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Evaluating the socioeconomic effectiveness of innovative rural mobility solutions

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Table of contents

Report summary 4
1. Introduction and background 5
2. Approach 6
2.1 Methods used for cost-effectiveness calculations 6
2.2 Cost-effectiveness evaluation design for mobility solutions 12
2.3 Measuring the social benefits of innovative mobility solutions 21
3. Results 26
3.1 Vidzeme Planning Region - Transport on Demand 26
3.2. Trelleborg Excursions for older residents 31
3.3. Vejle - Ride Sharing 33
3.4 County of Cuxhaven - Transport on Demand and Mobility Centre 35
3.5 Diaconie of Schleswig Holstein - Mobile counselling service 40
4. Analysis and concluding remarks 43
4.1 Analysis of results 43
4.2 Conclusions, limitations and the road ahead 47
References 48
Appendix I. Questionnaires for partner regions 51
Appendix II. Example of promotional flyer 79

Table of figures

Figure 1. Measurement of Economic Efficiency and Effectiveness 7
Figure 2. Cost effectiveness evaluation design for mobility solutions 15
Figure 3. Situation in rural areas 26
Figure 4. Services provided in Mazsalaca Region 27
Figure 5. Services provided in Alūksne Region 28

Figure 6. Age, gender and activity profile of respondents to user surveys in the County of Cuxhaven 37
Figure 7. Trip purpose, County of Cuxhaven user surveys 38
Figure 8. Transport options if the service was not available, Country of Cuxhaven user survey 38
Figure 9. Impact of the service on work and study situation, County of Cuxhaven user survey 39
Figure 10. General accessibility benefits of the service, County of Cuxhaven user surveys 40
Figure 11. Reflections on the participatory process, Hallig Hooge residents survey 41
Figure 12. Reflections on the introduction of the mobile counselling and support service on Hallig Hooge 42
Figure 13. Statistics for MAMBA partners 44
Figure 14. 1 km costs and passenger-kilometre costs for mobility solutions in partner regions 44
Figure 15. Factors that affect economic efficiency of services 46

Table of tables

Table A. Capital costs (EUR) 16
Table B. Operating costs (EUR) 16
Table C. Income sources 18
Table D. Variables that affect operating costs 19
Table E. Evaluation of outcome indicators 20
Table F. Description of socioeconomic factors that may be influenced by innovative rural mobility solutions 22
Table G. Statements and questions for measuring socioeconomic factors 23
Table H.Passenger report (partly) for Vidzeme Planning Region ToD service 29
Table I. Capital costs for Vidzeme Planning Region ToD service 29
Table J. Operating costs for Vidzeme Planning Region ToD service 29
Table K. Variables that affect operating costs for Vidzeme Planning Region ToD service 30
Table L. Passenger-kilometre costs for Vidzeme Planning Region ToD service in EUR 30
Table M. Passenger report (partly) for Trelleborg Municipality mobility solution 32
Table N. Operating costs for Trelleborg Municipality mobility solution 32
Table O. Variables affecting operating costs for Trelleborg Municipality mobility solution 32
Table P. Output indicators for Trelleborg Municipality mobility solution 32
Table Q. Passenger report (partly) for NABOGO mobility solution 33
Table R. Operating costs for NABOGO mobility solution 34
Table S. Variables that affect operating costs for NABOGO mobility solution 34
Table T. Passenger-kilometre costs for NABOGO mobility solution 34

Table U. Passenger report (partly) for County of Cuxhaven mobility solution 35
Table V. Capital costs for County of Cuxhaven mobility solution 35
Table W. Operating costs for County of Cuxhaven mobility solution 36
Table X. Variables that affect operating costs for County of Cuxhaven mobility solution 36
Table Y. Passenger-kilometre calculations for County of Cuxhaven mobility solution 36

Report summary

Providing transport in rural areas, particularly for those who face mobility barriers, tends not to be financially profitable. Despite this, when viewed in light of their broader social and economic benefits, innovative rural mobility solutions may be considered cost-effective overall. This study aims to find support for this notion based on an analysis of the socioeconomic benefits of a selection of innovative rural mobility solutions piloted in the MAMBA project. It proposes an innovative approach to measuring socioeconomic effectiveness, including economic analysis based on a cost-effectiveness framework and social analysis based on an assessment of the most important outcomes of increased mobility in a rural context.

Challenges in the data collection phase made it difficult to make conclusive comparisons between the different solutions. Despite this, our findings do point to some factors likely to influence cost effectiveness. These include:

- **The number of passengers on the trip**. The more passengers on a trip, the lower the cost per passenger-kilometre.
- **Geographical distribution of population.** The greater the distance to the final destination, the higher the cost of 1 km.
- **Terms of the service contract** that include the carrier's fixed and variable costs. If the share of fixed costs is relatively high, then in the case of few trips, the cost per km is higher.

In addition, the results of the social surveys provide some support for the broader social and economic benefits of innovative rural mobility solutions. Particularly relevant is the importance of rural mobility services in supporting some users to be economically active and others to remain in their own home. Though this finding may relate to only a small number of users, the nature of these benefits may be enough to justify the cost of the mobility solution. Continued development and further application of this methodology would be useful in gathering further support for the cost-effectiveness of innovative rural mobility solutions, paving the way for more stable financial support for the development and ongoing operation of mobility and accessibility services in rural areas.

1. Introduction and background

Demographic trends such as population ageing and outmigration of young people create challenges for public service provision, threatening the accessibility of services, goods, and social life in many rural areas in the Baltic Sea Region (BSR). This, in turn, affects the attractiveness of rural areas, often further exacerbating these trends. The MAMBA project aimed to address this by focusing on maximising mobility and accessibility of services in regions facing demographic change. Fifteen partners in six countries across the BSR implemented various types of innovative mobility solutions. These included "people to service" solutions such as ride sharing, car sharing, transport on demand (TOD) and Mobility as a Service (MaaS). They also included "service to people" solutions, such as a mobile counselling service and a coworking space.

Many of these solutions were considered "pilot activities", initially planned to run for the duration of the project, with a view to continuing if they were successful and the resources could be found. Developing methods to demonstrate the success of the activities was thus vital to securing the long-term sustainability of the mobility solutions. But how do we define success?

Providing transport in rural areas, particularly for those who face mobility barriers, tends not to be cost-effective. As such, it is perhaps more useful to take a broader view, considering the indirect socioeconomic benefits of such solutions, rather than simply the potential for direct economic gain or loss. Such benefits may include decreased social isolation, improved long-term health outcomes, and reduced youth unemployment. Though more difficult to quantify, these outcomes can also result in cost savings in the long term. Given this, effective methods to evaluate the impact of innovative rural mobility solutions on these factors, used *alongside* a more traditional cost-benefit approach, offers the opportunity for a richer assessment of the value that can be derived from investments in rural mobility.

This activity aims to establish a general methodology and main indicators to evaluate the socioeconomic effectiveness of the mobility solutions piloted in the partner regions at the project level.

It builds upon the four pre-studies in this Work Package, which define indicators of economic sustainability (Līviņa *et al.*, 2020) and consider a range of individual and contextual factors that may influence user acceptance (Randall *et al.*, 2020). The evaluation framework has been applied to five of the mobility solutions as test cases. It should be noted that the original plan was to use the framework for all of the solutions but that this was not possible due to limitations related to Covid-19. In place of this work, the evaluation team has worked one-on-one with each partner region to provide them with the tools necessary to carry out their evaluation when it becomes possible.

The target audience for this methodology is the stakeholders involved in the mobility solution: municipalities, policymakers, and service providers. Use of this methodology can contribute to the safeguarding of the solutions following the conclusion of the MAMBA project.

2. Approach

The mobility solutions developed by the MAMBA partner regions respond to specific social, economic, legal and territorial preconditions (see: Ellner *et al.*, 2020; Līviņa *et al.*, 2020; Randall *et al.*, 2020). As such, the solutions are as diverse as the regions themselves. To accommodate this diversity, a tailored approach to assessing the effectiveness of the solutions was developed in dialogue with the partners. The framework includes two components: a cost-effectiveness analysis and a social benefits analysis. These are described in turn below. But first, we provide a general explanation of the methods used for cost-effectiveness calculations and an overview of the socioeconomic benefits that innovative mobility solutions may contribute to.

2.1 Methods used for cost-effectiveness calculations

Cost-effectiveness calculation methods are used in project financial management to manage project assets and liabilities. The aim is to achieve the project's objectives at the lowest cost and to recoup the maximum possible benefit from the investment. The basic idea is to identify the desired changes and expected results, to invest resources to achieve the desired results, and to assess whether the desired results have been achieved or not.

Traditionally, public administrations have focused on the management of the initial input resources, paying less attention to the results achieved or the quality of execution. With growing public awareness, however, the public sector is increasingly oriented towards providing evidence for the successful implementation of policies. This has resulted in increased interest in the use of project financial management methods to evaluate the activities of State institutions and ensure the effective implementation of public funds. However, determining and objectively measuring performance indicators, particularly with respect to outcome and impact indicators, is quite complicated (Grossi, Reichard & Ruggerio, 2016).

Public sector financial management is not just numbers, but interests and values that create numbers. It is also crucial that these figures are made available to the public in an accessible and relatable manner. Actual proof and answers to the following questions are required: What work has been done, and at what cost? What is the benefit? What is the difference between situations with and without these actions?

Answers can be discovered during the performance of an efficiency and effectiveness evaluation. As demonstrated in Figure 1, there is a significant and important difference between these concepts. Economic efficiency shows how much each output unit costs and is mainly used for making economic-efficiency calculations and for benchmarking. In contrast, effectiveness reflects the quality of output - the extent to which the outcome and its desired quality have been achieved. Demonstrating economic efficiency and effectiveness is important in ensuring the sustainability of activities that rely on public funding.

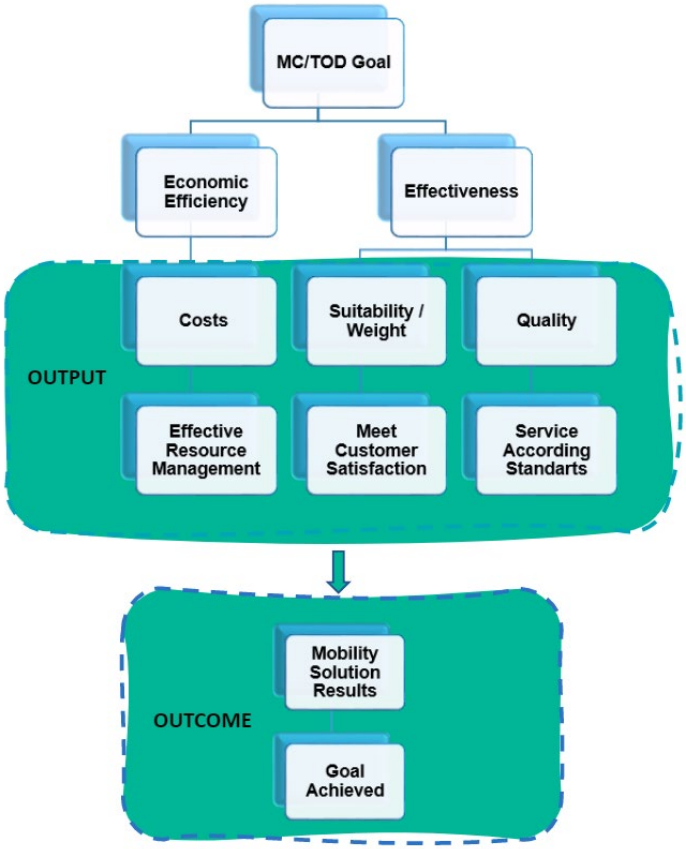

Figure 1. Measurement of Economic Efficiency and Effectiveness. Source: State Government of Victoria, 2015.

There are several methods through which to determine the cost-effectiveness and financial sustainability of projects. One of them is **cost-benefit analysis (CBA)**. The main principle of CBA is to convert both costs and benefits in monetary terms and then compare whether the share of benefits is higher than the share of costs. In other words, CBA identifies and calculates the monetary value of project costs, weighing those costs against the monetary value of expected project benefits.

Typically, analysts subtract costs from benefits to obtain the net benefits of the project. If the net benefits are negative, they are referred to as net costs.

Net Benefits = Total Benefits – Total Cost.

CBA can be used in several different ways. If the budget is pre-determined, the estimated benefits that can be achieved with that budget can be compared for alternative projects. The preferred project would then be the one that delivers the greatest benefit within the specified cost. On the other hand, if the aim is to achieve a particular benefit and the budget is flexible, the estimated costs required to achieve that benefit can be compared for alternative projects. The preferred project would then be the one that delivers the lowest cost while providing the expected benefit (Mackie & Worsley, 2013; Mackie, Worsley & Eliasson, 2014; Worsley & Mackie, 2015).

Additionally, Benefit/Cost (B/C) ratio can be used to compare the relative value of different alternative projects. Various projects may be prioritised (in terms of economic efficiency), assessing each project individually and calculating the B/C ratio for each project. The projects with the highest B/C ratio would be ranked as the most efficient.

This method works most accurately during the evaluation of investment projects, where the benefits obtained can be clearly defined and thus expressed in monetary terms. In recent years economists have also developed techniques for monetising non-market impacts and have adopted standardised values for travel time, crash damages, and social and environmental effects.

CBA is most applicable for evaluating transportation projects that meet the following criteria:

- The potential project costs are significant enough to justify spending resources on forecasting, measuring and evaluating the expected benefits and impacts;
- The project motivation is to improve the transportation system's efficiency at serving the travel and access-related needs, rather than to meet some legal requirement or social goal;
- Environmental or social impacts that are outside of the transportation system efficiency measurement are either: (a) negligible in magnitude, (b) measurable in ways that can be used within the benefit-cost framework, or (c) to be considered by some other form of project appraisal outside of the CBA.

In contrast, there are situations when CBA could be too expensive or unnecessary to use for justification of the transportation project, such as:

- Projects motivated primarily by social justice and equity concerns (e.g. the provision of some minimum level of basic (road, transit, air or sea) access for isolated or poorly served communities);

- Projects focusing on reducing the negative economic impact of limited mobility on socially vulnerable groups (such as low-income earners, elderly, or minority groups).

During the last few decades, standardised methods have been developed to evaluate transportation projects, including software programs such as MicroBenCost and HDM-4 (CalTrans 2006; World Bank, 2011). These are generally designed to assess a particular type of transport improvement, such as highways or transit service, and are usually inappropriate for comparing the net benefits of improvements to mobility solutions because they do not account for many significant social impacts but concentrate on economic benefits.

