AALBORG UNIVERSITY
STUDENT REPORT

# The significance of public transport

- *Public transport's role in a rural community in Vesthimmerland Municipality*

**Master Thesis**
Urban Planning and Management

Spring 2020

Fie Salhøj-Abel &
Magnus Sebastian Behrendt

AALBORG UNIVERSITY
STUDENT REPORT

**The Study Board of Planning and Surveying**
Urban Planning and Management
Rendsburggade 14
DK - 9000 Aalborg
Tlf. 99 40 72 16
Sekretariat-pgl-sn@plan.aau.dk
www.bem.aau.dk

**Title:**

The significance of public transport

**Project:**

Master thesis

**Project period:**

February 2020 - June 2020

**Study group:**

UPM42020-2

**Group members:**

Fie Salhøj-Abel
Magnus Sebastian Behrendt

**Supervisor:**

Malene Freudendal-Pedersen

**Number of pages: 92**
**Appendixes: 6**
**Hand-in: June 4th 2020**

**Synopsis**:

This master thesis focuses on answering the following research question: *What role does public transport have in a rural community in Vesthimmerland Municipality?* By investigating a community's motility from the perceptive of a traffic planner and the community itself, it becomes evident that public transport has a large significance. According to a traffic planner's perspective, the community is well connected to the local area as well as the larger cities. The community does not perceive it similarly. They express that they are well connected to the larger cities, but must rely on the car for errands in the local area. The investigation further revealed that public transport's role is more symbolic rather than a needed service. It represents connectivity and secures the possibility of being mobile, even though it is the last preferred mobility mode.

# Preface

This Master Thesis is made by group 2, which consists of two students at the master's education in Urban Planning and Management at Aalborg University in Denmark. The thesis revolves around public transport in rural areas, because it has been a topic of interest. Furthermore, it is chosen because the traffic authority of the North Denmark Region (NT) had been able to collaborate about the topic.

The Thesis is mainly directed towards the external examiner and supervisor at the study program. Furthermore, it is hoped that NT and others with interest in the topic will read it.

The group will like to thank our supervisor Malene Freudendal-Pedersen for advice, feedback, guidance and great engagement in the topic.
Furthermore, the group will especially thank Kristoffer Martens for the initial meeting at NT, where he contributed with sparring about the topic of Mainweb-West.
The group, will thank Mikael B. Skov, Maria Kjærup, Niels Agerholm for sparring, feedback and sharring of knowleagde from their research
Moreover, the group will thank Kaj Bräuner Sørensen, Tina Jul, Flemming Adolfson, Lars Erik Bengtsson and Niels Christian Dalgaard for participating in qualitative interviews and contributing with interesting perspectives of the rural communities at Skarp Salling.

**Reading instruction**

Harvard referencing style is used for the sources in this master thesis. The references during the text function as hyperlinks with direct links to the bibliography at the end of the thesis. The bibliography is sorted by alphabetical order. In the appendixes are the interview guides present to all the interviews, which are delivered as files separately from the thesis. Transcriptions or sound files to each interview can be sent from the group after wishes. Likewise, the notes from the initial meeting with NT and the scientific investigators at Aalborg University can be sent as well. All figures, tables and maps in the thesis are made by the study group. They are numbered according to the chapters they are presented in. A caption linked to the illustration appears after each figure number. Moreover, the picture of the front page is taken and edited by the study group.

# Abstract

A general subject of attention in the global society is the vicious circle in rural areas. In order to limit the decline in population, it is necessary to look into how an area can become more attractive. One way of making an area more attractive is by ensuring mobility possibilities to social relations, services and job opportunities. Many rural areas have through the years experienced a reduction in the public transportation services which have caused some to be socially excluded. These areas have often adapted their mobility behavior towards the use of the car in order to be mobile. The traffic authority of the North Denmark Region (NT) has launched a new project called Mainweb-West that seeks to secure that everyone has the possibility to be mobile in rural areas. NT's project involves both high frequency of bus departures along the main corridors and a FMOD service called Plustur. However, if everyone relies on the car to be mobile, what significance does public transport then have in a rural area? The aim of this master thesis is to uncover the role of public transport in a community in Vesthimmerland Municipality. In order to understand the community's motility, the investigation is based on the perspectives of a traffic planner and the community. The results from the investigations revealed that public transport's role is more a symbol of connectivity rather than a service preferred to be used. Furthermore, it is perceived as a safety to ensure the possibility to be mobile.

**Keywords:** Rural area, Public transport, Mobility, Motility, Connectivity

# Dansk resumé

Mange landområder i Europa er i dag udfordret af en tilbagegang i deres befolkningsudvikling, hvilket har medført en mindskning i tilgængelige serviceydelser. Herunder har nogle af de mindst befolkede områder oplevet en afvikling af offentlig transport, da det økonomisk ikke kan betale sig at opretholde servicen. Dette opleves eksempelvis i Sverige og Storbritannien, hvor nogle landområder ikke længere har offentlig transport tilgængeligt. Udviklingen har medført, at befolkningen i landområder har tilpasset sig mulighederne og derfor er afhængige af at have en bil i dag.

Dette speciale fokuserer på at forstå offentlig transports betydning for et lokalsamfund på landet og blive klogere på om det har indflydelse på indbyggernes hverdag. Specialet er baseret på et gensidigt samarbejde med Nordjyllands Trafikselskab (NT), som har været interesseret i at få undersøgt indflydelsen af en række initiativer i deres projekt: Hovednet-Vest. Et af deres initiativer er flere busafgange mellem de største byer i fire yderkommuner og landkommuner i den nordvestlige del af Danmark. Et andet initiativ er Plustur, som giver alle borgere mulighed for at blive kørt til eller hentet ved det nærmeste busstoppested for samme pris, som en busbillet. NT har dermed forbedret mulighederne for at være mobil i de tyndtbefolkede områder i Region Nordjylland og sikret at alle har mulighed for at være forbundet til busnettet.

En af de fire kommuner, der er en del af Hovednet-Vest, er Vesthimmerlands Kommune, som undersøges i dette projekt. I denne nordlige del af denne kommune, er der et landsbysamfund ved byen Skarp Salling. Det er dette området undersøgelsen tager udgangspunkt i, da der her er kommet flere busafgange i forbindelse med NT's projekt. Projektet omhandler dermed en undersøgelse af offentlig transports betydning for dette lokalområde.

I undersøgelsen har det været nødvendigt at opbygge en teoretisk forståelse for kunne undersøge offentlig transports betydning for et landsbysamfund. Denne forståelse er indsamlet ved hjælp af tre anerkendte forskere, der beskæftige sig med mobilitetsplanlægning og sociologi. Den teoretiske ramme for projektet tager blandt andet inspiration fra John Urry's (2007) bog *Mobilities* til at kunne forstå følelsen af at være forbundet med andre områder. Malene Freudendal-Pedersen (2007) teori om strukturelle historier fra textitMellem frihed og ufrihed er ligeledes anvendt til at undersøge begrundelser bag landsbysamfundets valg af mobilitet. Derudover er der taget inspiration fra Vincent Kaufmann's (2002) bog *Re-Thinking Mobility*

til at forstå, hvilke transportformer der er med i overvejelserne om at være mobil og hvilke argumentationer, der ligger bag valget. Den teoretiske forståelse danner en analytisk ramme til at strukturere den efterfølgende analyse. Rammen er ligeledes brugt som et redskab til at analysere en trafikplanlæggers intentioner bagved de offentlige transportmuligheder der er i lokalsamfundet. Denne viden er indsamlet via et litteratur review af videnskabelige artikler og en dokumentanalyse af tekster, der er skrevet af NT. Analyserammen er ligeledes anvendt til at forstå landsbysamfundets argumenter for, hvilken betydning offentlig transport har for dem.

Landsbysamfundets perspektiv på betydningen af offentlig transport er indsamlet ved hjælp af interviews af repræsentanter for forskellige grupper i Skarp Salling og omegn. Herunder er det forsøgt at indsamle data fra forskellige aldersgrupper (på tværs af landsbyerne), for at få forskellige perspektiver og dermed input på betydningen af offentlig transport. Interviewene er suppleret med en dokument analyse af en skolevejsanalyse for den lokale skole, for at få indsigt i børnenes transportvaner.

Et af de resultater, der er kommet ud af undersøgelsen er, at busserne har stor betydning for landsbysamfundene. Busserne skaber en synlig forbindelse, så indbyggerne føler sig forbundet til de større byer. Repræsentanterne fremhæver yderligere, at busserne er en vigtig service for landsbyerne, der mindsker affolkningen i områderne. Landsbysamfundet anvender dog sjældent offentlig transport, da de fleste har biler til rådighed. De fremhæver ligeledes, at de ikke kan benytte offentlig transport til at komme rundt til mindre byer i lokalområdet. Dette skaber NT's nye initiativ Plustur dog muligheden for. I og med, at landbysamfundet ikke er opmærksomme på denne mulighed, bliver Plustur dog ikke betragtet som en af mobilitetsmulighederne.

Overordnet set værdsættes busserne som en nødløsning for lokalsamfundet, hvis de ikke har andre mobilitetsmuligheder. Det gør det nemt at have børn på landet, når busserne går ofte til og fra de større byer. Læringen fra denne undersøgelse er dermed, at offentlig transport har stor betydning på landsbysamfundene, selvom de ikke nødvendigvis bruger det ofte. Offentlig transports rolle i landområderne omhandler derfor ikke anvendelsen af dem, men derimod om den sikkerhed de udbyder og den forbindelse de skaber til andre områder.

# Disclaimer from Head of Studies and Head of Study Boards

COVID19 and the consequences of the lock-down of society and the university since March 13, 2020 have had influence on which activities that have been possible to stage and carry out as part of the project work. More specifically, this means that activities have been limited to online activities, and that activities such as Lab activities; surveying activities; on-site ethnographic studies and on-site involvement activities have not been possible.
When assessing this project, please bear this in mind.

This master thesis has among others been influenced by COVID19, since the interviews could not be conducted face to face. Only one interview has been made through face to face contact via Skype, whereas the rest has been made over the telephone. Instead, the group would have preferred to make interviews psychically, where body language would have been visibly. Furthermore, the pandemic has influenced that a planned interview with a school leader has been canceled, because the person suddenly had to plan the re-opening of the school. Thus, the children's perspectives have been lacking throughout the analysis of the thesis. The lock-down has also challenged the collaboration and the contact with NT - it would have been difficult to have following meetings.

# Table of content

# Initial interest in the investigation 1

Many rural area in Europe are challenged by population decline, which reduces the areas' demand for public services such as public transport. Through planning, it is possible to make the areas more attractive to settle in for newcomers and ensure adequate services for the current residents (ESPON, 2017). However, in both Sweden and United Kingdom planners have left some of their rural areas without any public transport options (Gray et al., 2006; Berg & Ihlström, 2019).

In Denmark, some parts of the country are better connected by public transport than others - especially rural areas do not have the same cohesion as the urban ones (Lyck, 2014). Rural areas are mainly characterised as sparsely populated areas in the countryside of Denmark. These areas are often linked to the reduction of available services, such as public transport, which are expected to be concentrated in the cities (Svendsen & Tanvig, 2007). Mobility planners seem to prioritise cities over rural areas. Likewise, researchers in the field of planning seem to focus mostly on public transport in cities. This investigation will focus on public transport in the rural areas of Denmark and what influence it has for the residents, because there seems to be a gap in the scientific field.

The accessibility to other areas is important for many residents, who live in these rural areas. It is therefore important to plan public transport for them. (Svendsen & Tanvig, 2007) However, it can be difficult to ensure adequate public transport coverage and high frequency in the rural areas without external funding. The capacity of the vehicles in general is not efficiently used. The service is, thus, not profitable in these areas and it is more a public good rather than a cost-efficient mobility mode.

The transportation authority of North Jutland (NT) is one of the public transportation authorities in Denmark, who focuses on improving the public transport service in these areas. One of NT's recent projects in the rural areas is Mainweb-West, which among others consist of high frequentcy of bus departures and Plustur [1]. In 2017, the project won the international UITP (Union Internationale des Transports Publics) award in Montréal in the category *'Small cities and low-density areas'* (UITP, 2017) from the Global Public Transport Summit. One of the reasons why it won, was because it strengthens the core public transportation network in rural areas with low density and during times where the demand is sporadic. (UITP, 2017)

[1] Plustur is an initiative where one can order a taxi and be picked up at their home address and be transported to the nearest bus or train station and vice versa (NT, 2019c)

The initiative seems to be a success for the rural areas, but how do the residents experience it?

