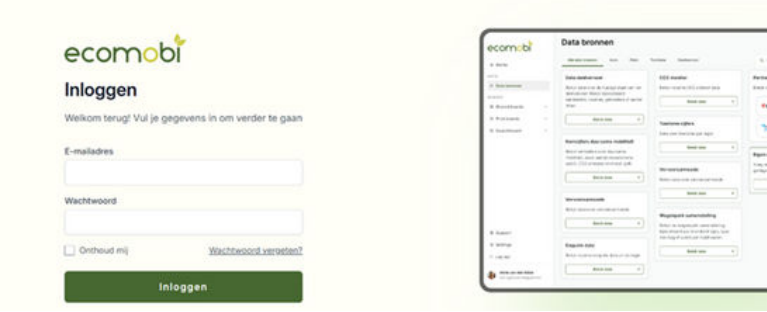


Figure 6. The login page of Ecomobi on dashboard.ecomobi.nl

Following the refinement of the use cases and collection of local data, the development of Ecomobi (formerly known as the PDSS – Policy Decision Support System) moved into a multi-faceted prototyping phase. In collaboration with the strategic digital agency Concept7, a series of low- and high-fidelity prototypes (wireframes and interactive Figma models) were created. These prototypes were tested and refined in close coordination with researchers from Hanze and civil servants from the participating municipalities.

Throughout multiple design and feedback sessions, municipalities provided valuable input on usability, functionality, and visual design. Their practical insights—ranging from what kinds of data are most useful in daily decision-making to how they prefer to navigate information—played a key role in shaping the interactive digital tool, or 'dashboard', that became Mobisitie's PDSS. This iterative process ensured that Ecomobi would not only be rich in content but also truly usable and relevant for local policy professionals.

The result is a hands-on, data-driven platform that helps municipalities explore local mobility (behavior) to design tailored interventions. Ecomobi integrates survey results, behavioral drivers, communication profiles, and open-source data to generate localised insights and recommendations. Key features include:

- A multitude of data visualisation options
- Private and shared boards where data can be collected, overlapped and shared in one secure place
- AI-generated data descriptions that help users interpret complex (visual) data quickly and clearly
- Goal-specific, tailored communication advice.

By grounding the design in real-world feedback through co-creation and iterative testing, Ecomobi bridges the gap between complex data and actionable local strategy.

DISCUSSION & RECOMMENDATIONS

DISCUSSION The Mobisitie project has shown the importance of tailored sustainable mobility interventions to the unique realities of rural municipalities. By focusing on real use cases, the project demonstrated that mobility transitions can best be explored by responding directly to social, geographic and infrastructure conditions of individual municipalities. A key strength of this project has been its co-creation approach with municipalities. At the same time, the project revealed some limitations. These co-creation sessions with the municipalities were limited in scope and number, and the survey research to validate the communication labels was conducted only in one municipality and had an overrepresentation of older adults. This reduces the generalizability of findings across contexts and raises questions about how well the outcome reflects the perspective of underrepresented groups, such as lower-income households. Furthermore, while Ecomobi set out to be a decision support tool, its effectiveness in leading to long-term behavior change has not yet been tested.

Despite these limitations, Mobisitie still contributes valuable insights for rural mobility policy: local context matters, communication strategies should be tailored to different demographic groups, and interactive tools can strengthen municipalities' capacity to design evidence-based interventions.

RECOMMENDATIONS We recommend municipalities to always adopt a use-case method as a standard when designing mobility policies. Starting from local challenges rather than abstract targets ensures that interventions are felt as relevant and feasible by residents. We also recommend future initiatives of co-creation to include more stakeholder groups, such as youth, low-income households and seasonal residents. This can lead to more socially robust solutions in the future. The survey validation process highlighted the need for stronger empirical foundations. Future projects should expand data collection across municipalities and include a more heterogeneous sample with respect to age.

This first step in developing communication labels in Ecomobi were promising, but the real-world effectiveness of the tool would be increased if municipalities could use it to also generate communication campaigns with minimal effort. The integration of AI tools into Ecomobi would be a next step in this effort.

THE CHALLENGE REMAINS IN BRIDGING THE GAP BETWEEN ATTITUDES AND BEHAVIOR: MUNICIPALITIES SHOULD FOCUS ON MAKING SUSTAINABLE OPTIONS MORE AFFORDABLE AND CONVENIENT, CONSIDER INCENTIVE SCHEMES TO REDUCE COST BARRIERS AND EXPLORE WAYS TO LOVER THE THRESHOLD FOR CHANGE WITHOUT REQUIRING RADICAL LIFESTYLE CHANGES.

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