Particular concerns with the CBA method must be considered. Since CBA focuses on the comparison of total benefits and total costs in monetary terms, some specific aspects of a given project might be either hidden or missed. In some cases, the attractiveness of projects needs to be considered in terms of its ability to reduce specific key objectives, such as air pollution reduction, creation of new jobs or improving mobility for physically, economically and socially disadvantaged people. In such cases, where the project is more focused on achieving goals for particular social groups, the measurable benefits in monetary terms could be difficult to identify or measure. As such, CBA is not necessarily well suited to innovative rural mobility solutions.

In contrast, **cost-effectiveness analysis (CEA)** measures environmental or social benefits per monetary unit spent. CEA is used to identify the most cost-effective option for achieving a set of predefined objectives. The most cost-effective option is identified as that with the lowest present value to meet an objective to the same level.

Analysts can obtain a project's cost-effectiveness (CE) ratio by dividing costs by what is termed units of effectiveness:

Cost-Effectiveness Ratio = Total Cost / Units of Effectiveness

Units of effectiveness are simply a measure of any quantifiable outcome central to the program's objectives (e.g., euro/passenger kilometre, passenger satisfaction level per trip).

The significant difficulty with CEA is that it provides no value for the output, leaving that to the subjective judgment of the policymaker. At the same time, this more subjective aspect can make it ideal for assessing projects with benefits that are difficult to express in monetary terms. As such, it could be the right choice when it comes to innovative rural mobility solutions.

Although some view CBA as a superior technique, it is difficult and time-consuming. CEA may provide a good starting point by requiring the evaluator to identify the most crucial outcome and relate that outcome to the dollars spent on the project (Cellini & Kee, 2015).

CBA and CEA are tools that mobility solution stakeholders can use to assess the effectiveness of mobility solutions, as well as an operation of a mobility centre, identify the level of achieved outputs and outcomes, as well as use the results for improvement activities. Additionally, these tools make it possible to gain crucial information for politicians and policymakers.

Regardless of which method will be used to evaluate mobility solutions, the following questions must be addressed before starting the assessment:

- What is the purpose of the evaluation?
- Who needs results, and to what extent?
- What needs to be measured?
- How will the analysis be performed?

The following guidelines are relevant when beginning any type of analysis (the how):

- Decide on whether a retrospective or prospective data collection is appropriate
- Decide on the timeline (e.g., recommend analysing costs for the equivalent of a year)
- Use reasonable estimates when precise numbers are not available or not easily obtained.

The research could provide completely different results for each case. It must be taken into account that different areas have various external environmental factors, such as economic, social, cultural factors, different technological and infrastructural solutions. There are differences in topography, climate and seasonality. The analysis should be carried out in the context of these factors, regardless of the chosen method.

When evaluating the outcome of the mobility solution, the identification and selection of factors influencing it are crucial. Various socioeconomic benefits can characterise the effect of the project.

Next, we will mention **several types of indirect socioeconomic benefits** that could be taken into account when evaluating the cost-effectiveness of different activities, including mobility solutions. Please remember that further described benefits can be regarded only as an indirect consequence of the performed activity, as the planned long-term outcome depends on different factors related to the external environment.

Since a large number of factors might influence the project outcomes, the authors propose summarising them and sorting them into groups that could help reflect fully the factors influencing the outcome (see Table E at the conclusion of this section). The selection, definition and evaluation of factors must be carried out by experts in the various fields of local government in each partner region.

Increased business activities in the region

The local economy is often dependent on the activities of local small businesses. In turn, small businesses gain a competitive advantage through the local economy and marketing. The main benefit of thriving businesses to the local economy is increased employment. The employment rate affects many other living standards, such as the income of the population, the availability of housing, and the entrepreneurial ability to start new small businesses. Companies pay a significant share of all taxes, such as corporate income tax, property tax, employer social tax, while employees pay personal income tax. A larger share of businesses and economically active people lead to increased tax revenue for a municipality or region.

Improvements to community life

Adequate access to essential economic and social resources, such as employment, education, medical services, social welfare and recreation is important in rural areas, as elsewhere. Tax revenues are a crucial element of the socioeconomic development of rural areas and allow local governments to develop local infrastructure and essential services, restore and improve villages, rural landscapes, and cultural and natural heritage. As living standards rise due to the increase in local employment, a broader demand and supply of various services in the local area may also emerge. For example, adding a folk theatre or cinema to a small town provides entertainment to locals while at the same time generating revenue.

Increased property value

Mobility and accessibility are two critical factors affecting everyday life, social inclusion, and businesses' competitiveness, as well as the real estate value. The availability of mobility services has a significant impact on the quality of life in rural areas which may translate to greater neighbourhood appeal and higher property values.

This benefit should be considered in the context of social justice when evaluating the cost-effectiveness of mobility solutions, especially when there are significant differences in the availability of mobility services between different areas, and a clear imbalance is created. Property owners who have access to a high level of mobility may benefit from subsequent increases in the value of their property. On the other hand, people living in areas with poor mobility may be at a double disadvantage: limited mobility and low property value. As mobility services are generally subsidised by public money, fair and equal access to these services is a vital policy goal (Medda, 2012; Martinez & Viegas, 2009).

Boost the tourism sector

Tourism services have a positive impact on the economy, society, and local growth, progress and development. It increases employment and revenue by, firstly, creating demand and, secondly, creating supply in several sectors. Tourism provides earning opportunities by promoting the development of the area. Tourism presents vast economic potential including, employment, currency exchange, imports and tax revenues (Stainton, 2020).

Increased interregional traffic flow

Cooperation between rural municipalities and cities makes it possible to improve and create new services significantly and increase efficiency and service levels in rural areas. Regional and interregional cooperation may provide opportunities for joint planning and procurement of mobility services, as well as facilitating the exchange of information on the implementation of mobility, both of which have the potential to increase interregional transport flows (Eckhardta *et al.*, 2018).

Improved physical and mental health

Policymakers and researchers increasingly recognise the connections between public health and access to transport. Still, health improvements are typically framed from a physical health perspective rather than considering the broader quality of life impacts (Lee & Sener, 2016).

Today, older people are healthier and more active than previous generations. Providing opportunities to interact with other community members is important in promoting mental and physical health, supporting independence and reducing social isolation during the latter years of life. Access to mobility is not only a way to get to a destination but also has an emotional component. According to the literature, mobility contributes to increased well-being by providing social interaction and involvement in activities outside the home (Shergold, Lyons & Hubers, 2014).

Increased access to education opportunities

Increased mobility in rural areas can improve social welfare by increasing the proximity and quality of essential services. Better access to transport services promotes the education of the population, including adult education, positively impacting human capital.

2.2 Cost-effectiveness evaluation design for mobility solutions

The cost-effectiveness evaluation design is based on desk review and interviews with project partners. The international literature review was performed to identify specific evaluation indicators.

The desk review was based on the following data sources:

a. 17 scientific articles on cost-benefit analysis versus cost-effectiveness analysis;
b. Reports on economic evaluation by other ongoing and completed EU projects;
c. Qualitative and quantitative data collected from the MAMBA partners:
    i. Workshop held at the 6th Transnational partner meeting (Seinäjoki, Finland, 3-4 June 2019);
    ii. Interviews with project staff from Vidzeme Planning Region;
    iii. Interviews conducted with all project partners during the 8th Transnational partner meeting (online, 24 March 2020)
    iv. Data gathered via e-mail from all partners (various points 2019.-2020)
    v. Presentation to The Latvian Association of Local and Regional Governments (LALRG) on the calculation of cost effectiveness of Vidzeme Planning Region MC and its mobility solution.
d. Notes from a Cost-Benefit Analysis Workshop at the International Transport Forum (25-26 April 2018, Stockholm, Sweden)

Following the development of the methodological framework, a sample cost calculation scheme was developed and tested using estimated input data from project partners. The authors believe that this methodological framework is an accurate and transparent method for calculating mobility service costs.

The overall research question was: **What are the costs of a mobility service?**

To analyse transport and accessibility costs, stakeholders perform the following steps:

1. Define the significant factors that drive fixed and variable costs.
2. Define relevant fixed and variable costs.
3. Calculate applicable fixed and variable costs.
4. Assess unit costs and total costs.
5. Analyse decisions

Accounting or budgetary information typically will provide data on salaries, capital costs, materials, and other expenditures, used during the implementation period of the mobility solution. Nevertheless, some values cannot be easily identified but instead must be developed using the best estimates.

The cost of capital assets should be spread out over their expected useful life. Typically, the asset (less its final salvage value) is depreciated equally per year over the life of the asset (straight-line depreciation). Figure 2 shows the data flow and activity calculations for mobility solutions.

The sequence and interaction of the elements presented in Figure 2 can be applied as follows:

- Economic **efficiency** in the context of this report refers to the optimisation of resources. The optimal solution is to provide the required level of services with the least amount of inputs. Economic efficiency increases if the costs of mobility solutions decrease or if the value provided by the mobility solution increases.
- **Outputs** are immediate results of performed activities characterised by different output indicators, such as the number of passengers.
- The **outcome** of the mobility solution is the degree to which it increases people's ability to access the desired resources, services and markets. This may include access to services, employment or education opportunities, culture, and socialisation opportunities.
- **Effectiveness** is the degree to which objectives are achieved and the extent to which the problems targeted are solved. In contrast to efficiency, effectiveness is determined without reference to costs. Efficiency means "doing the thing right," effectiveness means "doing the right thing" (Cambridge Dictionary, 2020).

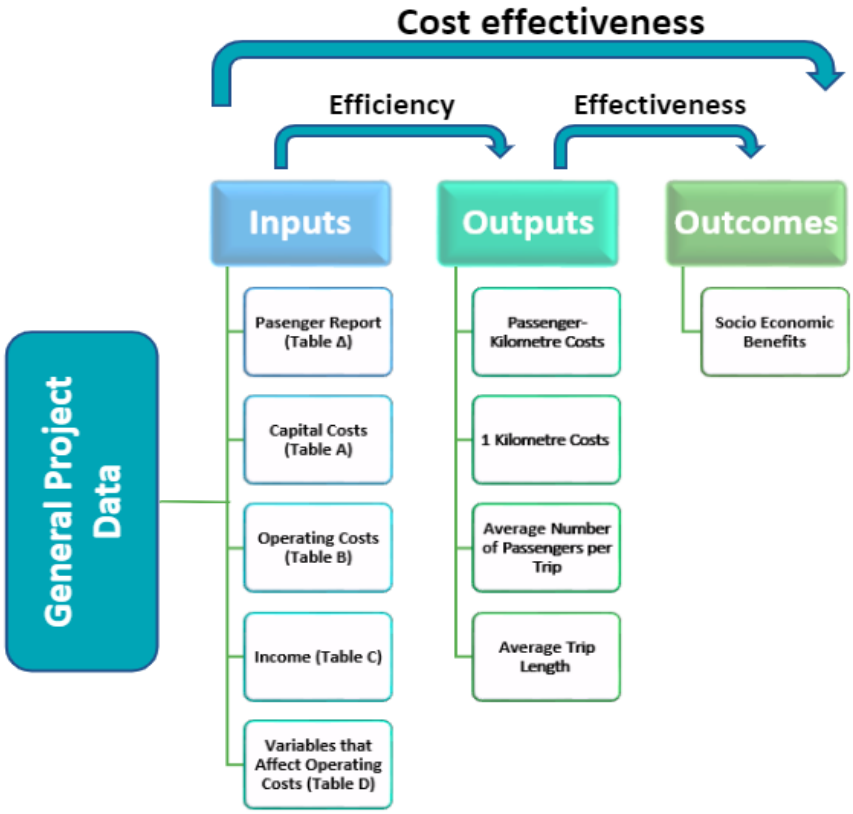

Figure 2. Cost effectiveness evaluation design for mobility solutions

Traditional planning tends to assess the performance of a mobility solution using, for example, the euro per passenger-kilometre, which reflects the price of the mobility solution and thus favours the cheapest solutions. The accessibility-based analysis extends the considered impacts and opportunities for mobility solutions.

Preliminary data collection for cost effectiveness evaluation of mobility solution

Table A contains data on the **capital costs** of the mobility solution.

MAMBA partners were instructed to enter their capital costs (if any) in the light green cells.

Table A. Capital costs (EUR)

No.	**Capital Item**	Explanation	Price EUR	Lifetime (in years)
1	Computer	If necessary		
2	Mobile app	If necessary		
3	Vehicle	If necessary		
4	Other capital costs	If necessary		
.....				
	Total Capital			

Table B includes data on the **operating costs** of the mobility solution. It provides some examples of possible operating cost types. MAMBA partners were instructed to provide the relevant data in the light green cells.

Table B. Operating costs (EUR)

no	**Operating Costs**	**Explanation**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Per year**
1	Salaries	Wages per hour multiplied by the number of working hours per month													
2	Payroll taxes														
	Distribution costs	Distribution and advertising													
3	Vehicle lease payments	If the vehicle is leased													
4	Casco insurance	If the vehicle is owned													

5	Technical inspection	If the vehicle is owned														
6	License/Permits	If necessary														
7	Vehicle taxes	If the vehicle is owned														
8	Fuel	Km travelled per month divided by 100 multiplied by average consumption per 100 km (litres) multiplied by fuel price														
9	Office lease payments	If office is leased														
10	Office utilities (electricity, heating, water, etc.	Please specify if applicable														
11	Parking/garage expenses	Please specify if applicable														
12	IT platform maintenance	Please specify if applicable														
13	Property taxes	If you own property														
14	Vehicles depreciation	Do not enter														
15	Other depreciation of infrastructure	Do not enter														
17	Miscellaneous expenses	Other expenses														
18	**Total Operating Costs**															

Table C includes data on possible **income sources** for mobility solutions, including the activities of the Mobility Centre, if applicable. MAMBA partners were instructed to fill in the light green cells.

Table C. Income sources

No	Income Item	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Per year
1	Income from users													
2	Income from the project													
3	State or local government grants													
4	Other Income													
5	**Total income**													

Table D should include data of the variables that affect operating costs. MAMBA partners were instructed to fill in the light green cells.