The following chapter will introduce the subject of the master thesis. The rural areas negative tendencies will be presented from the ESPON's (2017) report in combination with the affects mobility and public transport can have for the residents. Inspiration will furthermore be taken from Norman Krumholz (1982) Equity Planning approach and it will be argued how some ideas behind the approach can be used to reduce or break the negative development. NT's new rural project Mainweb-West will be presented and the expectations of it. The public transportation authority has furthermore made a Mobility Index to measure how mobile the inhabitants in the regions experience themselves (NT, 2019a). The results from the measurement can be used to get an overview of where there seems to be a lack of public transport services. In the end, the focus of the study group's investigation will be presented and the research question which will set the structure of the report.

## 1.1 The vicious cycle of rural areas and how it can be broken

All over Europe, the population in rural areas is declining (ESPON, 2017). According to the ESPON's (2017) report *Shrinking rural regions in Europe*, this is a symptom of a vicious cycle that demands comprehensive planning of the rural areas. The vicious cycle is a downward spiral which makes rural areas less and less attractive as the symptoms get worse. The declining population impacts the demand for the services which makes it more difficult to sustain a healthy economy in a rural area. This tendency has further challenges connected to it, such as affecting job opportunities negatively. All symptoms make the area less attractive to settle in and for the younger generation to move back to. This leads to further declining population and worsening of all the other symptoms - hence the vicious cycle. (ESPON, 2017).

According to ESPON (2017), the result of a continuing vicious cycle is: "*Local living conditions and quality of life deteriorate, unemployment rises and skilled labor becomes scarce, causing the emergence of abandonment and obsolescence. This further erodes the attractiveness of a region and the rotation of a downward spiral of demographic decline through falling fertility rates and an enforced aging of the remaining population*" (ESPON, 2017, p. 6). The vicious cycle can be broken through planning by making the area more attractive or plan for a controlled. Planning can also make the area graceful decommission (ESPON, 2017). To counteract a declining population in rural areas, it is important to understand which factors make a place attractive.

Helle Dalsgaard Pedersen and Anette Therkelsen (2017) state in *Handbook on Place,*

*Branding and Marketing* that there are three factors, which make an area attractive: Social factors, cultural factors, and economic factors. The social factors are often driven by family and friends. Most people want to live close to their social relations, because it creates security and comfort knowing that one's social network is close by. The second factor, cultural, revolves around the services an area can provide. When moving out of an urban area into a village or something similar, many begin to miss the services "*(. . . ) whether [they] have been frequent users of these offers or not*" (Pedersen & Therkelsen, 2017, p. 64). The last factor Pedersen and Therkelsen (2017) mention is the economical factor: the job opportunities. The rural areas often lack job opportunities which influence the choice of settlement. However, many Danish citizens are "*(. . . ) [c]ommuting to larger cities for 30-60 minutes to work (. . . )*" (Pedersen & Therkelsen, 2017, p. 63). According to Pedersen and Therkelsen (2017), an attractive area is comprised of three elements: having a family and friends in close range; providing services; and be within commuting range of work opportunities (Pedersen & Therkelsen, 2017). What is similar between all these factors is the need to be mobile. An attractive living place would provide good access to all three factors – it does not have to be next to the resident, but it needs to be in a relatively close range.

### 1.1.1 Public transport for everyone

One planning approach which focuses on adequate mobility for everyone and pays special attention to the needs of the most vulnerable groups is Equity planning. Krumholz (1982) stresses in *A Retrospective View of Equity Planning Cleveland 1969-1979* that planners need to priorities the weakest groups in the society when planning public transport. Great poverty was a big issue back then in the central part of Cleveland and many families were not able to afford a car. Children, people with disabilities, and elders did likewise not have access to private vehicles and were highly dependent on the public transportation system. This system was however insufficient and expensive to use. The equity planner group in the article challenged the politicians' strategy and succeeded to secure lower fees, better route coverage, and high frequency of bus departures for the most transit dependent citizens. (Krumholz, 1982)

Even though, the thoughts of the equity planning approach have been in the planning community for a long time, it is still not a matter of course that there is adequate public transportation opportunities for everyone - especially in a rural area. Jessica Berg and Jonas Ihlström (2019) state in *The Importance of Public Transport for Mobility and Everyday Activities among Rural Residents* that "*(...) public transport services have been closed down due to a lack of use*" (Berg & Ihlström, 2019, p. 9). This has caused limited possibilities

with public transport in rural areas in Sweden. Furthermore, if they want to be able to handle their everyday lifes they have to use the car to reach their errands. "*The car provides a seamlessness that other modes of transport cannot compete with and is thus an important coupling resource*" (Berg & Ihlström, 2019, p. 6). (Berg & Ihlström, 2019) The car is essential for rural areas to secure connectivity if the public transportation options are lacking.

In the study *Community transport, social capital and social exclusion in rural areas* by David Gray, Jon Shaw and John Farrington (2006), they state similar tendencies in the United Kingdom. Public transport is not always available in rural areas and people without a car does therefore often rely on others giving them a lift. Some rural areas can be difficult to reach if the mobilist does not have a car. According to Gray, Shaw and Farrington (2006), mobility is an essential part of creating social networks. "*Social capital has been defined as the connections and relationships among and between individuals*" (Gray et al., 2006, p. 90). The lack of possible connectivity to areas can thereby cause social exclusion. (Gray et al., 2006)

Mobility is an essential part of the daily life and the ability to connect with others. Unfortunately, the possibilities with public transport in rural areas are often limited, thereby creating exclusion for people without access to a car. This has caused that people living in a rural area depend on their car to handle the everyday life and perceive it as the only option. The residents in a rural area without access or the possibility to use a car will often have limited mobility with the consequences of being socially excluded. Because the spatial geography varies a lot between these two countries and Denmark, it is necessary to investigate the mobility behavior in Danish rural areas. If the public transport service is similar to the two other countries, then a Danish mobility planner might take inspiration from the equity planning approach by insuring public transportation options for rural areas and prevent social exclusion.

## 1.2 Mobility planning in Denmark

NT acts proactively to ensure that everyone in their region have the possibility to be mobile no matter who they are, which economic situation they are in, and where they live. (NT, 2017) One of the initiatives they have made to ensure good public transport coverage is the pilot project called Mainweb-West. The Mainweb-West began in august 2019 and is expected to run over the next three years. Its aim is to improve the current mobility opportunities in four rural- and outer-municipalities (in Danish: landkommune og yderkommune) in the western part of the region: Jammerbugt, Thisted, Vesthimmerland and Morsø. These places all have

some similarities and parallel challenges of the vicious cycle. One of their main challenges is the declining population in villages with under 1000 inhabitants. Jammerbugt, Thisted, and Vesthimmerland Municipality have all experienced a 5-10% decrease in the population in smaller villages between 2010-2019, whereas Morsø Municipality has an even larger decrease of 10-16,3%. Furthermore, the average age in the rural districts has in the same period increased with 3,7 years (Danmarks Statistik, 2019). All these factors indicate that the municipalities, taking part in the Mainweb West-project, are caught in a vicious cycle that needs to be broken or slowed down to be gracefully decommissioned.

The Mainweb-West project is a collaboration between NT, The North Denmark Region, and the four municipalities. It consists of three initiatives; Mobility hub markers (knudepunktsmarkører), higher frequency on bus departures and Plustur. The pilot project aims to ensure that everyone has great access to public transport in these municipalities no matter the distance to the nearest bus stop (NT, 2019c). The mobility hub markers will not be a part of the analysis, because they are not a part of the smaller villages' public transport opportunities. NT has besides Plustur and the mobility hub markers made hourly bus departures between the larger cities. NT expects, this initiative in combination with Plustur and the mobility hub markers will create positive synergy and ensure, that everyone in the four municipalities will get access to a high frequency public transport system. The three initiatives together are only implemented in the four municipalities, because they were the most disconnected areas compared to the rest of the region. They were also ready to participate and invest in this project and test if it would be able to improve the daily life for their inhabitants. During the next three years, NT wants to evaluate whether these initiatives have any positive effect on the citizens' daily life. The project is among others expected to support growth opportunities, jobs, educations and attractiveness at the locations along the Mainweb. (NT, 2017) All these benefits can reduce the side effects of the Vicious cycle in small villages. Afterwards, it can be made into a new tool that could provide better mobility in rural areas which can be distributed to other municipalities. However, it depends on whether the new system will make an actual difference in a relatively short period (three years) before the project ends.

A similar initiative to Plustur has earlier been tested in Finland, but in a densely populated area - the Capital Region of Helsinki. Milos N. Mladenovic, Jani-Pekka Jokinen and Teemu Sihvola (2019) present their experience from the finish pilot project in *Policy lessons from the flexible transport service pilot Kutsuplus in the Helsinki Capital Region*. The pilot was called Kutsuplus and ran between 2012 to 2015. The project's similarities with Plustur were that

passengers could order a minibus through an online platform and that it used existing bus stops including additional virtual stops to pick up and drop off passengers. The objective of the project was however different from NT's, because the Finish planner wanted to challenge the car dependency and provide a more sustainable alternative. One of the positive experiences of the pilot was increased use of the mobility mode and positive user satisfaction. However, the project was not extended after its pilot period, because of multiple factors - most notably the unsustainable financial model. (Milos N. Mladenovic, 2019) One lesson that can be drawn from Kutsuplus is that new mobility initiatives like Plustur are linked to different challenges such as the expenses. It is therefore not a certainty that Plustur will be extended after its trial period.

## 1.3 Mobility in the four municipalities

NT has created a Mobility Index (2019a) to measure the inhabitant's experience of mobility and the actual mobility in the North Denmark Region. NT has compared the results between the eleven municipalities in the region and has looked at how the numbers differentiate between urban and rural areas. The results show, that access to a car has a very positive influence on the experience of being mobile (NT, 2019a). Approximately 25% of the families within the four municipalities that is part of the Mainweb West-project does not have a car. (NT, 2019b). The experience of mobility by respondents living in cities is higher than those living in the countryside. Access to train and bus lines is also experienced better by respondents in cities than those in rural areas. This difference confirms the variation in the public transport service level between cities and rural areas. Another challenge in the four municipalities is that the respondents experience worse mobility during their leisure time compared to working hours. (NT, 2019a) This is a general challenge for the whole region, but it is even worse at these four municipalities (NT, 2019b). NT focuses on creating better opportunities for the usage of public transport outside of peak hours to improve the experience of mobility during leisure time.

Respondents from municipalities without mainline coverage have the worst experience of mobility. Three out of the four of the municipalities in the Mainweb West-project: Thisted, Vesthimmerland, and Morsø Municipality have the most insufficient access to the mainline coverage and likewise the worst experience of mobility (NT, 2019a). The investigation in the Mobility Index (2019a) focuses among others on how an area's possible mobility options affect a family's choice of residence. 4 out of 10 found it important to have a bus stop close by - especially younger (under 25 years) and elderly people (over 85 years) find it important. These

two demographic groups are also those with the worst experience of mobility. (NT, 2019a) They are often the ones without access to a car, which can affect their experience of being mobile. It also emphasises the importance of having public transport close by, because it is one of the possibilities they have to be mobile.

Inhabitants living in urban areas value access to public transportation options higher than those living in rural areas (NT, 2019a). This can be a result of multiple aspects. One explanation may be that people preferring public transport might not move to the countryside. Another explanation can be that the lack of public transport options in the rural areas have lead to the acceptance that the car is the main mobility mode. The latter explanation is backed up by another result from the Mobility Index (2019a), which states that the car is the main mobility mode in all four municipalities. Furthermore, the respondents with a car feel more mobile than those without a car. The same tendency is present for the respondents with a driver's license, who feel more mobile than those without. (NT, 2019a)

## 1.4 The Mainweb-West project

The improvements of the project Mainweb-West have been going on for almost a year now, and it has become time to start evaluating the initiatives. NT, the four municipalities and the region must already at the beginning of 2021 decide if they want to continue the initiatives (Skov, 2020). The public transportation authority (2020) presented in a meeting that the stakeholders together have allocated around 16 million DKK to improve the Mainweb during the project period. NT is evaluating the initiatives until the end of 2020. This evaluation will help the politicians decide whether the project should continue or not. NT hopes to find justification for continuing the project by looking into how the project has improved the conditions in the municipalities. The project will be seen as a success if the following two criteria are fulfilled: 50.000-55.000 extra passengers per year and improve the residents' perception of being mobile. The aim of increasing the passenger number with 50.000-55.000 per year is low and will probably be fulfilled. NT measure this aim with a yearly count of passengers during the same week in the fall. During this week NT will receive a sample of the number of passengers on each route. NT can multiply it and estimate how many passengers travel with each route during a year and afterwards compare it to the previous years. The other criteria, which deals with the perception of being mobile, is also a soft criteria of success. It will be examined through NT's yearly questionnaire linked to their Mobility Index. The results in the four municipalities will also be compared with the previous years. (Martens, 2020)

The new mobility structure has not been implemented for a long time which makes it

difficult to see any change connected to the initiatives. NT knows, that the rule of thumb with similar initiatives is that at least two years will pass before it is attached in the inhabitant's mind (Martens, 2020). If the project has to succeed, it is very important that the criteria are possible to achievable, because it strengthens the argumentation for continuing the project. Real changes in the perception of mobility often happen over a longer period than two years (the decision will be made within two years of the project's beginning). NT hopes therefore that the project will be extended after the trial period of three years, so that the improvements can have a larger difference. The quantitative measurements will not necessarily show the full potential of the new initiatives yet. It is not certain that the inhabitants will be aware of the initiatives when the evaluations will be made. The purpose of the evaluation is to test the new 'mobility structure' and learn from it.