Table D. Variables that affect operating costs

No	Variables	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Per year
1	Number of Users													
2	Service price													
3	Number of employees													
4	Hours worked													

Outcome calculation

As mentioned above, in the process of cost-effectiveness analysis, it is essential to find out whether the output unit is provided at the optimal cost. Depending on the type of mobility solutions, several outcomes are possible, which are affected not only by the implementation of a particular mobility solution but also by various external factors, previously implemented policies and projects, etc. Section 2.1. described several medium and long-term benefits that can be assessed using Table E. The table is designed to be filled in by experts based on surveys, anecdotal evidence, and their own expertise. This table provides information on cost effectiveness by assessing the degree to which objectives are achieved and the extent to which targeted problems are solved. In contrast to efficiency, effectiveness is determined without reference to costs. Outcome indicators include socioeconomic benefits, which can be assessed as follows:

A scale of 1 to 5 where 1 - minimum impact, 2 - small impact, 3 - medium impact, 4- high impact, 5- very high impact. The impact of these indicators can be verified over a longer period of time, as the impact is not felt immediately after the implementation of the project.

Table E. Evaluation of outcome indicators

Indicator of economic benefits	Relative factor weight (1 in total), e.g. 0.05, 0.15, 0.20, 0.35, etc.	Impact of MC/TOD (on a scale of 1-5)	Relative factor weight Impact of MC/TOD
Benefits from increased business activity			
Benefits from the inclusion of economically active people in the labour market			
Benefits from personal income taxes due to population and increased economic activity			
Gains from an increase in the value of the real estate			
Benefits from the development of additional tourism services and goods			
Benefits from increased demand for local services (including culture) and goods			
Benefits of increased interregional traffic flow			
Benefits from improving the quality of the residential environment			
Benefits of improving the health of the population			
The benefits of increasing access to educational opportunities			
Benefits from drivers' desire to pay for the service			

2.3 Measuring the social benefits of innovative mobility solutions

The social aspect of the framework was developed based on several steps. First, a literature search was conducted to identify relevant articles on the evaluation of social benefits of rural transport solutions. The literature search was performed on the platforms ScienceDirect, Tandfonline, Google Scholar and Google, and utilised 54 unique key-word combinations. The most relevant finding from these searches was two papers based on a study of community transport commissioned by Transport Scotland (Canning *et al.*, 2015; Nelson *et al.*, 2017). The evaluation framework for the SMARTA project was also found to be quite useful, given the similar nature of the two projects. Several additional studies included relevant aspects and were used to complement the primary sources in developing the framework (e.g. Geurs *et al.*, 2009; Laird & Mackie, 2014; Lucas, Van Wee & Maat, 2015; Owen *et al.*, 2012).

The Transport Scotland study on the Social and Economic Benefits of Community Transport in Scotland was based on five case study areas with different demographic and urban-rural classifications. The results were based on user surveys as well as qualitative interviews with community transport providers. In developing the user questionnaires, Canning et al. (2015) identified a range of social and economic benefits of community transport, of which 11 were deemed relevant to the development of the social aspect of the MAMBA framework. These include:

- Accessibility and social exclusion
- Social interaction and social capital
- Wellbeing, quality of life and mental health
- Supporting independence
- Earlier detection of illness and treatment
- Reductions in missed health appointments and domiciliary provision
- Healthier and more active lifestyles
- Employability
- Support for local businesses
- Rural population decline / rural sustainability
- Support for other services and groups

These dimensions are further elaborated in Nelson *et al.* (2017), including examples of the specific questions and statements used in the questionnaires. For the development of the framework used in the MAMBA project, these dimensions were considered alongside other relevant sources from the literature review (including MAMBA publications). Following this, a series of categories and subcategories were developed (see Table F).

Table F. Description of socioeconomic factors that may be influenced by innovative rural mobility solutions

General accessibility	- Improved accessibility to key destinations (employment, education, health services)
Social factors	- Social interaction and social capital (e.g. opportunities for social interaction and networking) - Supporting independence (e.g. making it easier for people to stay in their own home; reducing dependence on family and friends to help with journey) - Wellbeing, quality of life and mental health (e.g. providing access to social opportunities and recreation)
Health	- Healthier and more active lifestyles (e.g. enabling users to stay active and get out and about) - Access to health services (e.g. increased accessibility to and interaction with care providers; access to pharmacies)
Work, study and commerce	- Access to employment opportunities - Access to a broader range of education and training facilities. - Support for local businesses (e.g. increased trade, supply of labour, tourism development)
Rural development factors	- Stakeholder collaboration (different stakeholders come together to re-think approaches to mobility) - Civic engagement (people feel actively involved in the development of the solution / the solution responds well to local needs.

The second step was to develop a series of statements and questions designed to measure the impact of increased mobility and/or accessibility on these social aspects at a single point in time. These statements and questions are presented in Table G.

Table G. Statements and questions for measuring socioeconomic factors

	General accessibility	- What was the purpose of your trip? - How would you have travelled if this service was not available?
Social factors	Social interaction and social capital	- I like to socialise with other passengers and/or driver during the journey - I have met new people using the service - I can participate more actively in the community because of the service
	Supporting independence	- The service allows me to get out of the house - I don't have to rely on family as much for lifts now I use the service - The service helps me keep living in my own home - I have more flexibility because of the service (e.g. types of activities, the timing of activities)
	Wellbeing, quality of life and mental health	- Without this service I would find it difficult to access activities - This service helps me meet friends and family - My overall wellbeing is better since I've been using the service
Health	Healthier and more active lifestyles	- This service helps me get out and about more - I use public transport more often due to the service - This service allows me to enjoy nature and/or cultural attractions
	Access to health services	- The service gives me access to a broader range of health care services - I can see the doctor whenever I need to because of the service - I am missing less medical appointments now I use the service - My general health is better since I've been using the service - I have less need for home visits from doctors now that I use the service - The service makes it easier for me to get my medication
Work, study and commerce	Employment opportunities	- The service makes it easier for me to get to work - I have access to more job opportunities because of the service - The service made it possible for me to get a job
	Education and training facilities.	- The service makes it easier for me to get to the place where I study - I have access to more education opportunities because of the service - The service makes it possible for me to study without moving away from home
	Support for local business	- The service gives me access to a greater variety of shops and activities than I had before - I am purchasing more locally now I use the service

Rural development	Stakeholder collaboration	- I am more likely to consult with colleagues outside my department in tackling mobility challenges since participating in the project - I am more likely to consult with colleagues outside my organisation in tackling mobility challenges since participating in the project - Working together with people from other departments/organisations opened up new ways of thinking - Working together with people from other departments/organisations resulted in solutions that would not have been possible otherwise - Working together with people from other departments/organisations resulted in the identification of long-term cost-saving mechanisms - The network developed through this collaboration will be useful in the future for other projects - Overall, the collaboration was beneficial
	Civic engagement	- The participatory process has been valuable overall - I am more likely to use the service because of my involvement in its design - The process supported me to reflect on my mobility needs, now and into the future - The process provided a good opportunity to socialise with friends and neighbours - The process paved the way for other community-led initiatives - The process included participation from a diverse range of residents - On a scale of 1-10 (10 being the highest score), how well do you think the service meets your needs?

Once the framework was developed, a consultation was conducted with each partner region to determine the most important social outcomes to be measured, and the best method through which to do so (e.g. face-to-face, online survey, offline survey). Following this, a draft survey containing different combinations of the statements was put together for each partner region and sent for feedback and/or approval. In most cases, the feedback was related to the specific context of the mobility solution. Where feedback was considered valuable in a general way, it was incorporated into all surveys.

The questions (see Table G) included a range of choices as well as an "other" option that gave the opportunity for free-text response. The statements were presented alongside a five-point Likert scale, including the options "strongly agree", "agree", "not sure", "disagree" and "strongly disagree". Demographic questions included age, gender, health status ("very good", "good", "fair", "bad", "very bad"), and a description of daily activities ("working full-time, "working part-time", "studying full time", "studying part-time", "balancing study and work", "retired", "unemployed", "other").

Once all parties were satisfied with the result, the surveys were translated into the local language and set up in either a paper-based or online format. Where an online format was used, flyers were also

developed to be displayed at bus stops and in the vehicles. The flyers included a QR code which could be used to access the survey on a smartphone or other mobile device. The English versions of the individual questionnaires for each partner region as well as an example of the promotional flyer can be found in Appendix I and Appendix II.

As stated in the introduction, the ongoing challenges related to COVID-19 meant that, for many partners, it was not possible to administer the survey during Spring 2020 as originally planned. In these cases, partners have been provided with all the tools that they need to conduct the surveys themselves if/when it becomes possible to do so. In practical terms, this means that all partners have a paper-based and/or online version of the survey ready to go. The online versions were set up in individual survey monkey accounts linked to the contact person in each partner region, and they have complete control over the accounts.

Social data was collected from Diaconie of Schleswig Holstein and County of Cuxhaven and is presented in the results section below.

3. Results

3.1 Vidzeme Planning Region - Transport on Demand

The population of the region's rural areas is declining due to the demographic situation and intensive migration to the largest cities in the region. Older people tend to stay in the countryside, while younger people often move to major cities for economic, educational or work-related reasons. Low population density has made it difficult to finance public transport in rural areas. On some routes, public transport is infrequent, unavailable and residences are often far from the nearest bus stop - too far to walk, especially for the elderly or people with health problems (see Figure 3). The quality of road surfaces can be difficult or even dangerous, especially during autumn, winter and early spring, which sometimes forces drivers to deviate from the route.

Limited mobility also has a significant negative impact on the quality of life of local people and their ability to participate fully in public life, as well as access essential social and public services such as shops, pharmacies, post offices and libraries (Dick, Brand & Tovaas, 2020).

Figure 3. Situation in rural areas

A Mobility Centre was opened to provide information on various mobility options and manage requests for the use of the "on-demand" service. The main element of the Mobility Centre was a

telephone-based helpline, as this form of communication proved to be the most desirable choice for people surveyed in the region. In future, it may be relevant to consider a solution, depending on the wishes of the service users.

In addition to booking services, the main goal of the mobility centre was to provide users with a clear overview of the regional transport system and to promote the "transport on demand" service, which is the only service of its kind in the region and the country. The transport on-demand service operates on two routes, one in Mazsalaca Region and one in Alūksne Region. It complements but does not compete with the existing traditional public transport system.

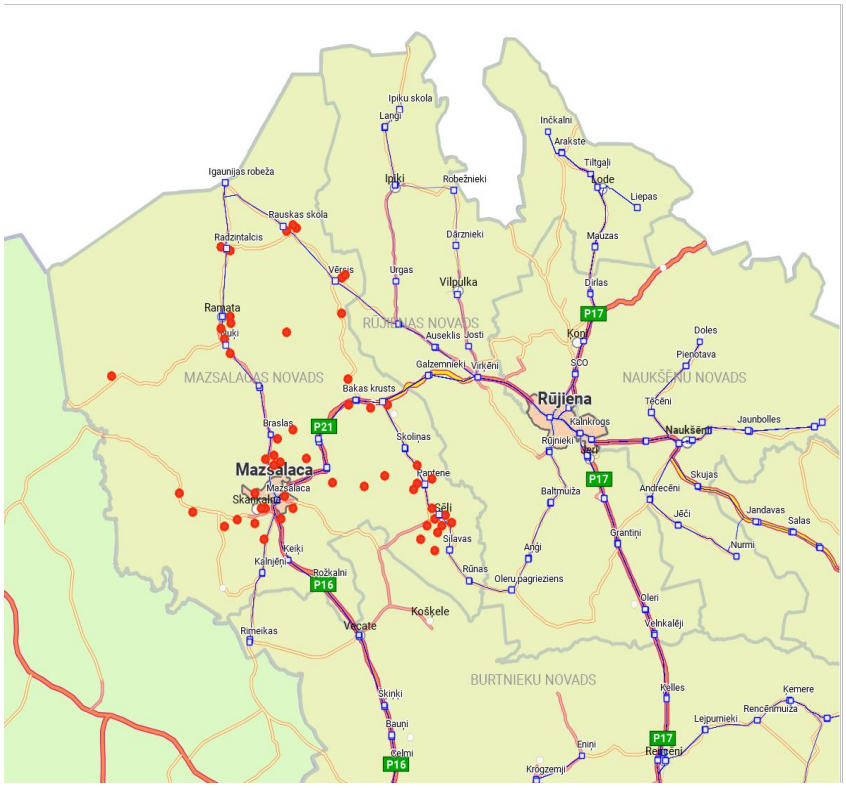

Figure 4. Services provided in Mazsalaca Region

Mazsalaca Region is located in the northwestern part of Vidzeme - 20 km from the Estonian border, 142 km from Riga. The territory of the county is 417.6 km² and has about 3 500 inhabitants. The service is available throughout the county on weekdays from 4:00 to 23:00 and on Saturdays from/to Rūjiena market. The trip must be booked 24 hours in advance. A total of 107 addresses were served during the period studied (red dots on the map above). The main destinations of service users included:

Doctor/pharmacy, food shop, public bus stop, ATM, hairdresser, library, post office, national authority, and events organised by the municipality.

Figure 5. Services provided in Alūksne Region

Alūksne Region is located in the northeast of Latvia - 200 km from Riga. The total area of the county is 1697.89 km². Alūksne municipality has 16 343 inhabitants. The service is available in five parishes: Mārkalne, Alsviķi - on Wednesdays, Ilzene - on Thursdays, Jaunlaicene, Veclaicene - on Fridays from 4:00 to 23:00. The trip must be booked 24 hours in advance. A total of 39 addresses were served during the period studied (red dots on the map). The main destinations of service users included: Doctor/pharmacy, food shop, public bus stop, ATM, hairdresser, library, post office, national authority, events organised by the municipality.

The technical solution for on-demand transport consists of two parts:

1) Scheduling app. In this app, the dispatcher registers passengers, plans optimal routes and creates trips. From the planned and actual information, printouts are prepared in the section about carriers, drivers or passengers.
2) Driver app. Drivers receive trip information on a tablet installed in the vehicle. The start of the trip, as well as boarded and disembarked passengers, are marked on the tablet. Additionally, the location is sent to the planning app, and the dispatcher can see online on the map whether the trip is going according to plan.

The planning application was developed using the Laravel framework (M. Štāls, SIA "Cloud Enterprise Systems").

Inputs

Data on the service were collected from October 2019 to August 2020. This data included: passenger reports (see Table H for an example), capital costs (Table I), operating costs (Table J) and variables that affect cost drivers (Table K).

Table H.Passenger report (partly) for Vidzeme Planning Region ToD service

Passenger report				
Date from	01.10.2019			
Date to	31.08.2020			
Territory				
Trip #	**Date**	**Time**	**Purpose**	**Km travelled**
4.	22.10.2019	16:57 - 16:59	Food shop	0,97
19.	22.10.2019	14:33 - 14:46	Library	2,1
20.	22.10.2019	15:32 - 15:36	Bus stop	1,55
22.	24.10.2019	15:25 - 15:28	Hairdresser	2,03
24.	24.10.2019	16:14 - 16:18	Hairdresser	2
26.	25.10.2019	10:53 - 10:57	Library	1,8

Table I. Capital costs for Vidzeme Planning Region ToD service

	Mazsalaca	Alūksne
Capital costs total (EUR)	**9500**	**9500**
Software (EUR)	7400	7400
Hardware (EUR)	2100	2100

Table J. Operating costs for Vidzeme Planning Region ToD service

	Mazsalaca	Alūksne
Operating costs total (EUR)	**70800**	**41800**
Mobility Centre services (EUR)	3700	3700
Publicity (EUR)	500	500

Fixed costs of outsourcing of transport services	*18838*	*9299*
Variable costs of outsourcing of transport services per 1 km	*2,99*	*3,5*
Outsourcing of transport services total	66600	37600

Income

During the pilot project, the service was free of charge. The total project revenue came from the MAMBA budget. At the end of the project, residents expressed their readiness to participate with a partial payment for the service in order to ensure its continued operation.

Table K. Variables that affect operating costs for Vidzeme Planning Region ToD service

Variables	Mazsalaca	Alūksne
Number of passengers	1835	294
Number of trips	985	113
Travelled km	15974	8086
Passenger kilometers (pkm)	20615	19223

Outputs

Economic efficiency indicators were one passenger-kilometre cost, 1 km total costs, the average number of passengers per trip, average trip length.

A passenger-kilometre, abbreviated as pkm, is the unit of measurement representing the transport of one passenger by a defined mode of transport (road, rail, air, sea, inland waterways, etc.) over one kilometre (Eurostat Statistics Explained). Passengers are calculated separately for each trip by multiplying distance travelled [km] by passengers [p] transported. Passengers for each trip are then summed up.

Table L. Passenger-kilometre costs for Vidzeme Planning Region ToD service in EUR

Indicator	Mazsalaca	Alūksne
Passenger-kilometre costs (EUR)	3,43	2,17
1 kilometre cost (EUR)	4,43	5,17

The average number of passengers per trip	2	3
Average trip length (km)	12	25

Sustainability of the pilot

On September 24, 2020, Vidzeme Planning Region organised a meeting to initiate a discussion at the national level on the need to introduce alternative mobility solutions in remote rural areas. Participants were informed about the results of the pilot project "transport on demand", with the aim of supporting the development of alternative mobility solutions not only in Vidzeme but across the country. The results were well received and suggest the potential for alternative mobility solutions in Latvia.

On October 12, representatives of Vidzeme Planning Region (VPR) met with Minister of Transport, Tālis Linkaitis, to present the results and conclusions of the on-demand transport pilot project, as well as to suggest the creation of a support mechanism for mobility in rural areas. The results of the implemented pilot project clearly show that the demand for passenger transport also exists in remote and sparsely populated rural areas. Representatives of the VPR proposed integration of the on-demand transport service into the existing public transport system, offering this service in places where the public bus is not available and in areas where the state almost entirely subsidises existing services. The Minister of Transport suggested that the planning regions should do the administration of the transport on-demand service.

3.2. Trelleborg Excursions for older residents

The pilot project in Trelleborg Municipality aims to promote social interaction by organising bus trips for older residents. Older people often live alone or in nursing homes and, as such, may be at risk of social exclusion. Though public transport services do exist in the area, it has become clear that for older residents use of these services is limited by psychological barriers (e.g. fear) or lack of knowledge. Organised trips are designed to address these issues, to allow older people to meet and take them to destinations that would otherwise be difficult to reach, such as country cafes and nature parks. These trips have direct wellbeing benefits but have also been found to be useful in increasing confidence in using public transport (Dick, Brand & Tovaas, 2020).

Inputs

Data on service provision were collected for all trips that took place in September and November 2019 and in January and February 2020, including passenger reports (see Table M for an example),

operating costs (Table N) and variables that affect cost drivers (Table O). There were no capital costs for this service during the pilot, and users did not pay any fee.

Table M. Passenger report (partly) for Trelleborg Municipality mobility solution

Passenger report					
Date from:	**01.09.2019**				
Date to:	**31.09.2019**				
Route #	**Date**	**Destination**	**Number of passengers**	**Kilometres travelled**	**Passenger kilometres**
1	07-Sep	Hamnens dag	32	36,6	1171,2
2	14-Sep	Hallongården	28	68,8	1926,4
3	21-Sep	Ullahills magasin	36	47,4	1706,4
4	28-Sep	Smygehamn	18	57,4	1033,2

Table N. Operating costs for Trelleborg Municipality mobility solution

Operating costs total (EUR)	**5345**
Outsourcing of transport services total	5345

Table O. Variables affecting operating costs for Trelleborg Municipality mobility solution

Variables	
Number of passengers	263
Number of trips	8
Travelled km	505,4
Passenger kilometers (pkm)	16877

Outputs

Table P below shows output indicators that can be used to measure and benchmark the cost-effectiveness of the mobility solution.

Table P. Output indicators for Trelleborg Municipality mobility solution

Indicator	

Passenger-kilometre costs (EUR)	0,32
1 kilometre cost (EUR)	10,58
Average number of passengers per trip	33
Average trip length (km)	63

3.3. Vejle - Ride Sharing

In collaboration with NABOGO ApS, a smartphone application developer, Vejle Municipality introduced and promoted a carpool app in rural areas in central Denmark. The target group of the app is people who want to go from the village of Smidstrup / Skærup to the regional centre Vejle, 13 km away. What makes this initiative unique, unlike similar services in UBER and Lyft, is that the NABOGO service is targeted at rural areas and the fee paid to drivers only covers the costs of the service without making a profit. Another interesting aspect is that part of the target audience is young people without a driving license.

The potential economic added value of the service for the younger generation is that it is likely to make it easier for them to access education or employment opportunities without moving away from the region. An additional advantage of the commuter service in Vejle is the reduction of journeys in the surrounding rural area where one person is travelling in the vehicle. This could alleviate the various growing traffic problems in the city centre in the future (Dick, Brand & Tovaas, 2020). Mobile data connectivity in the area is excellent, so the technical requirements are optimally suited to the digital solution.

Inputs

Data on the service were collected for all trips that took place during the project, including passenger reports (see Table Q for an example), operating costs (Table R), and variables that affect Operating Costs (Table S). There were no capital costs for this service during the pilot.

Table Q. Passenger report (partly) for NABOGO mobility solution

Passenger report				
	Destination		Kilometre	Payout
7100 Vejle	Gormsgade 21	7100 Vejle	5359	6.00
7120 Vejle Ø	Willy Sørensens Plads 5	7100 Vejle	4,358	6.00
8830 Tjele	Viborg	8800 Viborg	21281	18.50
7100 Vejle	Vedelsgade 10	7100 Vejle	5808	6.00
1370 København	Hillerød	3400 Hillerød	36675	26.00

7100 Vejle	Vejle Trafikcenter	7100 Vejle	5762	6.00
7100 Vejle	Vedelsgade 10	7100 Vejle	5808	6.00
7100 Vejle	Vedelsgade 10	7100 Vejle	5808	6.00
7100 Vejle	Vedelsgade 10	7100 Vejle	5808	6.00

Table B Operating costs

Table R. Operating costs for NABOGO mobility solution

Operating costs total (EUR)	**44437**
NaboGO per year for maintenance	16731
Transport services total	27706

Table D. Variables that affect Operating Costs

Table S. Variables that affect operating costs for NABOGO mobility solution

Variables	
Number of passengers	843
Number of trips	n/a
Travelled km	n/a
Passenger kilometers (pkm)	23951

Outputs

The cost per passenger-kilometre was determined as the economic efficiency indicator, with the results shown in Table T below.

Table T. Passenger-kilometre costs for NABOGO mobility solution

Indicator	**Vejle TOD**
Passenger-kilometre costs (EUR)	1,86
1 kilometre cost (EUR)	n/a
Average number of passengers per trip	n/a
Average trip length (km)	n/a

3.4 County of Cuxhaven - Transport on Demand and Mobility Centre

Cuxhaven, located off the German North Sea coast, faces many of the problems typically associated with rural areas, including population ageing, outmigration of young people, population decline and lack of service availability. Traditional approaches to public transport are expensive and financially disadvantageous due to the low population density and the associated high operating costs. The County of Cuxhaven Mobility Centre provides a single hotline combining Transport-on-Demand services which were previously scattered across the county. Trips can be planned from start to finish by telephone, including booking, payment, and ticketing.

Inputs

Data on the ToD service were collected for all trips that took place between 1.10.2019 and -30.09.2020, including passenger reports (see Table U for an example), capital costs (Table V), operating costs (Table W), and variables that affect operation costs (Table X).

Table U. Passenger report (partly) for County of Cuxhaven mobility solution

Passenger report				
Date from:	01.10.2019			
Date to:	31.10.2019			
Ride #	**Date**	**Destination**	**Number of passengers**	**Kilometres travelled**
1	01/10/2019	Krempel	7	24
2	01/10/2019	Langen/Lindenhof	1	22
3	11/10/2019	Krempel	5	12
4	14/10/2019	Bremerhaven	3	73
5	18/10/2019	Bederkesa, Bremerhaven	4	56
6	20/10/2019	Bremerhaven	3	77
7	29/10/2019	Debstedt	1	27
8	01/10/2019	Bremerhaven	1	43
9	01/10/2019	Bederkesa	1	17

Table V. Capital costs for County of Cuxhaven mobility solution

Capital costs total (EUR)	**5056**
Hard and Software for Telephone (EUR)	4691
Installation (EUR)	365

Table W. Operating costs for County of Cuxhaven mobility solution

Operating costs total (EUR)	**8098**
Application and data hosting service (EUR)	6838
Database administration (functionality) (EUR)	540
Variable costs of transport services	720
The insurance premium is currently still a donation	

Table X. Variables that affect operating costs for County of Cuxhaven mobility solution

Variables	
Number of passengers	214
Number of trips	105
Travelled km	5598
Passenger kilometres (pkm)	12740

Outputs

Output indicators are shown in below in Table Y.

Table Y. Passenger-kilometre calculations for County of Cuxhaven mobility solution

Indicator	
Passenger-kilometre costs (EUR)	0,64
1 kilometre cost (EUR)	1,45
Average number of passengers per trip	2
Average trip length (km)	12

Social benefits

As can be seen in Figure 6, the majority of participants were aged between 18 and 64 years and their most common daily activities were full or part-time work. Given this, it is perhaps unsurprising that the most common trip purpose was travelling to work (see Figure 7). Doctors' appointments, shopping and leisure activities were also common activities for people using the service. Respondents over the age of 64 were more likely to report using the service for doctors' appointments (83% of all trips from people in this age group).

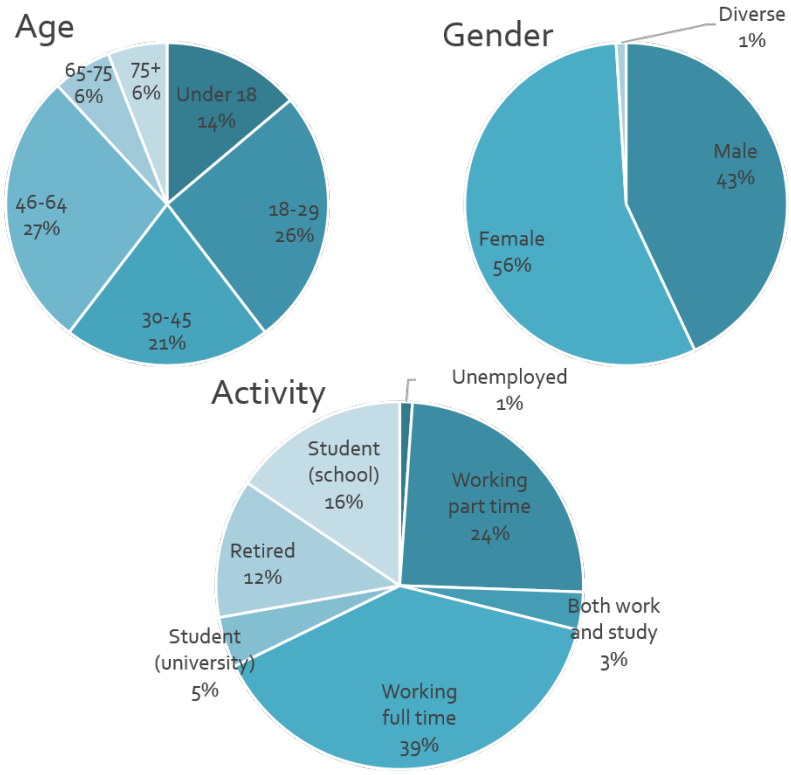

Figure 6. Age, gender and activity profile of respondents to user surveys in the County of Cuxhaven

Respondents were asked how they would have travelled if the service was not available. The results, shown in Figure 8, clearly demonstrate the need for this service among users. While many users described other mobility alternatives, including bicycle, rides from family and friends or another form of public transportation, almost half would have been unable to make the trip if the service was not available.