NT hopes to improve other parameters in the municipalities such as increasing settlement and growth. Both parameters are vague compared to the two previous and will just be extra benefits from the project. NT desires to get these parameters investigated and has therefore engaged scientific investigators at Aalborg University to make scientific research of the initiatives. (Martens, 2020) According to Niels Agerholm (2020), the evaluation is split into two; a quantitative investigation via a questionnaire with approximately 1200 respondents; and a qualitative investigation with interviews of individual passengers. The questionnaire focuses on how the improved mobility influences the respondents everyday life and their car ownership. Furthermore, they investigate whether people use the services and if it effects the settlement in these areas. The qualitative interviews are focused more on how the users experience Plustur and which challenges it has. (Agerholm, 2020) The challenges with Plustur are among others; the passengers and drivers' ability to locate each other; and that the ride often is shared, thus, creating a detour for the mobilist.

There is no certainty that NT will reach the aims of the project when the evaluation of the Mainweb-West will be made, even though they have made soft criteria for success. Several uncertain factors can influence the results of the measurements. Even if the larger majority of the citizens will be familiar with and satisfied by the initiatives within the evaluation, there is no certainty that NT will reach the aims of the project. Even if they succeed, there is no guarantee that the project will continue, since it is a political decision. By fulfilling the criteria, it creates reason for keeping the project going. The uncertainty is perhaps the explanation why NT has hired scientific researchers to investigate whether the initiatives provide value for the residents or not. Moreover, the scientific research of Plustur will probably give NT valuable information from the users, that they can learn from in order to adjust their solution.

## 1.5 Research question

NT challenges the tendencies of how other European countries plan for public transport in the most sparsely populated areas. Some of these rural areas are left without any mobility options other than the private car. NT has learned via their mobility index, that especially people in three outer-municipalities feel a lack of public transportation options as well. Vesthimmerlands Municipality is the one of these three, which will be focused on in the investigation. NT's project Mainweb-West seems to be an excellent initiative to strengthen the public transport network and ensure a higher frequency even in the most sparsely populated areas. But does public transport make any difference in rural areas dominated by cars? This master thesis will investigate which significance public transport has for rural communities and how it is perceived as an actual mobility choice. It will also pay attention to NT's new initiatives in the Mainweb-West project in order to understand why it was planned and whether it is recognised by the local community. This focus leads the investigation to the following research question:

**What role does public transport have in a rural community in Vesthimmerland Municipality?**

SQ1: How can the choice of mobility mode be understood?

SQ2: Which mobility opportunities does public transport create for a rural community?

SQ3: Which significance does public transport have for a rural community?

### 1.5.1 How the research will be investigated

The first sub-question *'How can the choice of mobility mode be understood?'* will be investigated in chapter 3, where the theoretical thoughts will be presented. They create the foundation behind the interpretation of the empirical data in the rest of the thesis. At the end of the chapter an analytical frame is constructed which is used to structure the analysis.

The second sub-question *'Which mobility opportunities does public transport create for a rural community?'* will be analysed in chapter 4 and chapter 5. In these chapters, NT's initiatives will be evaluated with the influence they have on a rural community. This will be investigated from two perspectives: a traffic planners perception of mobility opportunities for the community and the community's perception of the same.

The last sub-question *'Which significance does public transport have for a rural community?'* will be an investigation of which role public transport has for a rural community. During chapter 6, a discussion will provide an understanding of the significance of public transport and how it helps attract newcomers.

The methods used to answer the research question and to collect the empirical data will be explained in the next chapter with the scientific thoughts behind the investigation.

# Methodology 2

The research question of the thesis arises from an initial meeting with NT, who express interest in an investigation of project Mainweb-West (Martens, 2020). As mentioned earlier, the municipalities involved in the project need to decide the future of the initiatives at the beginning of 2021. A research group from Aalborg University (AAU) is therefore attached to the project to evaluate it. This has started a mutual collaboration between the research group and the study group, where knowledge and experiences are shared.

In order to gain a nuanced understanding of the research field, this master thesis has decided to take a different perspective than the AAU research group. While the AAU research group focuses on the users and individuals, the thesis seeks to illuminate a community's point of view. To understand the perspective of a community it is decided to concentrate on organisations which can represent the community.

It is beyound the scope of this thesis to illuminate all the communities within the four municipalities. One area with a cluster of small villages has therefore been chosen as an example of rural communities. First, it is delimited into one municipality – Vesthimmerland Municipality is chosen in a process of deselection. Morsø Municipality is excluded first as public transport is free in this municipality - this is not a normal practice by the municipalities in Denmark. Free public transport can affect the perception of public transport to a degree which would make it difficult to use the results of the investigation in another municipality. The next municipality which has been deselected is Jammerbugt Municipality, because it is the only one out of the four municipalities which is not a outer-municipality but a rural-municipality (KL, 2014). Jammerbugt Municipality would probably not have the same degree of the vicious cycle's effect as a outer-municipality.

The final deselecting is between Thisted Municipality and Vesthimmerland Municipality. Thisted Municipality is one of the most sparsely populated municipalities in Denmark. Furthermore, the shoreline at Thisted Municipality attracts a lot of tourists which might impact the demand for public transport. Vesthimmerland Municipality is therefore chosen as the municipality for investigation. It is a relatively average rural municipality and provides an insight into the role of public transport which probably will be similar to many other rural areas.

The second part of picking out the specific community to examine is to decide on an area

within Vesthimmerland Municipality. In order to select which areas would be preferable some criteria are determined:

- The size of the villages must not exceed 1000 inhabitant
- The area shall contain a school and a grocery store
- The public transportation opportunities must be improved by the initiatives

Two communities fulfilled the criteria - 1) Hornum and Vester Hornum and 2) Skarp Salling. Hornum and Vester Hornum are located close to each other and are therefore viewed as one community. Each of the villages has a school and they are placed relatively close to the larger city, Aars. It is most likely affecting their mobility, because the distance to their daily errands is assumed to be shorter than the community of Skarp Salling. Thus Skarp Salling is chosen as the community of investigation through a process of deselection.

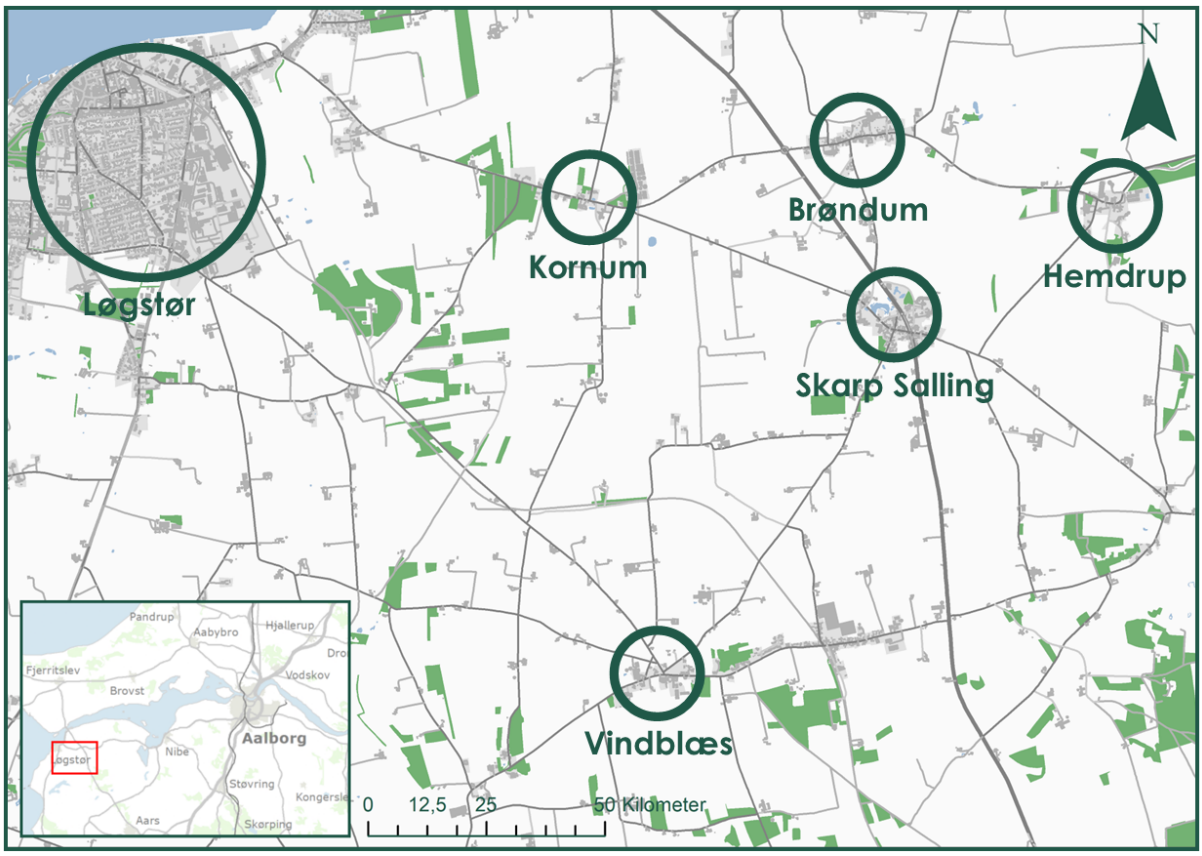


*Figure 2.1: Shows the local area of Skarp Salling and the smaller villages around.*

Skarp Salling and its surroundings consist of small villages with relatively few inhabitants living in each of them. In 2019 only 176 inhabitants were living in Skarp Salling, 58 in Kornum and 30 in Hemdrup (Vesthimmerland Kommune, 2019). Even though Skarp Salling has more inhabitants than the two other villages, does Niels Christian Dalgaard (2020) not perceive it as a village: "*(. . . ) It is not actually a village, but quite a few people are living in the village, but also many in the countryside (...)*". Thus Dalgaard points out that if someone describes

the villages in that area, then it includes not only the houses in the center of the village but also the countryside around. This understanding is similar to the study group's perception of a rural area and the reason behind the choice of investigating a community and not a village.

It will be explained in this chapter how the investigation of the community has been conducted and the reflections and pre-understandings behind. Scientific thoughts of critical realism and social constructivism have influenced how the investigation is conducted. On the basis of these theories of science, as well as a reflexive approach, qualitative interviews has been the primary choice of method to collect data. Before the interviews are conducted, it has been necessary to make a literature review which among others is used to create a theoretical framework. It additionally provides the framework for the interviews which is the basis of understanding the perception of the community. The perception of a traffic planner is composed of a document analysis of NT's initiatives supplemented with a literature review of scientific thoughts of challenges and solution of public transport.

## 2.1 The scientific theoretical approach of the investigation

According to Mats Alvesson and Kaj Sköldberg (2009) in *Reflexive Methodology*: "*(. . . ) knowledge cannot be separated from the knower (. . . )*" (Alvesson & Sköldberg, 2009, p. 1). In the end the analysed empirical data is an interpretation made by the researcher (Alvesson & Sköldberg, 2009). Thus is valuable for the reader to understand the scientific theoretical approaches which create the basis for the investigation and interpretation. In order to provide the reader with the transparency necessary to reflect on the results, this section will account for the scientific approaches behind the investigation.