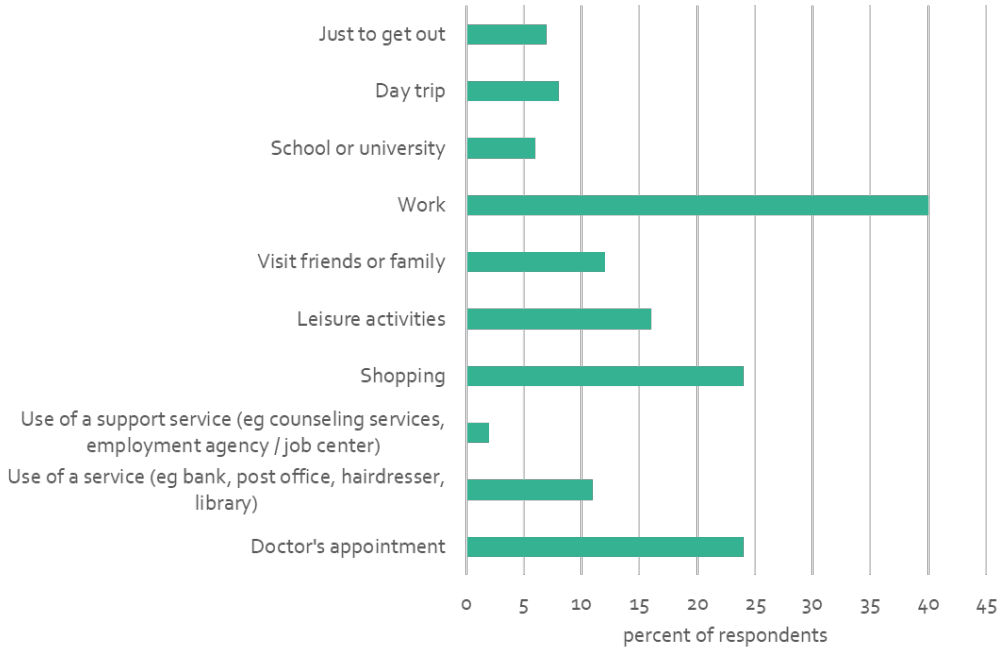

Figure 7. Trip purpose, County of Cuxhaven user surveys

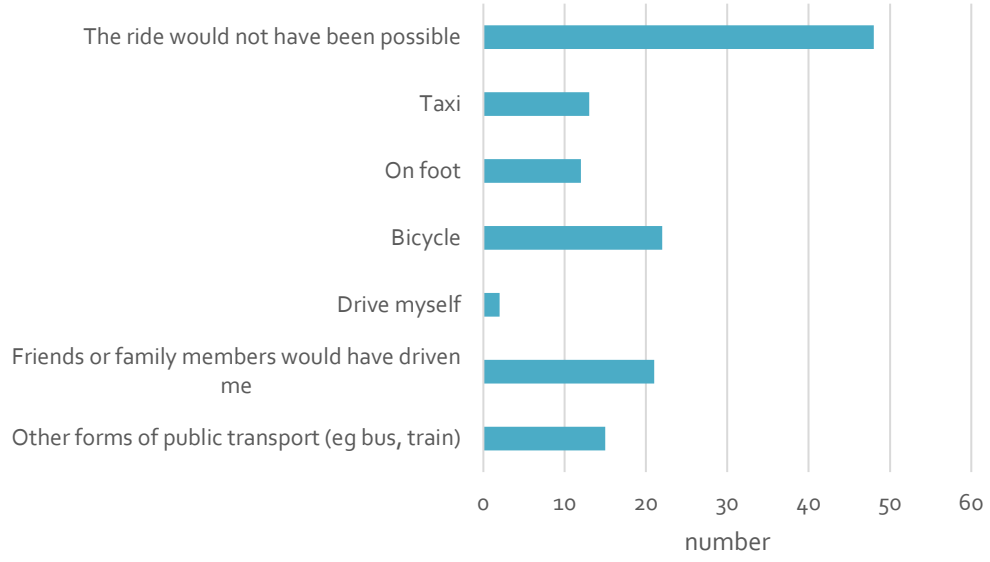

Figure 8. Transport options if the service was not available, Country of Cuxhaven user survey

Of those who would not have been able to travel, 26% reported using the service to get to work. This suggests an important economic benefit of the service, both on an individual and a societal level. This idea can be further fleshed out based on the responses to the statements related to work and study from all participants (see Figure 9). The most common occupational benefit reported by participants was making it easier to get to the place of work or study. The service also appears to have had a more substantive impact in some cases, opening up a broader range of education and employment options. For a small number of respondents (15%), the service may have even made it possible to get a job.

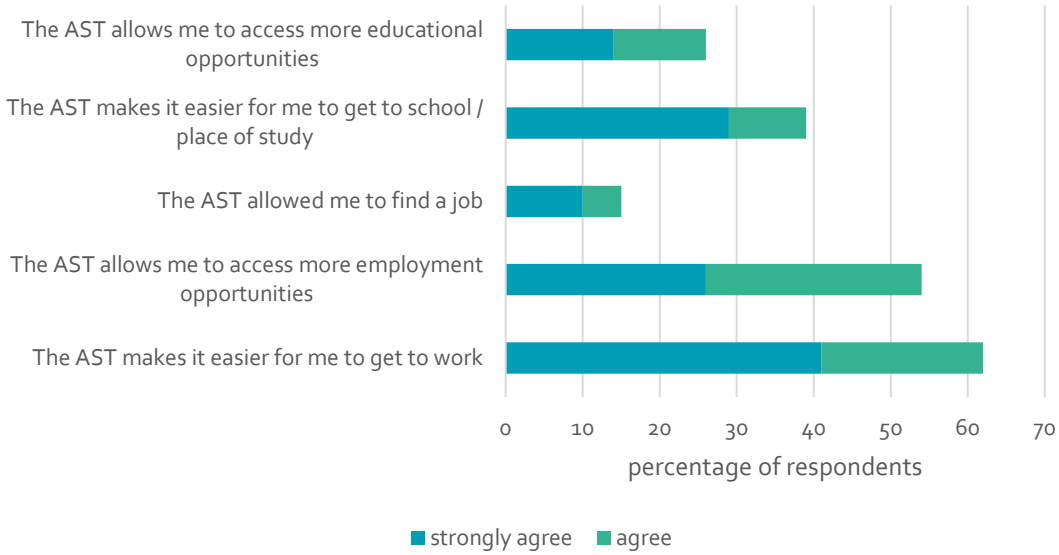

Figure 9. Impact of the service on work and study situation, County of Cuxhaven user survey

From a general accessibility perspective, the most common social benefits related to increased independence, including reduced reliance on family and friends for lifts, increased flexibility and the opportunity to get out of the house (see Figure 10). A substantial proportion of respondents (39%) even reported that the service makes it easier for them to continue living in their own home. This is an important social benefit but also has an economic dimension. It suggests a potential for appropriately targeted mobility services to support people to live independently further into older age, an outcome that could result in substantial public savings.

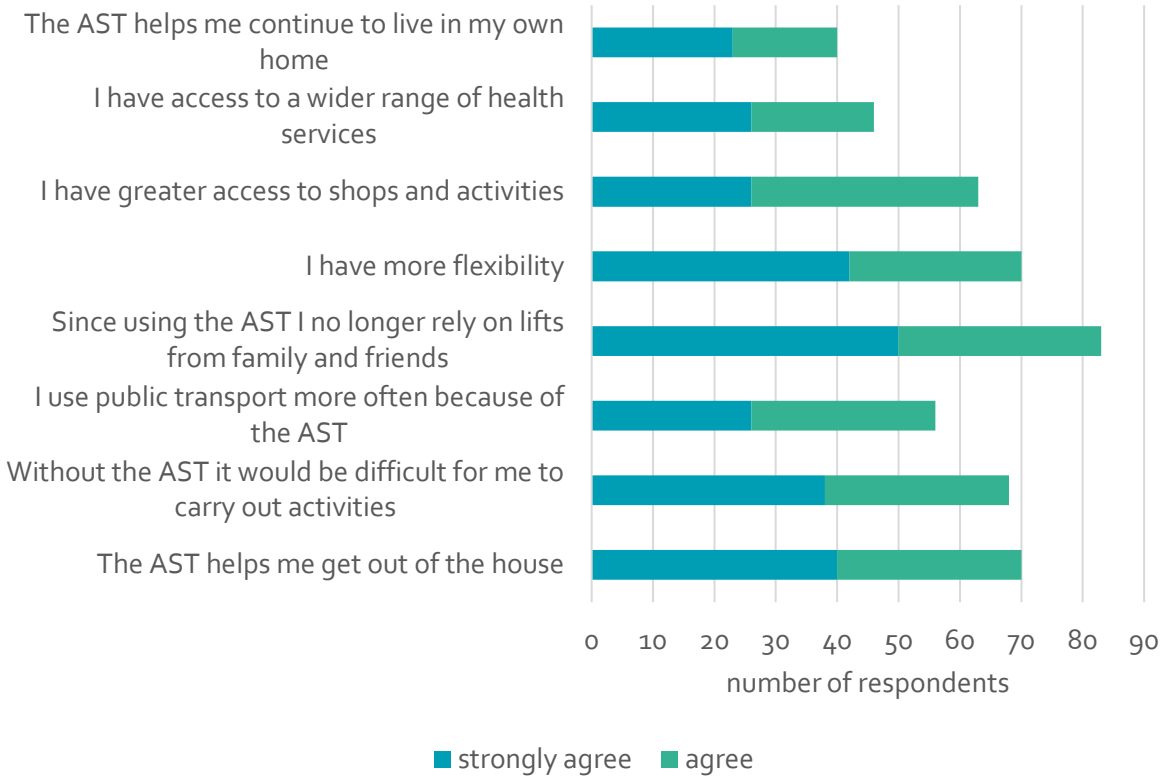

Figure 10. General accessibility benefits of the service, County of Cuxhaven user surveys

3.5 Diaconie of Schleswig Holstein - Mobile counselling service

Hallig Hooge is a tiny North Sea island off the west coast of Schleswig Holstein that is regularly flooded by storms. The population of 109 live on mounted areas occupying a total area of 5.78 km². The ferry from the mainland takes approximately 1.5 hours. There are few cars on Hooge, no public transport and usually, the islanders must go to the mainland to access social services. As such, the Mobility Centre focused on developing a service-to-people mobility solution in the form of online counselling service. The main focus throughout the duration of the MAMBA project was setting up the service through an intensive participatory process with Hallig Hooge inhabitants. This process involved a small group of residents, five of whom responded to the online survey related to their experience of the participatory process and their perceptions about the service.

All respondents were over the age of 65, and 60% were over the age of 75. Sixty per cent reported being in good or very good health, and the remaining 40% generally reported good health with some

problems from time to time. One respondent had never used a computer or the internet before, and one reported finding the use of computers and the internet difficult. The remaining three respondents were fairly comfortable using computers and the internet.

Figure 11 shows respondents perceptions of the participatory process. Responses to the process itself were fairly mixed. All respondents agreed that the process included a large portion of the residents and most (three out of five) felt it offered a good opportunity to make contact between friends and neighbours. Almost all respondents agreed that the process provided a good opportunity to reflect on their feelings about growing old on Hallig Hooge. Results were more mixed when it came to the overall value of the process and its impact on their likelihood of using the service.

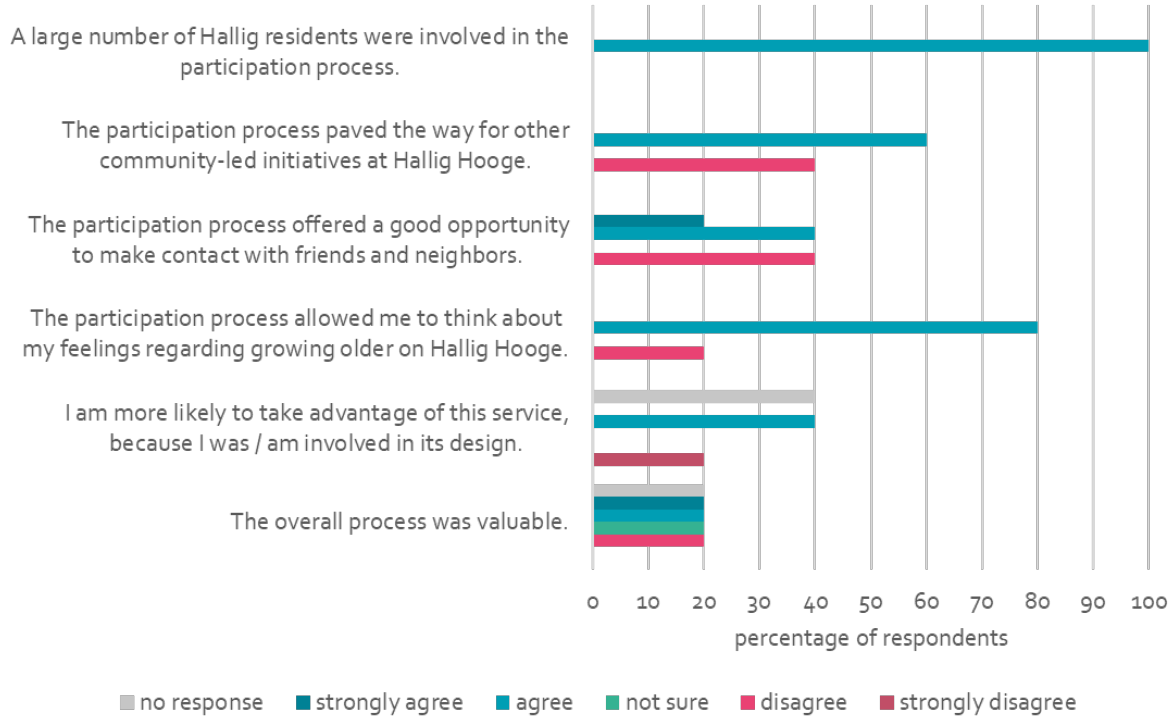

Figure 11. Reflections on the participatory process, Hallig Hooge residents survey

Respondents reflections on the service itself are shown in Figure 12. Notably, a degree of uncertainty was evident with respect to mastering the technology necessary to use the service and three out of the five respondents reported that they would be more comfortable with face-to-face counselling. Two out of the three were those who reported being least familiar with computers and the internet. At the same time, it is encouraging to note that three out of the five respondents thought that the

service would be helpful for the residents of Hallig Hooge. Further, two out of the five reported feeling more confident about growing old on Hallig Hooge due to the service.

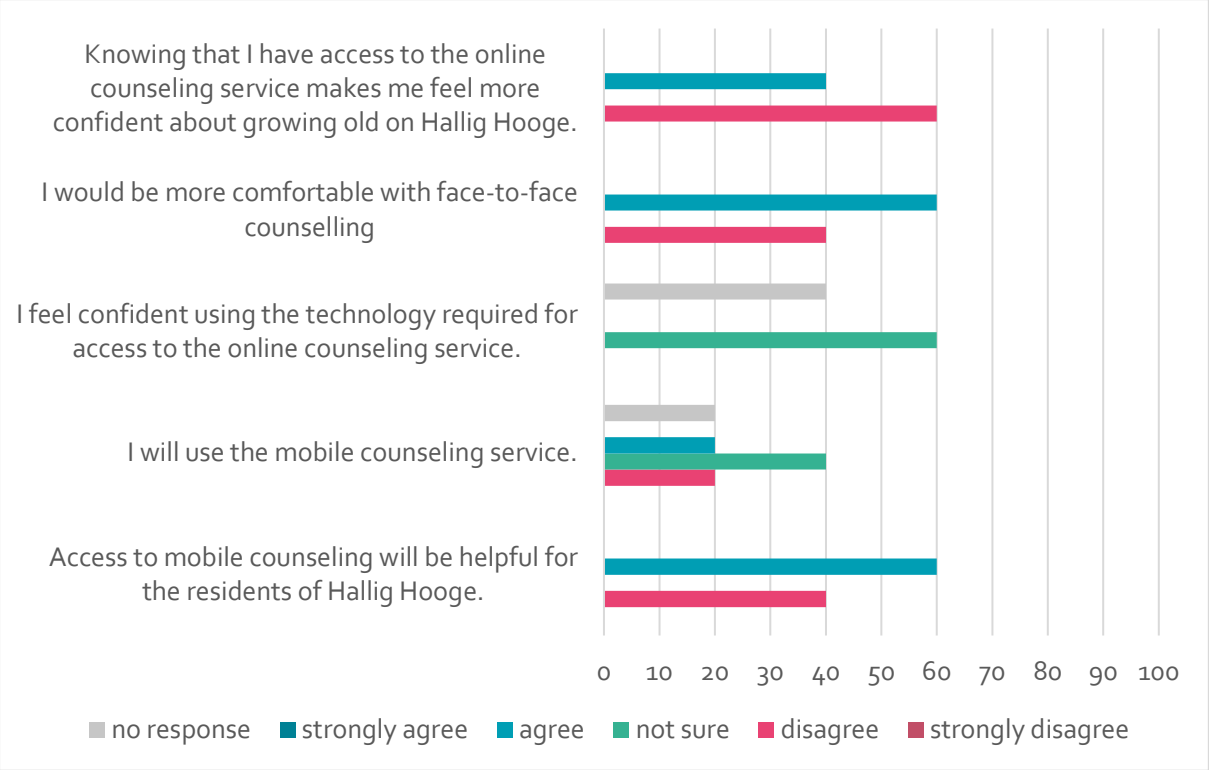

Figure 12. Reflections on the introduction of the mobile counselling and support service on Hallig Hooge

Given the small number of respondents, and the short time that the service has been operational, it is difficult to draw strong conclusions based on these results. The very different nature of this service also meant that cost data was not able to be considered in the same way as for the other pilots. Nonetheless, the data does provide a small insight into the challenges of introducing digital solutions in ageing rural communities. Though such solutions may offer an attractive alternative to increasing access to services, there may still be barriers to adoption, particularly if digital literacy levels are low. As such, activities that build digital skills and trust within the community are an important component of such solutions. The cost of this work must be considered from the outset. While digital solutions may prove to be cost-effective in the long term, it is important to take into account the investment in community engagement and capacity building that might be necessary, particularly when working with older population groups.

4. Analysis and concluding remarks

This fourth and final section addresses the lessons that can be learned by considering together all the data that has been collected in this task. It goes on to make some overall conclusions from the activity, discussing the limitations and potential next steps.

4.1 Analysis of results

There are several things that must be taken into account when considering the comparability of the results described above. First, the economic efficiency of services is affected by both the different territorial and economic conditions and the nature and purpose of the mobility solutions. Second, the short operational time of most of the pilot activities at the time of data collection makes it difficult to assess the long-term socioeconomic benefits. Third, the Covid-19 pandemic has had a significant impact on both service operation and the ability to collect reliable and comparable data. In some cases, it has made it impossible to collect any data at all, particularly from the social perspective.

Together, these circumstances mean that it is not possible to make an objective comparison of the partners' data that would allow determinations to be made about the cost effectiveness of one rural mobility solution over another. Nonetheless, it is interesting to consider the results described above side by side for purely informative purposes. To this end, Figure 13 gives an overview of passenger data and Figure 14 shows the 1 km costs and passenger-kilometre costs of each mobility solution considered in this study.

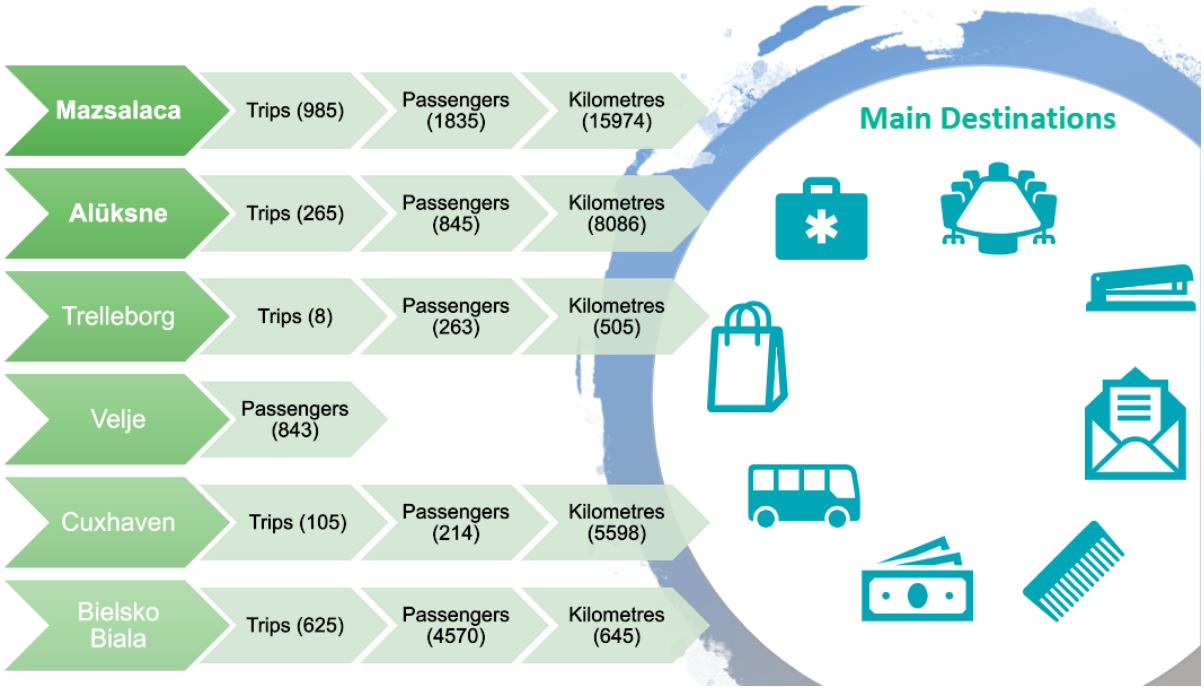

Figure 13. Statistics for MAMBA partners

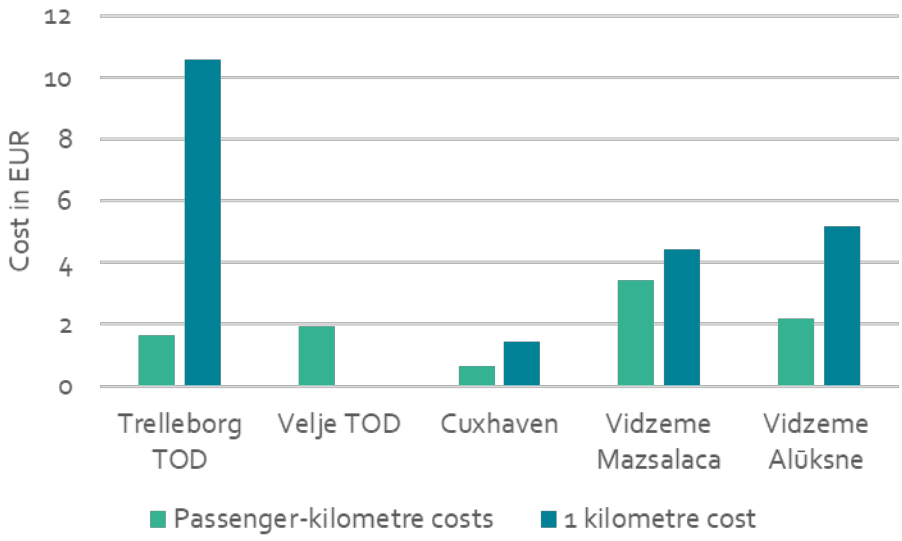

Figure 14. 1 km costs and passenger-kilometre costs for mobility solutions in partner regions

Despite the ambiguity of the data, some objective factors can be identified as affecting the economic efficiency of services:

- **The number of passengers on the trip**. The more passengers on a trip, the lower the cost per passenger-kilometre. The figure illustrates this with the Trelleborg case, which has 33 passengers and the lowest cost per passenger-kilometre (1.64 euros). It is notable that this data was collected in February 2020, prior to the onset of the Covid-19 pandemic. The highest cost per passenger-kilometre is for Vidzeme transport on-demand in Mazsalaca. Here, the restrictions related to the Covid-19 pandemic resulted in a limit of two passengers per trip.
- **The importance of in-kind contributions.** The lowest costs per passenger-kilometre can be found in the County of Cuxhaven (0.64 euros). This is at least in part due to the fact that operating costs do not include vehicle insurance costs received as a donation from the city of Geestland, and that drivers are volunteers.
- **Distribution of population.** The greater the distance to the final destination, the more "empty" kilometres which have to be covered, which increases the cost of 1 km, as in the case of Vidzeme transport on-demand in Alūksne (5.17 euros per km).
- **Terms of the service contract** that include the carrier's fixed and variable costs. If the share of fixed costs is relatively high, then in the case of few trips, the cost per km is higher, as seen in the case of the Trelleborg transport on demand (8 trips were made at the cost of € 10.58 per 1 km).

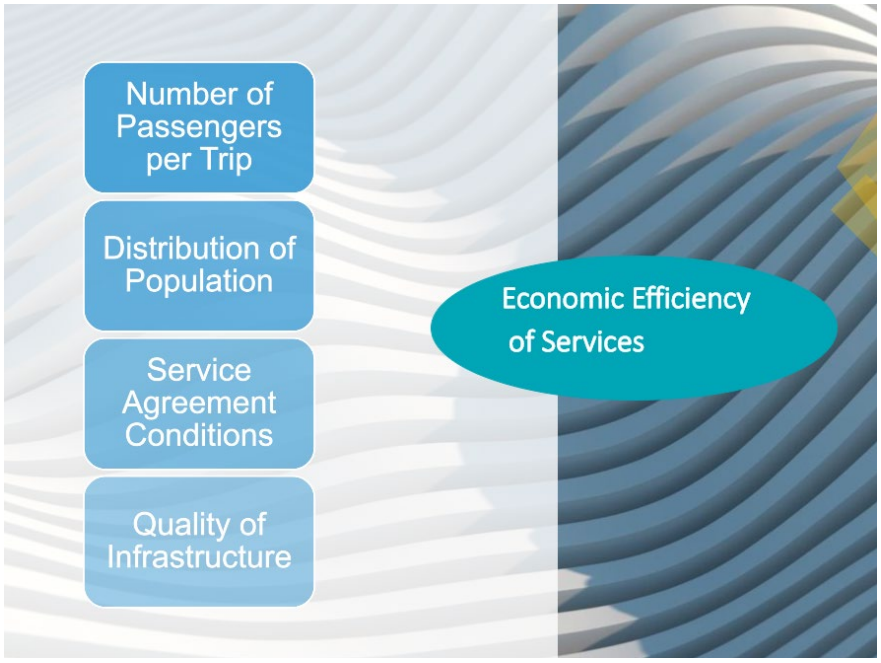

Figure 15. Factors that affect the economic efficiency of services

Comparisons of the social benefits are even more challenging as, in the end, it was only possible to collect social data for two of the pilots. As such, observations are limited to that which can be observed within these two pilots and which may potentially be generalisable to other examples.

Results from the County of Cuxhaven, for example, suggest that there is indeed a broader economic benefit from the provision of mobility services, particularly with relation to employment outcomes. Half of all survey respondents reported having no other transport option, and, of these, a quarter used the service to go to work. This suggests that without the service, some residents may find it more difficult to maintain gainful employment. Access to employment is obviously an important social benefit at an individual level. It can also result in economic gains for the region by increasing productivity and reducing the need for unemployment benefits.

The introduction of the mobile counselling service in Hallig Hooge provides an interesting example of the integration of a digital solution in a community where digital literacy and acceptance is relatively low. Despite an intensive community engagement process, some survey respondents were still hesitant about the service. This should not necessarily be interpreted as a sign that such services are not appropriate for ageing rural communities. What it does suggest, however, is a need to consider community engagement and capacity building activities as important costs that must be taken into account from the outset.

4.2 Conclusions, limitations and the road ahead

This report has considered the socioeconomic benefits of innovative rural mobility solutions based on data from a selection of pilot activities from the MAMBA partner regions. Though we faced substantial challenges in collecting the data, several key outcomes of this activity are evident.

First, this activity has resulted in a methodology and critical indicators which allow for the assessment of the socioeconomic effects of innovative rural mobility solutions. This methodology has a basis in economic theory, drawing in particular on cost-effectiveness analysis as a framework. It also presents specific social indicators along with concrete suggestions on how these may be measured. This is expected to be useful to the partner regions going beyond the MAMBA project. It may also be of use to stakeholders involved in developing innovative rural mobility solutions in other contexts (e.g. municipalities, policymakers, service providers).

In addition, the results of the social surveys from the County of Cuxhaven provide some support for the broader social and economic benefits of innovative rural mobility solutions. Particularly relevant is the importance of the service in supporting some users to be economically active and others to remain in their own home. Though this finding may relate to only a small number of users, the nature of these benefits may be enough to justify the cost of the mobility solution.

Developing financially profitable mobility solutions in rural areas is difficult. Despite this, when viewed in light of their broader social and economic benefits, innovative rural mobility solutions may be considered cost-effective overall. These services are highly important in satisfying basic social needs, which can be challenging in remote rural areas.

The results of this study provide some support for the notion that mobility and accessibility solutions can be seen as cost-effective when viewed in their broader socioeconomic context. Continued development and further application of this methodology would be useful in gathering further support for this idea, paving the way for more stable financial support for the development and ongoing operation of mobility and accessibility services in rural areas.

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Appendix I. Questionnaires for partner regions

County of Cuxhaven – User survey

We would like to hear about your experience using the Transport on Demand service. All responses will be anonymous, and you are welcome to skip any questions you don't feel comfortable answering. Your input will help us in our ongoing work to increase mobility and accessibility in Cuxhaven. We look forward to hearing what you think!