This investigation is conducted on the basis of the two scientific theoretical approaches:critical realism and social constructivism. According to Kirsten Bransholm Pedersen (2012), these two scientific theoretical approaches do both have similarities and differences. They are both opponents of the positivistic approach and states, on an epidemiological level, that there are more than one *truth* (Pedersen, 2012; Buch-Hansen & Nielsen, 2012). According to social constructivism the *truth* depends on the perspective, which will be elaborated later (Pedersen, 2012). However, they have disagreements on whether or not "*[t]here exists a reality independent of our conceptions of it (. . . )*" (Buch-Hansen & Nielsen, 2012, p. 280 Authors translation). Critical realism states that there are a two dimensions: 1) the intransitive, where the reality exists independent of our comprehension of it, and 2) the transitive, which consists of the empirical knowledge of the reality (Buch-Hansen & Nielsen, 2012). In contrast, social constructivism apprehends reality as something which is socially constructed (Pedersen, 2012). The objects

of reality does exists in social constructivism, but how it is comprehended depends on the social construction. How the world is perceived is the determinant factor of what reality is.

The ontological approach in this thesis is inspired by critical realism, and the idea of the reality existing independently from the comprehension of it. Following the approach from critical realism, the surroundings of the community can thus be perceived to exist. The structure of the villages and the placement of the bus stops in combination with similar elements form the research, because they are the precondition of the investigation. Furthermore, it is important to remember that the investigation takes place in a rural area where the surroundings differ from an urban area. The villages consist of small gatherings of houses, which by the society is being acknowledged as a unit. The residents of a village do, however, not limit themselves to the administrative limits made by society, but are connected to other residents in the surrounding area. This is also mirrored in Dalgaard's (2020) statement in the introduction of this chapter. He states that the village does not only contains the resident within the village-limits, but also the residents around the village.

The limits of the local society in the villages and between them is fluent. It would be difficult to outline the community's boundaries as it like an organic form continuously changes and develops. No matter the social construction of the community it is still present at reality, but the apprehension of it depends on the perspective.

As mentioned earlier above, critical realism and social constructivism argue that there are more than one *truth*. The epistemological thoughts behind this investigation acknowledge that *"[t]he knowledge we have of the reality, and which we comprehend as truth and objective, becomes in a constructivist frame of understanding a reality-*apprehension *we have constructed through interactions with other"* (Pedersen, 2012, p. 188 Authors translation). The role of public transport can thus be understood as a perception created through interaction and therefore depends on the perspective. There cannot be one truth, because there are multiple perceptions which all are equally valid. (Pedersen, 2012) This thesis will illuminate the perceptions of both a traffic planner and the community. These two are chosen, as they probably are the two most important to take into accont when planning for public transport.

It is especially interesting to understand the perception of the community, because if multiple individuals agree on a constructed truth, it can become the leading discourse. Pedersen (2012) states that the constructed reality gets reproduced by people "*acting on the basis of their interpretation of "reality"*" (Pedersen, 2012, p. 190 Authors translation). The community's perception of public transport affects their mobility behavior and thereby reveals the role public transport has in a community. However, it is important to note that

the perception is not static and differs – it all depends on the interpretation of the reality (Pedersen, 2012).

The investigation is conducted based on the understanding that there is a reality which exists independently from the knowledge of it. A community and the physical structures in and around it is acknowledged as part of the reality which is difficult to fully comprehend, because it depends on the connections between the residents. The role of public transport in the community depends on the interpretation of it. By gaining insight into NT's interpretation of public transport and afterward the community's interpretation, it becomes possible to understand its role, which provides the necessary knowledge to improve the planning of public transport.

## 2.2 Reflexive methodology

Alvesson and Sköldberg (2009) state that everything is an interpretation. This statement is in line with to the thoughts behind social constructivism, which believe that reality only can be understood through interpretations. No matter the type of empirical data, someone has decided to bring something forward and let other things either stand silently or not be included at all (Alvesson & Sköldberg, 2009). This entails a reflexiveness from the researcher whom "*(. . . ) must proceed with care and reflection, pondering a good deal more upon what the empirical material means, and why we make just these particular interpretations, before forming any opinions of 'reality' as such*" (Alvesson & Sköldberg, 2009, p. 10). This Thesis attempts to be reflexive about the investigation and the interpretations made by the researchers. When encountering something which could have multiple interpretations, it is strived to bring the considerations forward, so the readers can make their own judgement.

According to Alvesson and Sköldberg (2009), a reflexive investigation has multiple levels of interpretations which all demand reflection on how they are constructed and understood. These levels consist of; the creation of empirical data; the initial interpretation of it; a critical interpretation considering a theoretical understanding; and reflections of the investigation's outcome. "*Reflexivity arises when the different elements or levels are played off against each other*" (Alvesson & Sköldberg, 2009, p. 272). The interpretations start even before the data collecting, where the researcher interprets who would be interesting to talk to and which questions should be asked (Alvesson & Sköldberg, 2009). The rest of this chapter will seek to inform the reader of the thoughts and interpretations behind the methods used and how additional reflections have affected the investigation.

## 2.3 Written texts used for the investigation

Several written texts have been used to provide insight into different aspects of the investigation. A literature review has provided: 1) an understanding of the problem, 2) a theoretical frame for the interpretations, and 3) given insight into a traffic planner's perception of how to plan public transport. As mentioned earlier, all texts are interpretations and do "*(. . . ) calls for the utmost awareness of the theoretical assumptions, the importance of language and pre-understandings, all of which constitute major determinants of the interpretation*" (Alvesson & Sköldberg, 2009, p. 9). When using a written source in this investigation, it has been attempted to be critical and reflexive. By doing so the information used in this thesis is assessed to be valid and reliable for this investigation.

The analysis of the thesis has partially been based on a document analysis of different documents and information-pages from NT and on a school-road analysis of the community's mobility behavior to and from the local school. Pedersen (2012) states that documents should be understood in the light of the social constructions they are part of. The texts in this thesis are used to gain insight into the traffic planner's perception and the school children's behavior in the community.

### 2.3.1 The conduction of the literature review

A literature review can be used to locate relevant information which can be useful for an investigation (Farthing, 2016). Two main techniques have been used in order to find relevant literature: location by keywords and the snow-ball method. Location by keywords is about finding the keywords which describe the topics under investigation and use them in the search for relevant literature. With the snowball method, the bibliography in a keyword document is used to locate other relevant literature. Both methods have been used to investigate and gather information about the topics of the research.

The original interest behind the investigation has been to limit the reduction of the population in rural villages by improving mobility services to everyday life errands. By making the area more attractive for settlement the vicious cycle can be challenged. This leads to keywords such as 'rural area' and 'shrinkage' which helps provide an understanding of the problems in a rural area. The outcome of the keyword search and snowball method has been various articles revolving the different problems in a rural area as well as what makes an area attractive to people. Furthermore, a policy brief from ESPON (2017) states the need for strategic planning in rural areas in order to handle the issues with shrinkage. The problems with the vicious cycle and the unattractiveness of the rural area have insigated a speculation

of how public transport can be used as a tool to improve the areas.

Another keyword search proposed two studies of public transport in rural areas in Europe. One of the studies takes place in Sweden whereas the other takes place in the United Kingdom. They both point out that the main mode of transportation in the rural areas is the car and that lacking public transport possibly causes social exclusion (Berg & Ihlström, 2019; Gray et al., 2006). To understand the similarities with Denmark an investigation of the mobility behavior in Danish rural areas has been made. NT (2018) has created a Mobility Index which states that the car is also the main mobility mode in all four municipalities that the project is implemented in. This has been a cause for wonder in the research: If everyone uses the car, what role does public transport have?

To gain an understanding of the significance of public transport in a rural community in Denmark, it was necessary to get an understanding of what affects the choice of mobility mode. Malene Freudendal-Pedersen (2007) ivestigated in *Mellem frihed og ufrihed* (the English edited version is called *Mobility in daily life* (2009)) the argumentations behind the choice of mobility mode (called structural stories) in order to understand how they get created. Freudendal-Pedersen's (2007) has been used to form the theoretical framework in this investigation. Freudendal-Pedersen is a professor at the Institute for Urban Planning at Aalborg University (AAU) and has on multiple occasions worked on research dealing with mobility (Aalborg Universitet, No date).

Vincent Kaufmann's (2002) book *Re-Thinking Mobility* is used to gain another perspective on the thoughts behind the choice of mobility mode. He is a professor *of urban sociology and mobility at Ecole Polytechnique Fédérale de Lausanne (EPFL)* (EPFL, No date) where he among other conducts research within the field of mobility. In his book Kaufmann (2002) bases his research on mobility behavior in European cities. The results of his investigation is based on mobility in cities while this investigation is based on a rural area. This difference is important to be aware of, because the possibilities with public transport are often better in cities than rural areas. However, the mentality and the process of deciding which mode to use are assumed to be similar. Therefore Kaufmann's (2002) has been assessed to be useful in this investigation of a rural area.

Several articles, Kaufmann (2002) and Freudendal-Pedersen (2007) have all taken some degree of inspiration from the sociologist John Urry. This, and the wondering of how one can understand the perception of the car and the importance of being connected, leads to the last source of inspiration for the analytical framework in this thesis: Urry's (2007) *Mobilities*. Urry has been one of the most influential thinkers in social science (Adey & Bissell, 2010). He

has illustrated that the social science and mobility are closely connected - the global society functions through mobilities, for example, ideas, goods, friendship, economics and so on (Adey & Bissell, 2010).

The three above mentioned perspectives are in this thesis used to create the theoretical framework in order to understand the choice of mobility mode and the significance of public transport in a rural area. By using all three perspectives for the interpretation of the empirical data it widens the range of explanations which makes the research more reliable (Alvesson & Sköldberg, 2009).

During the investigation occurred a new speculation: what are the intentions behind NT's initiatives and what does the scientific community suggests as solutions to improve public transport? To gain the perspective of a traffic planner, an additional literature review is conducted by using similar methods. This provides a scientific understanding of the intentions behind NT's initiatives and the issues to be solve when planning for public transport. The perspective of a traffic planner is thus investigated by combining the perception from the scientific community with documents from NT.

### 2.3.2 Document analysis

The document analysis has been made to provide an insight into a traffic planner's perception and the children's and young people's mobility behavior. According to social constructivism the documents need to be understood in connection to the context they have been made in (Pedersen, 2012). Thus it is possible to illuminate the perception and intentions of the traffic planners through the documents. When looking into the documents from NT describing the initiatives it is important to remember that they are created to inform the citizens of how to use the initiatives and to promote them. They can thereby be understood as a description of the mobility possibilities from a traffic planner's perspective.

The other document used in this investigation is a school-road analysis made by Vesthimmerland Municipality (2019) which illuminates the choice of mobility mode to and from school. It is made in the spring of 2019 in order to adjust areas where people feel insecure cummuting to and from school (Vesthimmerlands Kommune, 2019). In combination with statements from the interviews, the information from the school-road analysis are used to gain insight into the children's and young people's behavior. Even though most of the content of the report is charts they are still a result of interpretation. Based on the school children's answers, the municipality has decided what to bring forward for analysis and what to leave out. The school-road analysis can therefore not be seen as the children's statements, but as

an interpretation of them. By combining them with the statements from the community, it is possible to gain a more profound understanding of the reasons behind their mobility behavior.

## 2.4 Interview

Qualitative interviews are the main empirical data collection in this investigation. The purpose of the interviews is to conduct qualitative descriptions about the community from the interviewees, which is interpreted and used to answer the second and third sub-questions. One of the topics that is investigated through the interviews is related to the second sub-question and revolves around the mobility opportunities NT's initiatives provide. The other topic is related to the third sub-question and deals with the significance public transport has for a rural community. The form of the interviews is inspiration by Steinar Kvale's (2011) interview guidelines from his book *Doing Interviews*.

When using interviews as a method to gather information it is important to be aware that the statements are a result of the interviewees' interpretation (Alvesson & Sköldberg, 2009). The statements are furthermore a result of their understanding of the reality (Pedersen, 2012). By combining the statements from the representatives of the community, it becomes possible to gain insight into the community's perception of public transport.

### 2.4.1 Interview guides and structure

According to Kvale (2011), the respondents will like to know a bit about the interrogator in the beginning of the interview, before they explain their experiences and meanings to someone they do not know. It is important to brief the interviewees about the topic of investigation, the purpose of the interview, and how long time it is expected to take. It is important to establish a good relationship with the interviewee, to gain their trust and interest and make the interview a safe enviroment where they feel free to share their true thoughts. This can be done by showing them sincere interst and being clear about what exact information is desired. By doing so any misunderstandings will be limited to a minimum. (Kvale, 2011) The briefing with a presentation of the study group is made at the beginning of every interview to create a relationship with the interviewee. It is furthermore explained that their answers should be based on the time before the COVID-19 crises, because the pandemic has affected the use of public transport. The introduction is followed by questions related to their role in the community and other similar questions, which is easy for the interviewee to answer. In combination, the questions and the presentation make the interviewees more comfortable with the conversation and get them to open up.

The interviews are semi-structured, which Kvale (2011) explains as "*(. . . ) – it is neither an open everyday conversation nor a closed questionnaire*" (Kvale, 2011, p. 11). By having open questions, it is up to the interviewees to present the knowledge they find important and it allows the interviewees to elaborate on the topics from their perspectives. (Kvale, 2011) Some of these perspectives are not necessarily planned in the interview guides. It is important that the interviewer is open and asks elaborating questions about these new unexpected perspectives if it benefits the qualitative descriptions. By doing so the interviewer shows interest in the explanations and encourages the interviewee to elaborate. This will help further strengthen the relationship and thereby the quality of the interview.

The structure of the interviews that are conducted were very similar. They are divided into topics that make it possible to compare the perspectives afterward. Some questions are adapted to each interviewee to bring their expert knowledge forward which provides different outcomes from each interview. As explained, the interviews begin with easy questions that will provide an understanding of the community and their position in the small organisations. The questions afterward are structured according to the mobility topics of access, skills, appropriation - all in relation to public transport (the three categories are further elaborated in chapter 3). This is followed by questions about their knowledge of; NT's initiatives; how set they are in their perception of public transport; and how well they know the community they represent. These questions ensure that the answers from the respondents later can be compared in the analysis and that the interpretation can be made with reflections on the statements.

The study group has presumptions when planning the interview guides and thereby an idea of what influence public transport has on the rural community. The findings in the literature review reveals that public transport is not used much in rural areas and that the car is more dominant compared to the cities (NT, 2018). The study group sought to be reflective about their presumptions by formulating hypotheses to each question in the interview guides. These presumptions are either confirmed or declined through the interviews. Alvesson and Sköldberg (2009) states that "*[w]hen we reflect, we try to ponder upon the premises for our thoughts, our observations and our use of language*" (Alvesson & Sköldberg, 2009, p. 269). The study group's presumptions are used as a tool to secure that the interpretations of the empirical data are not made based on the study group's pre-understandings, but on the statements from the interviewees. An example of the interview guides including the topics, the hypotheses and questions can be seen in figure 2.2.

| Topics | The hypotheses | Questions |
|---|---|---|
| The interviewee | The interviewee has been living a long time in the village – perhaps the larger part of his/her life | Can you describe the purpose of the association and your role in it?<br><br>Why have you chosen to live here?<br>- How long have you lived in the village? |
| The local area and its residents | The interviewee is very familiar with the other residents<br><br>There are many elderly people I the village<br>.<br>.<br>. | How familiar are you with the other residents?<br>- Which type of people live in the village?<br><br>How would you asses the village's demographic?<br>.<br>.<br>. |
| Everyday mobility – the citizens behavior | They have a car which they use to and from work in the larger cities<br>.<br>.<br>. | Where do most people work?<br>.<br>.<br>. |
| Access | ... | ... |
| Skill | ... | ... |
| Appropriation | ... | ... |
| NT's initiatives | ... | ... |
| The future with public transport | ... | ... |
| The representatives and their preferences | ... | ... |

*Figure 2.2: Shows an example of the interview guides including topics, the hypotheses and the questions.*

### 2.4.2 The interviewees

The aim of interviews is normally to understand themes from the subject's lifeworld and perspective (Kvale, 2011). In this investigation, the individual perspective is not interesting, because the focus is on the community. The aim of the interviews are to gain insight into the community's lifeworld. This is attempted by interviewing representatives from the community rather than individual residents. The five representatives are all, except the real estate agent, chairperson in a local organisation. Table 2.3 shows each of the representatives' name and date of interview and which local organisation they are chairpersons at. All three of the villages - Skarp Salling, Kornum and Hemdrup - have a civic association, which are interviewed to gain knowledge of the community's perception of public transport opportunities. Skarp Salling and the surroundings has also a senior association, where the chairperson in the investigation is used to gain the elder's perception. All four chairpersons are elected democratically by the community to represent it, and it is therefore assumed that they are able to speak on behalf of the community. Additionally, it is also preferable to understand the perspective of the future residents of the community. This is a difficult group to investigate, because it is not possible to know who they are. It was therefore chosen to interview a local real estate agent who is probably the one talking to most newcomers and learning their perception of public transport.

**The interviewees**

| Name | Role in the community | Representing | Date | Appendix |
|---|---|---|---|---|
| Kaj Bräuner Sørensen | Chairperson of the civic association | Hemdrup | 7/4 - 2020 | A |
| Tina Jul | Chairperson of the civic association | Kornum | 8/4 - 2020 | B |
| Flemming Aldolfson | Chairperson of the civic association | Skarp Salling | 3/4 - 2020 | C |
| Lars Erik Bengtsson | Real estate agent at EDC | The newcomers | 20/4 - 2020 | D |
| Niels Christian Dalgaard | Chairperson of Skarp Salling senior association | Seniors | 3/4 - 2020 | E |

*Figure 2.3: Shows an overview of the representatives, their role in the community and who they represent.*

Once again, it is important to remember that reality is socially constructed. The statements from the interviewee have been affected by values, habits, social and cultural context (Pedersen, 2012). This is visible during the interviews where the interviewees brought examples forward of both their own experience and others in their village. The interpretations made by the representative are probably made based on their own experience which has been affected by other residents in the community. Some questions are asked last in the interview to make it possible to discern to what degree the representatives are expressing their own opinion and not the community's. The questions are related to their mobility habits and how well they know the community's mobility habits. This shows that they have a profound knowledge of the community's mobility behavior and that it is similar to their own. The information they provide is therefore considered as valid for understanding the community's perception. The passages where the interpretation of the empirical data can be affected by the representative's own perception, is brought forward in the analysis to make it possible for the reader to make their own assessment of the interpretations.

### 2.4.3 Data processing and coding

Before explaining how the interviews have been data processed, it is important to know that almost all the interviews are conducted via the telephone. Only one interview is made via skype which makes face-to-face contact possible over distances (Hammond & Wellington, 2013). The face-to-face contact has probably benefited the relation to the interviewee, which has made the interview easier. The telephone interviews have had some limitations, because it has not been possible to read their body language. The uncertainty by talking to a stranger

would probably affect the trust between the interviewer and the interviewee, and it is therefore possible that the interviewees have been more cautious with their statements. The initial questions have helped to create the needed trust.

According to Kvale (2011), the interviewer needs at the beginning of the interviews to ask for permission to store the record (Kvale, 2011). This has been done during all the interviews due to ethical considerations and to store the qualitative descriptions, so it can be listened to afterward. The interviewees are asked at the beginning of the interview for permission to record the conversation. Most importantly, the records are used for the transcriptions which later can be further interpreted. This has secured that the interpretations are made based on the words of the representatives and not on notes (initial interpretations).

One way to process data from the transcriptions is by coding. Kvale (2011) explain coding as when the interviewer read carefully through all the transcribed interviews and attaches keywords to a text segment. During the coding it is possible to reflect theoretically and write down interpretation. The meanings go beyond the obvious descriptions from the interviewees and is therefore an interpretation on a deeper level. (Kvale, 2011) The coded text can afterward be ordered into categories, which the researcher construct by themselves (Alvesson & Sköldberg, 2009). These categories are in this investigation linked to the main parts of the analytical frame in chapter 3: access, skills and appropriation with associated constructed subcategories. The text is thereby coded into categories based on the researcher's theoretical understanding of mobility. The coding is primarily used to get an overview of the empirical data and be able to relate different statements to each other. The data processing has made it easier to interpret the reasoning behind the community's choice of mobility mode.

All the interviews are made in Danish, because it is the study group's and interviewees' native language. The conversations are thereby smooth and possible misunderstandings in the language are likewise avoided. The interviewees' citations in the report are all translated into English by the study group.

## 2.5 Reflection of the investigation

Throughout the investigation, there has been made reflections on how the empirical data can be interpreted. According to Alvesson and Sköldberg (2009), the last level of reflexivity revolves around the result of the investigation and the languages used. In this thesis, it has been attempted to show the reader the interpretations and the basis of them. This is done to provide the reader with the opportunity to reflect on the result and understand the interpretations of the empirical data.

# The choice of mobility mode 3

Mobility is not a simple concept - it covers a large range of movements and communication systems (Kaufmann, 2002). This thesis focuses on mobility in the everyday life in rural areas or more precisely, the *motility* of the everyday life. The focus of this research is not the movement from A to B, but to understand the mindset of the community and the meaning of the mobility options. The theory of mobility, motility and the reasoning and argumentation behind the choice of mobility mode will be explained in this chapter. It will in the end provide an analytical framework which will be used to understand and investigate motility of the everyday life in rural areas.

## 3.1 What is everyday mobility?

Mobility is an important part of the everyday life. Urry (2007) explains that "*families depend upon patterns of regular visiting, schools are chosen in terms of catchment areas, [and] work patterns depends on the way congestion structures commuting flows (. . . )*" (Urry, 2007, p. 19). This creates the movement structures in the society. According to Urry (2007), this is one of the aspects of mobility which often has been neglected in social science. The common family is depending on certain patterns of movement to make their everyday work. Often the family's choice of settlement is even highly affected by the options of mobility that they have. They are for an instance dependent on bringing their kids to school and afterward getting to work. These everyday structures are not unique from one family to another, but are very similar because they are created by society. Everyone is moving around at the same time, creating congestion and affecting the journey. These journeys are a large part of the everyday life mobility and are also something to consider when choosing a place to live. (Urry, 2007)

It is not just schools, shopping opportunities and workplaces which create daily journeys, but also the relations between people and places. Urry (2007) states that people want to create connections with each other, which is visible today in the form of the system of roads. He further explains that these permanent paths create connections between areas and disconnection to others. They are the result of countless journeys in the everyday life made over time, which today have been made into solid structures. He also states that "*[t]he network of paths shows the sedimented activity of a community stretching over generations (. . . )*" (Urry, 2007, p. 32). It can be difficult to change the structure of paths, because each path represents something meaningful to the citizens using it. A path is not just asphalt, but

it is also a relation between people. (Urry, 2007)

According to Kaufmann (2002), the choice of mobility depends on the mobilist's previous choices, culture, and social status. There is freedom connected to the choice of mobility - "*(. . . ) mobility, or a lack of it, is the result of a choice made among alternative options*" (Kaufmann, 2002, p. 43). The previous choice might affect the mindset, but each person still has the freedom to make the choice they want. (Kaufmann, 2002)

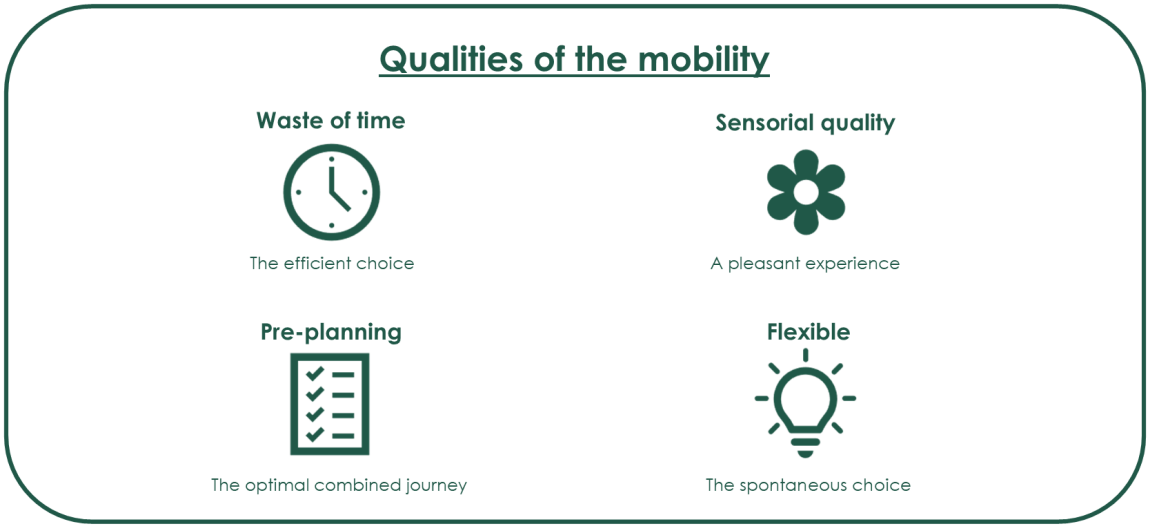


*Figure 3.1: Illustrate Kaufmann's (2002) four qualities that affect the choice of mobility mode.*

The mobility in the daily life can be planned in different ways by emphasising different elements. Kaufmann (2002) states that four qualities affect the choice of mobility mode. The choice of mobility is based on which qualities each mobilist prefers. The first quality revolves around efficiency - the journey is viewed as a *waste of time*. Everything should be optimized as much as possible to minimize the travel time and the need for further mobility. The second quality is called *sensorial quality* and, as the name says,"*(. . . ) the primary goal is seeking pleasant experiences*" (Kaufmann, 2002, p. 51). The mobility is seen as a space of time to relax – it is more an activity than transportation. A common example of this is when someone chooses to walk or bike to their destination, not because it is the most efficient way, but because they can get fresh air. The third quality is the *pre-planning* where the mobility is combined with an activity such as working. It is when the travel time is used optimal according to the day of each person. The choice of mobility mode serves the purpose of being able to carry out activities. Especially public transport will be chosen by pre-planners, because they provide the opportunity to use the time for other activities. The last one is the *flexible* quality which often is a combination of different mobility modes. The journey can variate each day

according to the daily appointments, and it can even be changed along the journey. It is a spontaneous way of being mobile where all mobility modes, and the activities on the way are planned to get the most out of the journey. These four types can be helpful to understand the preference behind the choice of mobility mode. (Kaufmann, 2002)

## 3.2 Why is the car the dominant mobility mode?

This thesis focuses primarily on public transport, but it would be a mistake to neglect the large impact that cars have on today's mobility. Urry (2007) states that the car is getting more and more popular for each generation and that it is the predominant mobility mode today. He further describes the cars impasse in society as "*[t]he car's unrelenting expansion of, and domination over, other mobility system came to be viewed as natural and inevitable (. . . )*" (Urry, 2007, p. 114). It is usually not questioned whether it is important to own a car or not, because it is a natural part of today's society.