How old are you?

[ ] under 18
[ ] 18-29
[ ] 30-45
[ ] 46-64
[ ] 65-74
[ ] 75+

Which of the following best describes your daily activities?

[ ] Working full-time
[ ] Working part-time
[ ] Studying at university
[ ] Studying at school
[ ] Balancing study and work
[ ] Retired
[ ] Unemployed
[ ] Other

What was the purpose of your trip?

[ ] Going to a medical appointment
[ ] Using a service (e.g. bank, post office, hairdressers, library)
[ ] Using a support service (e.g. counselling, jobseeker service)
[ ] Shopping
[ ] Leisure
[ ] Visiting family/friends
[ ] Work
[ ] Going to school/studies
[ ] Day trip
[ ] Just to get out

Other (please state): _____

How would you have travelled if this service was not available?

[ ] Another form of PT
[ ] Lift from a friend or relative
[ ] Drive myself
[ ] Cycle
[ ] Walking
[ ] Taxi
[ ] The trip would not have been possible

Other (please state): _____

To what extent do you agree with the following statements about the transport service?

	strongly disagree	disagree	unsure	agree	strongly agree
The service helps me get out and about more	[ ]	[ ]	[ ]	[ ]	[ ]
Without this service I would find it difficult to access activities	[ ]	[ ]	[ ]	[ ]	[ ]
I use public transport more often due to the service	[ ]	[ ]	[ ]	[ ]	[ ]
I don't have to rely on family as much for lifts now I use the service	[ ]	[ ]	[ ]	[ ]	[ ]
I have more flexibility because of the service (e.g. types of activities, timing of activities)	[ ]	[ ]	[ ]	[ ]	[ ]
The service gives me access to a greater variety of activities than I had before	[ ]	[ ]	[ ]	[ ]	[ ]
The service gives me access to a broader range of health care services (e.g. doctors pharmacies)	[ ]	[ ]	[ ]	[ ]	[ ]
The service helps me keep living in my own home	[ ]	[ ]	[ ]	[ ]	[ ]

How does the transport service effect you work or studies?

	strongly disagree	disagree	unsure	agree	strongly agree
The service makes it easier for me to get to work	[ ]	[ ]	[ ]	[ ]	[ ]

I have access to more job opportunities because of the service	[ ]	[ ]	[ ]	[ ]	[ ]
The service made it possible for me to get a job					
The service makes it easier for me to get to the place where I study	[ ]	[ ]	[ ]	[ ]	[ ]
I have access to more education opportunities because of the service	[ ]	[ ]	[ ]	[ ]	[ ]

On a scale of 1-10 (10 being the highest score), how well does the transport service meet your needs?

1 2 3 4 5 6 7 8 9 10

What suggestions do you have for how we can improve the service?

Do you have any other comments?

Thank you for your feedback 😊

Mobile counselling service – User survey

The Diaconie of Schleswig Holstein would like to hear about your experience setting up the village carer service. All responses will be anonymous, and you are welcome to skip any questions you don't feel comfortable answering. Your input will help us in our ongoing work to increase accessibility in Hooge. We look forward to hearing what you think!

How old are you?

[ ] under 18
[ ] 18-29
[ ] 30-45
[ ] 46-64
[ ] 65-74
[ ] 75+

What is your gender?

[ ] Female
[ ] Male
[ ] Other
[ ] Prefer not to say

How would you describe your general health?

[ ] I am generally in very good health
[ ] I am generally in fairly good health
[ ] My health is mostly good, but I have some problems from time to time
[ ] I have some problems with my health
[ ] I have a lot of problems with my health

How would you describe your skills in using computers and the internet?

[ ] I am very confident using computers and the internet
[ ] I am somewhat confident using computers and the internet
[ ] I find it difficult to use computers and the internet
[ ] I have never used computers or the internet

How was it for you to be involved in the design of the village carer program?

	strongly disagree	disagree	unsure	agree	strongly agree
The process has been valuable overall	[ ]	[ ]	[ ]	[ ]	[ ]
I am more likely to use the service because of my involvement in its design	[ ]	[ ]	[ ]	[ ]	[ ]
The process allowed me to reflect on my feelings about growing old on Hooge	[ ]	[ ]	[ ]	[ ]	[ ]

I feel more confident about growing old on Hooge following the process	[ ]	[ ]	[ ]	[ ]	[ ]
The process provided a good opportunity to socialise with friends and neighbours	[ ]	[ ]	[ ]	[ ]	[ ]
The process paved the way for other community-led initiatives on Hooge	[ ]	[ ]	[ ]	[ ]	[ ]
The process included participation from a diverse range of Hooge residents	[ ]	[ ]	[ ]	[ ]	[ ]

Please tell us what you think about the service itself

	strongly disagree	disagree	unsure	agree	strongly agree
It will be valuable to have access to mobile counselling from Hooge	[ ]	[ ]	[ ]	[ ]	[ ]
I will use the mobile counselling service	[ ]	[ ]	[ ]	[ ]	[ ]
I feel confident using the technology required to access the online counselling service	[ ]	[ ]	[ ]	[ ]	[ ]
I would be more comfortable with face-to-face counselling	[ ]	[ ]	[ ]	[ ]	[ ]
Knowing that I have access to the online counselling service makes me feel more confident about growing old on Hooge	[ ]	[ ]	[ ]	[ ]	[ ]

On a scale of 1-10 (10 being the highest score), how would you rate the process of setting up the village carer service?

1 2 3 4 5 6 7 8 9 10

On a scale of 1-10 (10 being the highest score), how well do you think the new service will meet your needs?

1 2 3 4 5 6 7 8 9 10

What suggestions do you have for how the process of setting up the village carer service could have been improved?

What suggestions do you have about how the service itself could better meet your needs?

Do you have any other comments?

Thank you for your feedback 😊

POJO App – User survey

We would like to hear about your experience using POJO. All responses will be anonymous, and you are welcome to skip any questions you don't feel comfortable answering. Your input will help us in our ongoing work to increase mobility and accessibility in North Karelia. We look forward to hearing what you think!

How old are you?

[ ] under 18
[ ] 18-29
[ ] 30-45
[ ] 46-64
[ ] 65-74
[ ] 75+

What is your gender?

[ ] Female
[ ] Male
[ ] Other
[ ] Prefer not to say

Where do you live?

[ ] Ilomantsi
[ ] Joensuu
[ ] Juuka
[ ] Kitee
[ ] Kontiolahti
[ ] Heinävesi
[ ] Lieksa
[ ] Liperi
[ ] Nurmes
[ ] Outokumpu
[ ] Polvijärvi
[ ] Rääkkylä
[ ] Tohmajärvi
[ ] Other (please state): _____

Which of the following best describes your daily activities?

[ ] Working full-time
[ ] Working part-time
[ ] Studying full time
[ ] Studying part-time
[ ] Balancing study and work
[ ] Retired
[ ] Unemployed
[ ] Other

For what type of trips do you generally use the POJO App?

	often	sometimes	never

Going to a medical appointment	[ ]	[ ]	[ ]
Using a service (e.g. bank, post office, hairdressers, library)	[ ]	[ ]	[ ]
Using a support service (e.g. counselling, jobseeker service)	[ ]	[ ]	[ ]
Shopping	[ ]	[ ]	[ ]
Leisure	[ ]	[ ]	[ ]
Visiting family/friends	[ ]	[ ]	[ ]
Work	[ ]	[ ]	[ ]
Education	[ ]	[ ]	[ ]
Day trip	[ ]	[ ]	[ ]
Other (please state): _____			

How do you usually get around?

[ ] Another form of PT
[ ] Lift from a friend or relative
[ ] Drive myself
[ ] Cycle
[ ] Walking
[ ] Taxi
[ ] The trip would not have been possible

Other (please state): _____

How has the POJO app affected your daily activities?

	strongly disagree	disagree	unsure	agree	strongly agree
POJO helps me get out and about more	[ ]	[ ]	[ ]	[ ]	[ ]
POJO makes it easier for me to get around	[ ]	[ ]	[ ]	[ ]	[ ]
I use public transport more often due to POJO	[ ]	[ ]	[ ]	[ ]	[ ]
POJO makes it easier for me to get to work	[ ]	[ ]	[ ]	[ ]	[ ]
The service makes it easier for me to get to the place where I study	[ ]	[ ]	[ ]	[ ]	[ ]

POJO gives me access to a greater variety of shops and activities than I had before	[ ]	[ ]	[ ]	[ ]	[ ]
Without POJO I would find it difficult to access activities	[ ]	[ ]	[ ]	[ ]	[ ]

What do you think about the POJO app?

	strongly disagree	disagree	unsure	agree	strongly agree
The POJO app is easy to use	[ ]	[ ]	[ ]	[ ]	[ ]
The information provided by the POJO app is reliable and up-to-date	[ ]	[ ]	[ ]	[ ]	[ ]
I generally feel confident using digital platforms (e.g. Facebook, mobile phone apps)	[ ]	[ ]	[ ]	[ ]	[ ]
I feel more confident using digital platforms since I started using the POJO app	[ ]	[ ]	[ ]	[ ]	[ ]
I sometimes have trouble using the POJO app because of poor internet connectivity	[ ]	[ ]	[ ]	[ ]	[ ]

On a scale of 1-10 (10 being the highest score), how well does the POJO app meets your needs?

1	2	3	4	5	6	7	8	9	10

Do you have any suggestions for how we can improve the POJO app? Or any other comments?

Do you have any other comments?

Thank you for your feedback 😊

Transport on Demand – User survey

Vidzeme Planning Region would like to hear about your experience using the Transport on Demand service. All responses will be anonymous, and you are welcome to skip any questions you don't feel comfortable answering. Your input will help us in our ongoing work to increase mobility and accessibility in Vidzeme Region. We look forward to hearing what you think!

How old are you?

[ ] under 18
[ ] 18-29
[ ] 30-45
[ ] 46-64
[ ] 65-74
[ ] 75+

What is your gender?

[ ] Female
[ ] Male
[ ] Other
[ ] Prefer not to say

Where do you live? (to be added by partner)

[ ]
[ ]
[ ]
[ ]
[ ]
[ ]

How would you describe your general health?

[ ] I am generally in very good health
[ ] I am generally in fairly good health
[ ] My health is mostly good, but I have some problems from time to time
[ ] I have some problems with my health
[ ] I have a lot of problems with my health

What was the purpose of your trip?

[ ] Going to a medical appointment
[ ] Using a service (e.g. bank, post office, hairdressers, library)
[ ] Using a support service (e.g. counselling, jobseeker service)
[ ] Shopping
[ ] Leisure
[ ] Visiting family/friends
[ ] Work
[ ] Education
[ ] Day trip
[ ] Just to get out

Other (please state): _____

How would you have travelled if this service was not available?

[ ] Another form of PT
[ ] Lift from a friend, relative, neighbour
[ ] Drive myself
[ ] Cycle
[ ] Walking
[ ] Taxi
[ ] The trip would not have been possible

Other (please state): _____

To what extent do you agree with the following statements about the Transport on Demand service?

	strongly disagree	disagree	unsure	agree	strongly agree
The service allows me to get out of the house	[ ]	[ ]	[ ]	[ ]	[ ]
Without this service I would find it difficult to access activities	[ ]	[ ]	[ ]	[ ]	[ ]
I don't have to rely on family as much for lifts now I use the service	[ ]	[ ]	[ ]	[ ]	[ ]
I have more flexibility because of the service (e.g. types of activities, timing of activities)	[ ]	[ ]	[ ]	[ ]	[ ]
The service helps me keep living in my own home	[ ]	[ ]	[ ]	[ ]	[ ]
This service helps me meet friends and family	[ ]	[ ]	[ ]	[ ]	[ ]
My overall wellbeing is better since I've been using the service	[ ]	[ ]	[ ]	[ ]	[ ]
I feel more secure now having ToD service	[ ]	[ ]	[ ]	[ ]	[ ]
The service has saved me money	[ ]	[ ]	[ ]	[ ]	[ ]

To what extent do you agree with the following statements about your health?

	strongly disagree	disagree	unsure	agree	strongly agree

The service gives me access to a broader range of health care services	[ ]	[ ]	[ ]	[ ]	[ ]
I can see the doctor whenever I need to because of the service	[ ]	[ ]	[ ]	[ ]	[ ]
I miss less medical appointments now I use the service	[ ]	[ ]	[ ]	[ ]	[ ]
My general health is better since using the service	[ ]	[ ]	[ ]	[ ]	[ ]
I have less need for home visits from doctors now that I use the service	[ ]	[ ]	[ ]	[ ]	[ ]
The service makes it easier for me to get my medication	[ ]	[ ]	[ ]	[ ]	[ ]

On a scale of 1-10 (10 being the highest score), how well does the service meets your needs?

1	2	3	4	5	6	7	8	9	10

What suggestions do you have for how we can improve the service?

Do you have any other comments?

Thank you for your feedback 😊

MAMBAGO User survey

The team at MAMBAGO would like to hear about your experience using the service. All responses will be anonymous, and you are welcome to skip any questions you don't feel comfortable answering. Your input will help us in our ongoing work to increase mobility and accessibility in your region. We look forward to hearing what you think!

How old are you?

[ ] under 18
[ ] 18-29
[ ] 30-45
[ ] 46-64
[ ] 65-74
[ ] 75+

Which of the following best describes your daily activities?

[ ] Working full-time
[ ] Working part-time
[ ] Studying full time
[ ] Studying part-time
[ ] Balancing study and work
[ ] Retired
[ ] Unemployed
[ ] Other

Had you used a ridesharing service before using MAMBAGO?

[ ] No
[ ] Yes, once or twice
[ ] Yes, several times
[ ] Yes, frequently

For what type of trips do you generally use MAMBAGO? (choose as many as you like from the following)

[ ] Going to a medical appointment
[ ] Using a service (e.g. bank, post office, hairdressers, library)
[ ] Using a support service (e.g. counselling, jobseeker service)
[ ] Shopping
[ ] Leisure
[ ] Visiting family/friends
[ ] Work
[ ] Education
[ ] Day trip
[ ] Just to get out

Other (please state): _____

How would you have travelled MAMBAGO was not available?