The car is more than just a mobility mode: it is freedom and a lifestyle. According to Urry (2007), the car provide a sign-value, depending on who you are and what car you own – something you would like to tell the world such as sexual-success, family, safety and so on. There are of course also negative aspects connected to having a car such as pollution, resources spent on it and that it is responsible for countless deaths all over the world. These negative aspects are however often forgotten and normalised as part of what it entails to own a car. (Urry, 2007)

According to Freudendal-Pedersen (2007) the car is a very important part of many people's life and it is almost impossible for them to imagine a life without a car. This idea of the car does not originate from one person, but has been produced and reproduced by so many people to the extent that it has become the universal truth. She states that "*[u]sing these structural stories about how we transport ourselves feeds into a process of maintaining definite types of mobility as indisputable 'objective truths', and as such block behavioural change relating to mobility habits*" (Freudendal-Pedersen, 2009, p. 34). She further describes that structural story provides an understanding of the reasoning behind the decision of mobility mode. When the choice of mobility mode needs to be decided, the structural stories play a large role. The three most common structural stories are "*1. 'When one has children, one needs a car'; 2. 'The train is always late'; 3. 'The car offers some possibilities that no other transport mode can give'*" (Freudendal-Pedersen, 2009, p. 43). Generally, the car is mostly perceived positively and with unlimited possibilities for journeys, whereas public transport is often viewed negatively. The structural stories might be understood as 'objective truths', but they are still debatable,

and not everyone has the same perception as the others. By each time the structural story gets produced and reproduced, it strengthens the story. The use of the car will therefore not change until the structural stories change. (Freudendal-Pedersen, 2007)

Kaufmann (2002) has in "Re-Thinking Mobility" investigated "*(. . . ) the social perceptions of the car (. . . )*" (Kaufmann, 2002, p. 67). The outcome is that "*[t]he car is linked to terms such as 'practical', 'fast', 'comfortable' and 'allows independence', while public transport, although qualified as practical, is also associated with such description as 'slow', 'restrictive' and 'overcrowded'*" (Kaufmann, 2002,p. 67). These terms could be characterised as structural stories, because they express an perception that most people would agree with and not think twice about. These social perceptions are fundamental for the choice of mobility mode. Even though the perception might not be corresponding with reality, it is still seen as truth and used as an argument for choosing one mode over the others. (Kaufmann, 2002)

Both Kaufmann (2002) and Freudendal-Pedersen (2009) states that the car is a symbol of freedom even though it locks the choice of mobility mode to almost always be the car. This symbolic value and the idea that a car is a part of creating the good life is one of the main structural stories (Freudendal-Pedersen, 2009). Opposite to this structural story is the 'universal truth' of public transport – it is unfree and often a waste of time. This positive view on cars and the negative view on public transport is creating the habits of mobility today where the car is the dominant form of transportation. (Freudendal-Pedersen, 2007)

## 3.3 Motility and its three aspects

"*The structural story forms the starting point for understanding considerations and dilemmas behind everyday life choices and priorities*" (Freudendal-Pedersen, 2009, p. 8). In order to understand the choice it is necessary to know which mobility modes are viewed as an option. Kaufmann (2002) has created the concept of *motility* to be able to understand this. He defines it "*(. . . ) as the capacity of a person to be mobile (. . . )*" (Kaufmann, 2002, p. 37). Even though there is a large range of mobility modes (a high degree of motility) it is not tantamount that people will use them. Motility is not the journey, but the potential for being mobile. (Kaufmann, 2002)

Motility depends on three aspects according to Kaufmann (2002): Access, skills and appropriation. Access is both the options and conditions. The available options comprise of all means combined, such as the various mobility modes and communication systems, which is possible to use. Only the ones that fit with the price range and schedule will be viewed as access-possibilities. A taxi ride might be possible to use timewise, but if the mobilist

cannot afford it, then it will not even be taken into consideration. In general, cities with a high population will probably be able to provide a larger range of access-possibilities, because more services are available. (Kaufmann, 2002)

The second aspect of motility is called skill. It consists of three components: the physical, the acquisition and the organisational. The physical revolves around the mobilist's physical possibilities and limits (Kaufmann, 2002). Kaufmann (2002) brings forward the example of the ability to walk – if the mobilist has a broken leg, it will not be possible to walk to the destination. The second component is the acquisition, which consists of the knowledge and documents needed to use the mobility mode. This could for example be a driving license, a bus pass or the language. The mobilist needs to have a driver's license if the car should be seen as an option for mobility. The last component is the organisational that refers to the ability to plan the trip. This could among others involve research and spontaneity which especially is needed when traveling to a not yet visited destination or by a new form of mode. The skills of motility depend on each mobilist. Age and life course often play a role in the set of skills that the mobilist have. (Kaufmann, 2002)

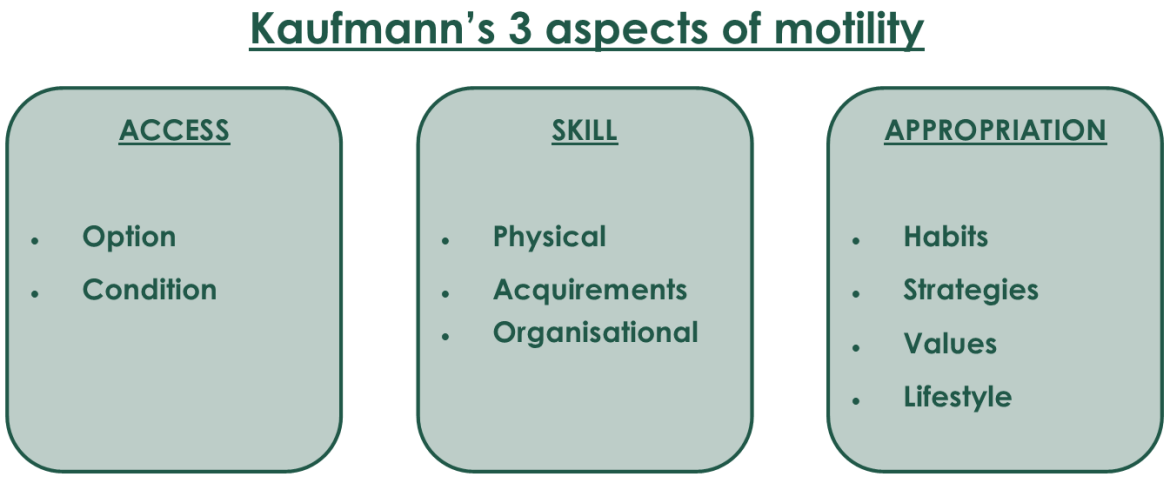


*Figure 3.2: Illustrate Kaufmann's (2002) three aspects of motility with their components.*

Access and skills are the two components that determine which mobility possibility there are available for each mobilist. Everyone has their own perception of what the mobility modes symbolise and how they work. Not every possibility will be perceived as a potential for the individual mobilist. The last aspect of motility, appropriation, "*(. . . ) is how people interpret access and skill*" (Kaufmann, 2002, p. 39). What each individual perceives as possibility "*(. . . ) is shaped by the aspirations and plans of individuals and thus stems from their strategies, values, perceptions, and habits.*" (Kaufmann, 2002, p. 39). Each mobility possibility is judged and considered by the individual mobilist to determine, whether the mode is suitable to use

or not. The skills is also evaluated during this consideration: is the skills needed to use the mobility mode already acquired or does the skills need to be acquired? The appropriation is the arguments behind the preference of mobility modes and depends on gender, age, and life course. (Kaufmann, 2002)

It is important to understand that motility is formed by each mobilist's "*(. . . ) financial, social and cultural capital (. . . )*" (Kaufmann, 2002, p. 40). When investigating motility, it is important to focus on the context of the mobilist and what forms the perception of the three motility aspects. The tendency will often be that what fits with the lifestyles will be prioritized over the other possibilities. Kaufmann (2002) states that there are two reasons why one is not satisfied with their motility: The motility is either limited or the motility and the mobility do not match (the mobilist's desires are not met). (Kaufmann, 2002)

Mobility is the journey itself, whereas motility is the many considerations made before. Motility focuses on the reasonings behind the choice and which modes are an actual possibility to be used. As previously mentioned, the reasoning could be determined by what is the fastest, the highest quality of the journey and the knowledge needed to optimize the journey. (Kaufmann, 2002)

### 3.3.1 The argumentation behind the choice

Kaufmann (2002) states that looking into motility surpasses the investigation of spatial mobility. The focus is not on the travel itself, but on the reasons and argumentation behind the choice of mobility. In *Re-Thinking Mobility*, Kaufmann (2002) finds four combinations of rationals behind the choice of mobility mode. They are made based on three overall rationals for the choice of mobility mode: the travel time, the preference of the car and that it is a part of their lifestyle. "*(...) [T]hey do not affect all the respondents in the same way*" (Kaufmann, 2002, p. 69) and also depends on the context they are in. (Kaufmann, 2002)

The first type of mobilist is called the *exclusive motorist*. As the name says, this is a group of mobilists that exclusively uses the car to be mobile. They would often not even perceive public transport as a possibility. Their destinations would be limited to places that are accessible by car. How the accessibility is would have a large impact on their perception of the motility to the specific place. (Kaufmann, 2002)

Opposite the first type, the second type puts great value on respecting the environment. The *civic ecologist* goes against the societal norm and prefers public transport over the car when it is possible. Whereas the first type primarily consists of men with a good job, this group mainly comprise of young people and women. The *civic ecologist* is often more ideological

and lives in city centers with good access to public transport. (Kaufmann, 2002)

The third type is very similar to the *exclusive motorist* but it is not unlikely that they use public transport. This type is called the *motorists compelled to use public transport*. These mobilists follow the main societal tendencies of preferring the car. If the destination is not accessible by car or if other elements make the car a minor choice then they would use public transport. Kaufmann (2002) puts it as: "*(. . . ) these people have a clear tendency to modify their modal practice rather than their destinations*" (Kaufmann, 2002, p. 70). (Kaufmann, 2002)

Lastly is the group which is *sensitive to time* and other elements that comprise the journey. This could be cost-, time- and ease-factors that are considered when choosing mobility. The group is not affected by the tendencies in society – they want to be as efficient as possible with everything taken into consideration. All of the other types have part of this type as a part of their considerations, and it is therefore not unlikely to find aspects of it in the other types. (Kaufmann, 2002)

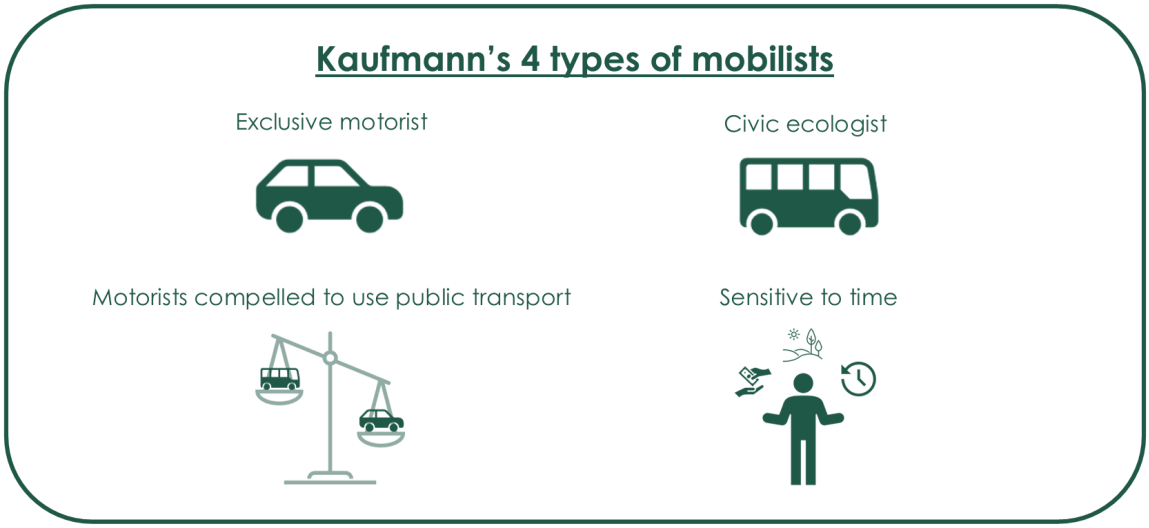


*Figure 3.3: Shows kaufmann's (2002) four types of mobilists.*

Each of these types uses different argumentation for their choice of mobility mode. Even though the mobilist's ideas of the motility options might be wrong or less correct, they are still viewed as valid arguments that end up having a large impact on their choice of mobility mode. The structural stories function similarly, they "*(...) appear and function as a sort of rationality we can use to explain - and sometimes defend - our mobility behaviour to ourselves and others*" (Freudendal-Pedersen, 2009, p. 34).

According to Freudendal-Pedersen (2007), the most critical people to public transport is

the ones only using it rarely. The ones using it more frequently have a more positive perception. The structural stories get used to legitimize the choice. Stating the opposite of a structural story would demand good argumentation to convince others that the statement is correct, even though it would be closer to the actual truth. (Freudendal-Pedersen, 2007)

Freudendal-Pedersen (2009) characterises three types of structural stories. The first one is *the possibility-creating structural stories* that are argumentation for a certain mobility solution and how it creates possibilities in the everyday life, which otherwise would not be an option. The second story is *the practical structural stories*, that states only one mobility mode can fulfill the need for mobility. The last one are the *the impotent structural stories*, which deny all responsibility of their choice of mobility mode, because the society is structured this way and there is nothing to do. These three types of structural stories are often overlapping and supplementing each other. They should therefore not be seen as set categories, but as indications of understanding the reasoning behind the decision of mobility on a deeper level. (Freudendal-Pedersen, 2007)

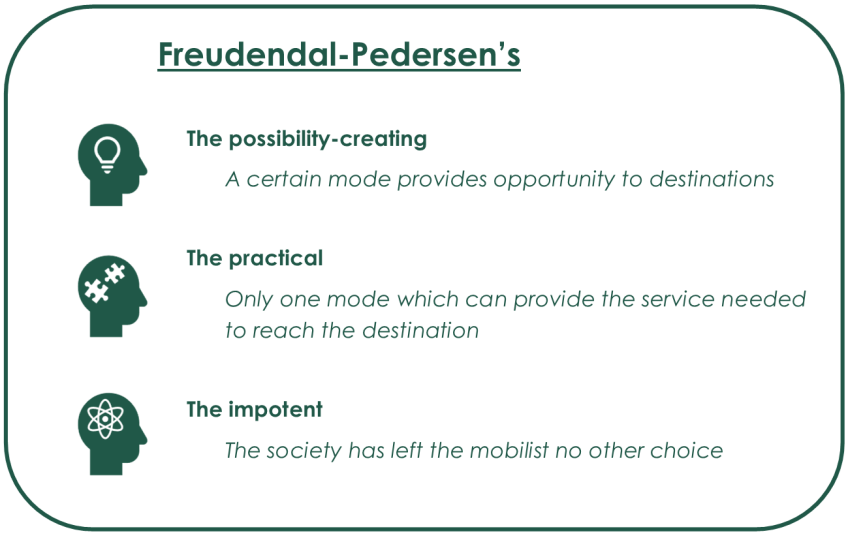


*Figure 3.4: Shows Freudendal-Pedersen's (2009) three types of structural stories.*

All choices of mobility and the patterns of mobility are determined based on different argumentations and perceptions – whether they are deliberative or not. The mobility does not just depend on the argumentation but also one's life choices. The idea of a lifestyle gets carried out through the choice of mobility. The mobility mode is the mean to symbolise a certain way of life. A structural story such as *if you are a family you need a car to manage the daily life* creates an understanding of the reasons and argumentation behind the choice of mobility. (Freudendal-Pedersen, 2007)

## 3.4 How to understand the choice of mobility mode?

This theoretical understanding of motility and the reasoning behind will be used in this thesis as terminology to understand the perception of motility on a deeper level. This section will seek to combine the theoretical thoughts in order to make a framework of how to gain insight into a rural community's motility.

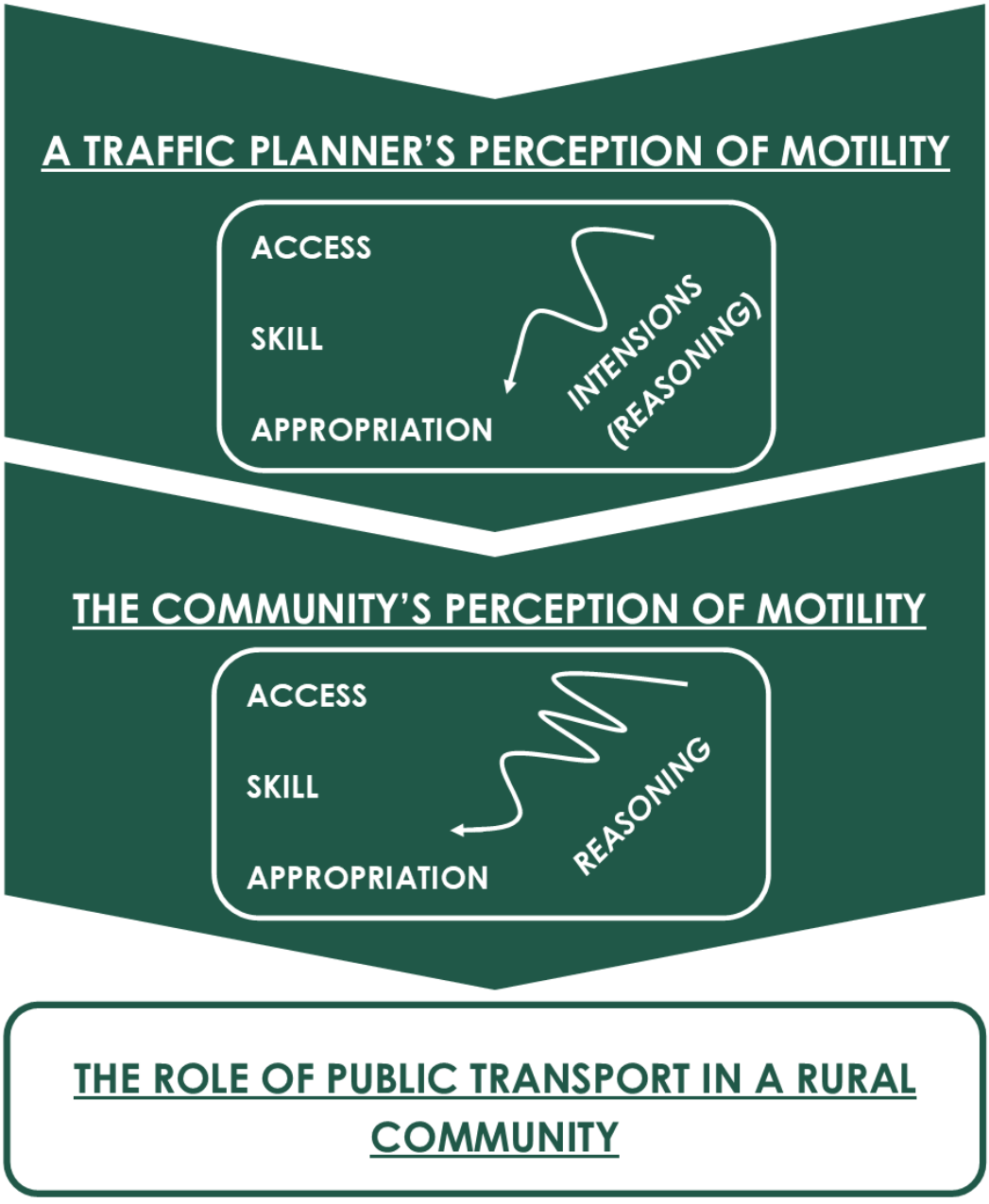


*Figure 3.5: Illustrates the framework for the analysis. First, a traffic planner's perception of motility will be uncovered, which will result in an overview of the community's possibilities with public transport and the intentions behind the initiatives. Afterwards, the community's perception will be analysed with the focus on discovering the reasonings behind their motility with public transport. By uncovering the traffic planner's and afterward the community's perception of motility it becomes possible to comprehend the role of public transport in a rural area.*

As mentioned earlier, Urry (2007) states that paths are visible connections between people and it represents thus a relation. Paths are necessary to be able to arrive at one's errands - the everyday life cannot be managed without being mobile (Urry, 2007). A bus route can be seen as a connection and a relation between places. Changing the path structure can be emotional for the ones getting affected, which also applies for a bus route. Removing a bus route or redirecting it can cause dis-connectivity between two places. It is more difficult to add a new path or a bus route to the structure and have it acquire the same emotional meaning ass existing ones. People have managed their everyday life without it, so it demands time and usage before it has the same emotional significance as the other routes. A bus route getting a higher frequency would probably increase the connectivity and relation between two places. However, only if it is seen as a possibility to be mobile.

NT's initiatives called Flextur and Plustur, which both are Flexible Mobility On Demand, have no specific route. When the routes are not visible and they do not connect any specific places to each other, do they then provide the same meaning as a path or a bus route? This can be difficult to say. If the use of these mobility modes become a part of the everyday life mobility, then they might have the same meaning as a fixed route. This investigation will among others seek to understand whether public transport creates connectivity to daily life errands even though some of them are not visible.

Kaufmann's (2002) idea behind motility is used as a tool to comprehend the perception of public transport. Motility is the coherent view of all mobility options. However, this investigation focuses on public transport and will not uncover the full perception of all mobility modes. Instead, it will focus on the motility public transport provides without rejecting other mobility modes. When referring to motility in this investigation it revolves around public transport and other mobility modes in connection to it.

The three components of motility create the structure of each perception. The first component is *access* which contains the options and conditions to be mobile. To understand the accessibility with public transport it is necessary to first have knowledge of the destination. This will make it possible to comprehend which public transport opportunities are available.

The second component is the skills required to use public transport. This is in regard to the physical ability demanded, the acquisitions necessary and the competence to organise a journey. It is investigated which skills are required to use the public transport opportunities that create access to the community's destinations. How the access and the skills are being interpreted depends on the appropriation. This last aspect of motility is, according to Kaufmann (2002),

determined by habits, values, lifestyle and so forth. The appropriation is depended on individual perceptions.

Kaufmann (2002) has based the theory of motility on individual persons' perception of mobility possibilities. This investigation focuses on motility from a traffic planner's and a community's perception. The traffic planner's perception is not based on one person's perception but a general perception by traffic planners. This investigation primarily focuses on NT's initiatives, since they are the ones present in the area. Which possibilities the initiatives create, will be examined - both in relation to access and skills. This is supplemented with scientific work to provide insight into intentions and thoughts behind the initiatives. By doing so it is possible to make assumptions of how a traffic planner seeks to affect the users' appropriation. The community's motility from a traffic planner's perspective provides an understanding of the intentions behind the public transport solutions.

Afterwards, it is possible to investigate if the solutions provide the opportunities as expected for the community. It is assumed that the community's motility is understood similarly to an individual person. This investigation will revolve around how the community perceives the motility of public transport. The community's appropriation will also be investigated like an individual by gaining insight into the habits, lifestyle and so forth.