[ ] Public transport
[ ] Lift from a friend or relative
[ ] Drive myself
[ ] Cycle
[ ] Walking
[ ] Taxi
[ ] The trip would not have been possible

Other (please state): _____

To what extent do you agree with the following statements about MAMBAGO?

	strongly disagree	disagree	unsure	agree	strongly agree
MAMBAGO helps me get out and about more	[ ]	[ ]	[ ]	[ ]	[ ]
Without MAMBAGO I would find it difficult to access activities	[ ]	[ ]	[ ]	[ ]	[ ]
I have met new people using MAMBAGO	[ ]	[ ]	[ ]	[ ]	[ ]
The service gives me access to a greater variety of shops and activities than I had before	[ ]	[ ]	[ ]	[ ]	[ ]
I don't have to rely on family as much for lifts now I use the service	[ ]	[ ]	[ ]	[ ]	[ ]
MAMBAGO gives me more flexibility (e.g. types of activities, timing of activities)	[ ]	[ ]	[ ]	[ ]	[ ]
The MAMBAGO app is easy to use	[ ]	[ ]	[ ]	[ ]	[ ]
I sometimes have trouble using the MAMBAGO app because of poor internet connectivity	[ ]	[ ]	[ ]	[ ]	[ ]

How has MAMBAGO affected your work and/or study life?

	strongly disagree	disagree	unsure	agree	strongly agree
MAMBAGO makes it easier for me to get to work	[ ]	[ ]	[ ]	[ ]	[ ]
I have access to more job opportunities because of MAMBAGO	[ ]	[ ]	[ ]	[ ]	[ ]

MAMBAGO made it possible for me to get a job	[ ]	[ ]	[ ]	[ ]	[ ]
MAMBAGO makes it easier for me to get to the place where I study	[ ]	[ ]	[ ]	[ ]	[ ]
I have access to more education opportunities because of MAMBAGO	[ ]	[ ]	[ ]	[ ]	[ ]
MAMBAGO makes it possible for me to study without moving away from home	[ ]	[ ]	[ ]	[ ]	[ ]

On a scale of 1-10 (10 being the highest score), how well does **the service meets your needs?

1	2	3	4	5	6	7	8	9	10

What suggestions do you have for how we can improve **the service?

Do you have any other comments?

Thank you for your feedback 😊

NaboGO – User survey

The team at NaboGO would like to hear about your experience using the service. All responses will be anonymous, and you are welcome to skip any questions you don't feel comfortable answering. Your input will help us in our ongoing work to increase mobility and accessibility in your region. We look forward to hearing what you think!

How old are you?

[ ] under 18
[ ] 18-29
[ ] 30-45
[ ] 46-64
[ ] 65-74
[ ] 75+

What is your gender?

[ ] Female
[ ] Male
[ ] Other
[ ] Prefer not to say

Where do you live? (answer choices to be added by partner)

Had you used a ridesharing service before using NaboGO?

[ ] No
[ ] Yes, once or twice
[ ] Yes, several times
[ ] Yes, frequently

Which of the following best describes your daily activities?

[ ] Working full-time
[ ] Working part-time
[ ] Studying full time
[ ] Studying part-time
[ ] Balancing study and work
[ ] Retired
[ ] Unemployed
[ ] Other

For what type of trips do you generally use NaboGO? (choose as many as you like from the following)

[ ] Going to a medical appointment
[ ] Using a service (e.g. bank, post office, hairdressers, library)

[ ] Using a support service (e.g. counselling, jobseeker service)
[ ] Shopping
[ ] Leisure
[ ] Visiting family/friends
[ ] Work
[ ] Education
[ ] Day trip
[ ] Just to get out

Other (please state): _____

How would you have travelled NaboGO was not available?

[ ] Another form of PT
[ ] Lift from a friend or relative
[ ] Drive myself
[ ] Cycle
[ ] Walking
[ ] Taxi
[ ] The trip would not have been possible

Other (please state): _____

To what extent do you agree with the following statements about NaboGO?

	strongly disagree	disagree	unsure	agree	strongly agree
NaboGO helps me get out and about more	[ ]	[ ]	[ ]	[ ]	[ ]
Without NaboGO I would find it difficult to access activities	[ ]	[ ]	[ ]	[ ]	[ ]
I have met new people using NaboGO	[ ]	[ ]	[ ]	[ ]	[ ]
NaboGO helps me meet friends and family	[ ]	[ ]	[ ]	[ ]	[ ]
The service gives me access to a greater variety of shops and activities than I had before	[ ]	[ ]	[ ]	[ ]	[ ]
The NaboGO app is easy to use	[ ]	[ ]	[ ]	[ ]	[ ]
I sometimes have trouble using the NaboGO app because of poor internet connectivity	[ ]	[ ]	[ ]	[ ]	[ ]

NaboGO makes it easier for me to get to work	[ ]	[ ]	[ ]	[ ]	[ ]
I have access to more job opportunities because of NaboGO	[ ]	[ ]	[ ]	[ ]	[ ]
NaboGO made it possible for me to get a job	[ ]	[ ]	[ ]	[ ]	[ ]
The service makes it easier for me to get to the place where I study	[ ]	[ ]	[ ]	[ ]	[ ]
I have access to more education opportunities because of NaboGO	[ ]	[ ]	[ ]	[ ]	[ ]
NaboGO makes it possible for me to study without moving away from home	[ ]	[ ]	[ ]	[ ]	[ ]

On a scale of 1-10 (10 being the highest score), how well does NaboGO meets your needs?

1	2	3	4	5	6	7	8	9	10

What other suggestions or comments do you have about NaboGO?

Thank you for your feedback 😊

Alpha – User survey

How old are you?

[ ] under 18
[ ] 18-29
[ ] 30-45
[ ] 46-64
[ ] 65-74
[ ] 75+

Which of the following best describes your daily activities?

[ ] Working full-time
[ ] Working part-time
[ ] Studying full time
[ ] Studying part-time
[ ] Balancing study and work
[ ] Retired
[ ] Unemployed
[ ] Other

What was the purpose of your trip?

[ ] Going to a medical appointment
[ ] Using a service (e.g. bank, post office, hairdressers, library)
[ ] Using a support service (e.g. counselling, jobseeker service)
[ ] Shopping
[ ] Leisure
[ ] Visiting family/friends
[ ] Work
[ ] Education
[ ] Day trip
[ ] Just to get out

Other (please state): _____

How would you have travelled if this service was not available?

[ ] Another form of PT
[ ] Lift from a friend or relative

[ ] Drive myself
[ ] Cycle
[ ] Walking
[ ] Taxi
[ ] The trip would not have been possible

Other (please state): _____

To what extent do you agree with the following statements about the transport service?

	strongly disagree	disagree	unsure	agree	strongly agree
This service helps me get out and about more	[ ]	[ ]	[ ]	[ ]	[ ]
Without this service I would find it difficult to access activities	[ ]	[ ]	[ ]	[ ]	[ ]
I don't have to rely on family as much for lifts now I use the service	[ ]	[ ]	[ ]	[ ]	[ ]
I use public transport more often due to the service	[ ]	[ ]	[ ]	[ ]	[ ]
The service gives me access to a greater variety of shops and activities than I had before	[ ]	[ ]	[ ]	[ ]	[ ]
The service gives me access to a broader range of health care services	[ ]	[ ]	[ ]	[ ]	[ ]
This service allows me to enjoy nature and/or cultural attractions	[ ]	[ ]	[ ]	[ ]	[ ]

How does the transport service effect you work or studies?

	strongly disagree	disagree	unsure	agree	strongly agree
The service makes it easier for me to get to work	[ ]	[ ]	[ ]	[ ]	[ ]
I have access to more job opportunities because of the service	[ ]	[ ]	[ ]	[ ]	[ ]
The service made it possible for me to get a job	[ ]	[ ]	[ ]	[ ]	[ ]
The service makes it easier for me to get to the place where I study	[ ]	[ ]	[ ]	[ ]	[ ]

I have access to more education opportunities because of the service	[ ]	[ ]	[ ]	[ ]	[ ]
The service makes it possible for me to study without moving away from home	[ ]	[ ]	[ ]	[ ]	[ ]

On a scale of 1-10 (10 being the highest score), how well does the transport service meet your needs?

1 2 3 4 5 6 7 8 9 10

What suggestions do you have for how we can improve the service?

Do you have any other comments?

Thank you for your feedback 😊

Trelleborg coworking space – User survey

Trelleborg Municipality would like to hear about your experience using the coworking space. All responses will be anonymous, and you are welcome to skip any questions you don't feel comfortable answering. Your input will help us in our ongoing work to increase mobility and accessibility in the municipality. We look forward to hearing what you think!

How old are you?

[ ] under 18
[ ] 18-29
[ ] 30-45
[ ] 46-64
[ ] 65-74
[ ] 75+

Which of the following best describes your daily activities?

[ ] Working full-time
[ ] Working part-time
[ ] Self-employed
[ ] Studying full time
[ ] Studying part-time
[ ] Balancing study and work
[ ] Retired
[ ] Unemployed
[ ] Other

Why do you visit the coworking space (choose as many as you like from the following)?

[ ] Provides a quiet place to work
[ ] Provides a good opportunity to socialise
[ ] To avoid distractions at home
[ ] To avoid commuting to Malmö

Other (please state): _____

Where would you work if the coworking space was not available?

[ ] Office in Malmö
[ ] Office elsewhere
[ ] My home

[ ] A cafe
[ ] Local library
[ ] I would have nowhere to work

Other (please state): _____

How does the coworking space affect working life?

	strongly disagree	disagree	unsure	agree	strongly agree
My working life has improved because of the coworking space	[ ]	[ ]	[ ]	[ ]	[ ]
I have more opportunity to work from a distance because of the coworking space	[ ]	[ ]	[ ]	[ ]	[ ]
The coworking space has improved my work-life balance	[ ]	[ ]	[ ]	[ ]	[ ]
It would be difficult for me to work effectively without the coworking space	[ ]	[ ]	[ ]	[ ]	[ ]
People who live in Trelleborg are more likely to start their own businesses because they have access to the coworking space	[ ]	[ ]	[ ]	[ ]	[ ]
Young entrepreneurs are more likely to choose to live and work in Trelleborg because of the coworking space	[ ]	[ ]	[ ]	[ ]	[ ]

How does the coworking space affect life in general?

	strongly disagree	disagree	unsure	agree	strongly agree
The coworking space allows me to get out of the house	[ ]	[ ]	[ ]	[ ]	[ ]
I spend less time commuting because of the coworking space	[ ]	[ ]	[ ]	[ ]	[ ]
I have met new people using the coworking space	[ ]	[ ]	[ ]	[ ]	[ ]
The coworking space helps me keep living in Trelleborg	[ ]	[ ]	[ ]	[ ]	[ ]

The coworking space promotes a sense of community in Trelleborg	[ ]	[ ]	[ ]	[ ]	[ ]
My overall wellbeing is better since I've been using the coworking space	[ ]	[ ]	[ ]	[ ]	[ ]

On a scale of 1-10 (10 being the highest score), how well does the coworking space meet your needs?

1 2 3 4 5 6 7 8 9 10

What other suggestions and comments do you have about the coworking space?

Thank you for your feedback 😊

Title of service – User survey

How old are you?

[ ] under 18
[ ] 18-29
[ ] 30-45
[ ] 46-64
[ ] 65-74
[ ] 75+

What is your gender?

[ ] Female
[ ] Male
[ ] Other
[ ] Prefer not to say

How would you describe your general health?

[ ] very good
[ ] good
[ ] fair
[ ] bad
[ ] very bad

What was the purpose of your trip?

[ ] Going to a medical appointment
[ ] Using a service (e.g. bank, post office, hairdressers, library)
[ ] Using a support service (e.g. counselling, jobseeker service)
[ ] Shopping
[ ] Leisure
[ ] Visiting family/friends
[ ] Work
[ ] Education
[ ] Day trip
[ ] Just to get out

Other (please state): _____

How would you have travelled if this service was not available?

[ ] Another form of PT
[ ] Lift from a friend or relative
[ ] Drive myself
[ ] Cycle
[ ] Walking

[ ] Taxi
[ ] The trip would not have been possible

Other (please state): _____

To what extent do you agree with the following statements about the service?

	strongly disagree	disagree	unsure	agree	strongly agree
The service allows me to get out of the house	[ ]	[ ]	[ ]	[ ]	[ ]
Without this service I would find it difficult to access activities	[ ]	[ ]	[ ]	[ ]	[ ]
I like to socialise with other passengers and/or driver during the journey	[ ]	[ ]	[ ]	[ ]	[ ]
I don't have to rely on family as much for lifts now I use the service	[ ]	[ ]	[ ]	[ ]	[ ]
I have more flexibility because of the service (e.g. types of activities, timing of activities)	[ ]	[ ]	[ ]	[ ]	[ ]
This service helps me meet friends and family	[ ]	[ ]	[ ]	[ ]	[ ]
I can participate more actively in the community because of the service	[ ]	[ ]	[ ]	[ ]	[ ]
This service allows me to enjoy nature and/or cultural attractions	[ ]	[ ]	[ ]	[ ]	[ ]

To what extent do you agree with the following statements about your health and wellbeing?

	strongly disagree	disagree	unsure	agree	strongly agree
The service gives me access to a broader range of health care services	[ ]	[ ]	[ ]	[ ]	[ ]
I can see the doctor whenever I need to because of the service	[ ]	[ ]	[ ]	[ ]	[ ]
I have less need for home visits from doctors now that I use the service	[ ]	[ ]	[ ]	[ ]	[ ]
My general health is better since I've been using the service	[ ]	[ ]	[ ]	[ ]	[ ]

My overall wellbeing is better since I've been using the service	[ ]	[ ]	[ ]	[ ]	[ ]

On a scale of 1-10 (10 being the highest score), how well does the service meets your needs?

1	2	3	4	5	6	7	8	9	10

What other comments or suggestions do you have about the service?

Do you have any other comments?

Thank you for your feedback 😊

Appendix II. Example of promotional flyer

Pohjois-Karjalan joukkoliikennepalvelu
POJO – Käyttäjäkysely

Tällä kyselyllä haluamme kartoittaa kokemuksiasi POJO joukkoliikennepalvelun käytöstä ja toiminnallisuudesta. Voit vastata kyselyyn nimettömästi ja ohittaa sellaiset kysymykset, joihin et halua vastata. Kaikki vastaukset käsitellään luottamuksellisesti. Kyselyn tuloksia hyödynnetään POJO joukkoliikennepalvelun kehittämisessä.

Scan the QR-code to access the survey

Add your logo here

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