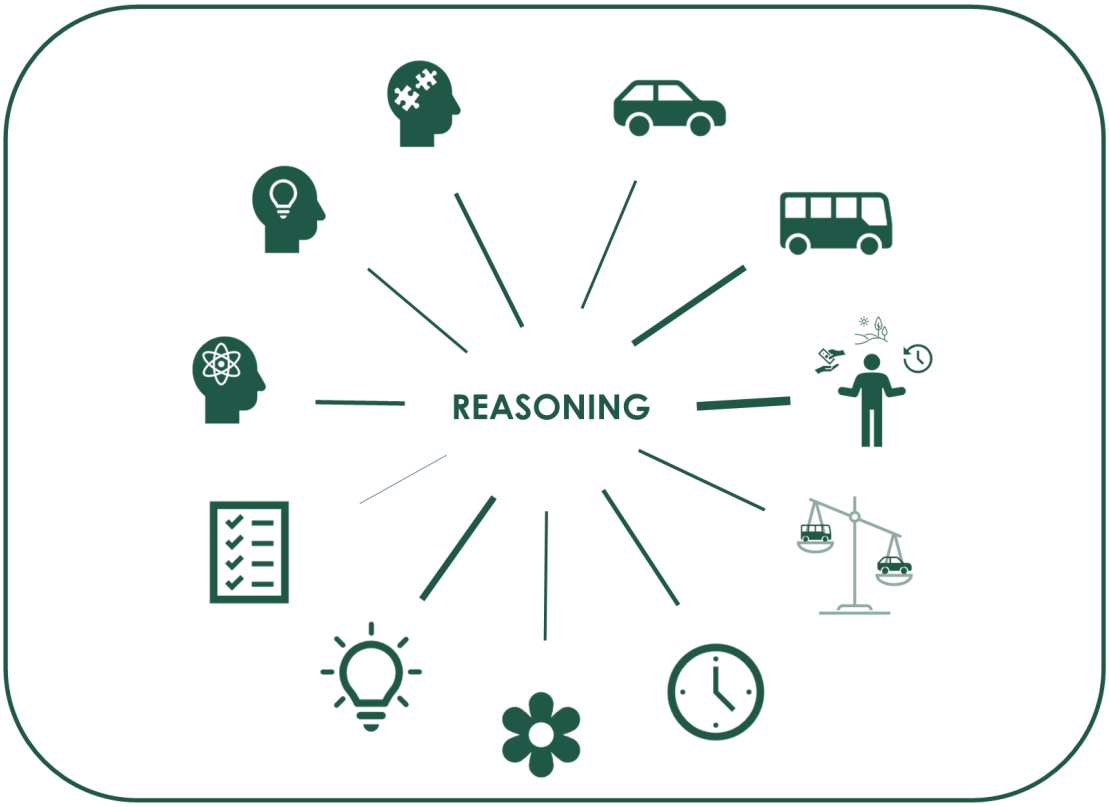


*Figure 3.6: Illustrates all the theoretical aspects affecting the reasoning.*

In order to gain knowledge of the appropriation of both a traffic planner and a community, it is necessary to look into the argumentation. This requires a terminology to be able to understand the reasoning behind the perception. Kaufmann's (2002) theory has provided a terminology of qualities to chooses accordingly and four types of mobilists. They will be used to gain an understanding of the community's preferences and mindsets. Additionally, Freudendal-Pedersen's (2009) *structural stories* will also be used to understand which type of argumentation is used. This provides an insight into what is perceived as a mobility possibility and why – their universal truths.

Freudendal-Pedersen (2009), Kaufmann (2002) and Urry (2007) have all provided theoretical thought which will be used in this thesis. The theoretical thoughts have led towards an analytical frame of how the existing theory will be used to investigate the motility. It will first be investigated from the traffic planner's perspective and afterward the community's perspective. In conjunction with the analysis of the community's motility the reasonings and argumentations behind the motility will be analysed. This will provide valuable information to understand the role of public transport in rural areas.

# A traffic planner's perception 4

NT launched a new advertisement campaign *"We travel together"* at the same time as the project Mainweb-West began. The purpose of the campaign has been to inform inhabitants about NT's mobility initiatives, which focused on improving the inhabitants mobility opportunities. Not long before the campaign has Plustur been launched. This initiative is suppose to supplement the current public transport modes, such as Flextur and bus routes, which together improve the mobility opportunities in rural areas. High frequency scheduled bus routes combined with flexible trips make it possible to use public transport no matter how rural the area is. (NT, 2019d)

NT's initiatives originate not out of nothing, but is a part of a larger movement in the global society towards more sustainable choices and new ways of understanding mobility. An example of this is how NT draws its inspiration from Mobility as a Service and Flexible Mobility On Demand to solve the last mile problem in rural areas.

Bilge Atasoy, Moshe E. Ben-Akiva, Xiang Song and Takuro Ikeda (2015) state in *The concept and impact analysis of a flexible mobility on demand system* that there are some challenges linked to using public transport. Many elderly and people with disabilities have difficulties with accessing and using conventional public transport services, because it is challenging for them to walk over to the nearest bus- or train stop. Another general challenge with public transport is, that it has fixed schedules and routes and has low frequencies especially during certain periods of the day in some rural areas. Thereby, it does not meet the demands of many users in their everyday life. Public transport is not so economically sustainable in rural areas which often causes the coverage and the frequency to be inadequate in these areas. (Atasoy et al., 2015)

NT's initiatives seek to solve these challenges and thereby improve the residents' motility. The initiatives have been investigated and the purpose of their creation. The initiatives are made to ensure adequate public transport services in Skarp Salling and its surroundings for all the residents. A traffic planner's perspective will deal with NT's perspectives, because they are the primary developers of the available public transport services in the rural area.

This chapter will take point of departure in the community's motility from a traffic planner's perspective. The first aspect of motility is access. It is important to understand the accessibility between the community and the everyday life destinations. The different public transport

possibilities combined with the intentions behind it will provide an insight into the community's accessibility and how they can be interpreted. The public transport opportunities might be available to handle the everyday life, but if the skills needed to use them are not acquired, it can create difficulties. NT has sought to minimize the physical skills needed, but other skills such as acquirements can be more challenging. All the initiatives have been made in order to influence the community's appropriation and through evaluations of the initiatives it is possible to gain insight into their appropriation.

## 4.1 Accessibility to everyday life errands

To understand the accessibility from a traffic planner's perspective it is important to understand the community's destinations in their everyday life. This does not matter if there are no public transports opportunities available. It is therefore important to compare the possibilities with the opportunities they have. The different public mobility modes provide a large range of accessibility. Depending on the destination it can be necessary to use one particular mode which provides the access. By combining the accessibility of the initiatives together it is possible to apprehend the traffic planner's perception of the community's accessibility.

All the representatives from the local villages state that the inhabitants work or study at many different destinations. Some work from home such as farmers (Sørensen, 2020), whereas other inhabitants have their base at home and drive around as a job (Jul, 2020; Adolfson, 2020). Furthermore, some of them work in the local area at different locations (Sørensen, 2020). In the local area, there is also a local school which is a destination-point for many residents - both adults and children. The school has "*(. . . ) two addresses. (. . . ) The first four-year groups are in Vindblæs. The rest from fifth grade and up, they are here [between Skarp Salling and Brøndum] at Bakkeskolen. There are bus connections to the schools that fit with the bell ringing time*" (Adolfson, 2020). The school buses drives through the small villages to pick children up in the school district (Sørensen, 2020). The school busses are route 540 and 542, who only drives at normal school days (they are both telebusses, which need to be ordered by a phone call at least one hour in advance (NT, 2020)).

Next to the school there is a sports hall, where the children among others can play handball. Many children travel however to other sports clubs in larger cities such as Løgstør, Aars, or Aalborg. (Adolfson, 2020) Løgstør is the closest city of these three, but when the children get older and want a higher level of competitiveness, they change to a club in Aars or Aalborg (Jul, 2020). In these three cities, does many of the community's inhabitants also work. Most

of the representatives highlight that there are good public transport possibilities to these cities. (Sørensen, 2020; Jul, 2020; Adolfson, 2020) Adolfson (2020) emphasizes that it is possible to take a bus connection from Skarp Salling relatively often both north to Løgstør and south to Aars. The bus connection between these two cities is the regional bus number 57 which NT has secured hourly departures in August 2019 (NT, 2019c). This bus route drives through Kornum and Skarp Salling and secures these villages with high connectivity to both Aars and Løgstør. The bus route is also beneficial for most of the young people in the villages, who are studying at youth educations in Aars (Jul, 2020; Adolfson, 2020). However, this bus route drives only through certain villages. Some of the other villages - like Hemdrup - are not part of the bus route. The residents who live in these villages must get to a bus stop in another village to get to Aars. Getting to the bus stop does therefore demand a shift in mobility modes.

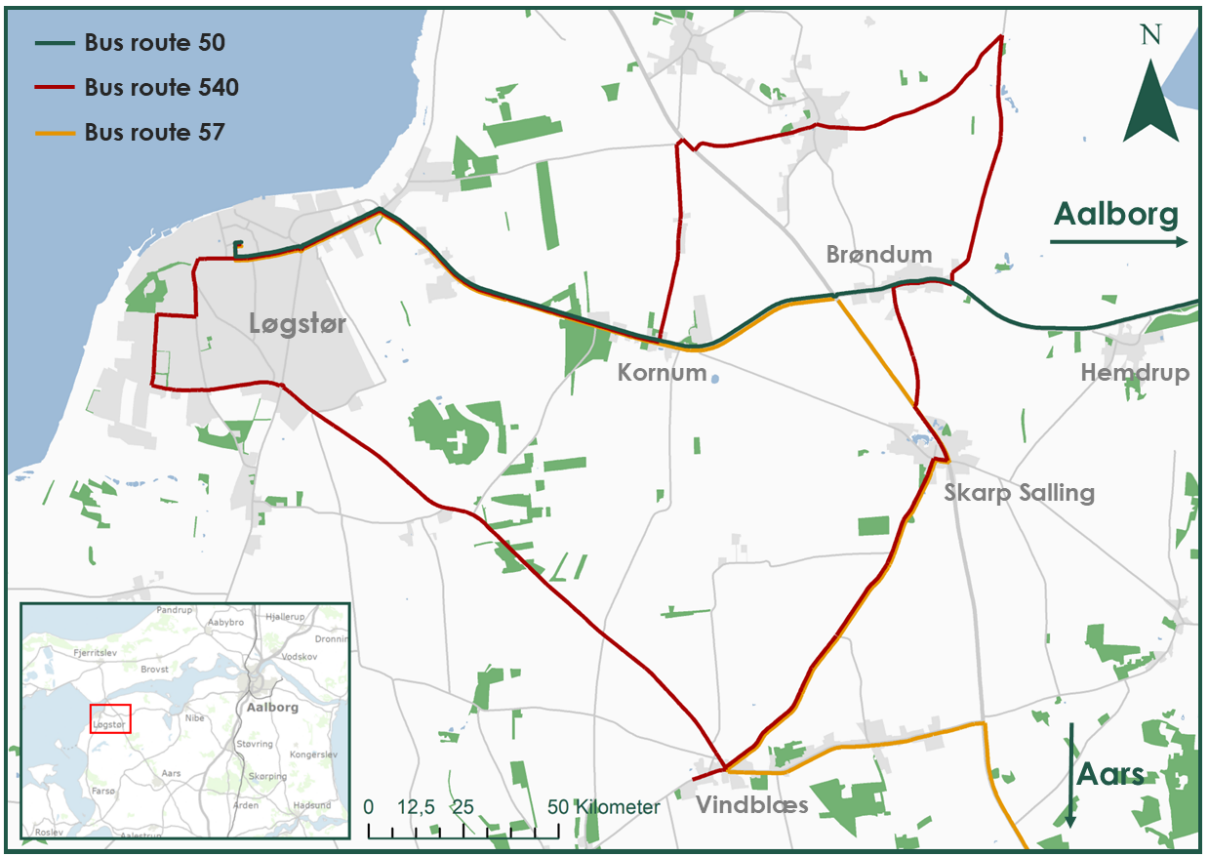


*Figure 4.1: Shows three bus routes in the local community: bus 50, 57 and 540. The other mentioned school bus (542) is an extension to the bus route 540. All of the routes has been made with help from Rejseplanen.*

Even though, Hemdrup is not part of the connection between Løgstør and Aars it still has an excellent public connection between the two other cities according to Sørensen (2020). "*There is only one bus route coming by. It is the one, there drives between Løgstør and Aalborg*". This bus line is the regional bus number 50, which likewise has hourly departures. This connection fits with employee's meeting times on factories in Løgstør (Jul, 2020). Like the other bus connections, it is only certain villages that are connected to this bus route while

other villages are not - which in this case is Skarp Salling. Both the residents of Skarp Salling and Hemdrup must travel approximately two kilometers to get to the bus connections that do not go by their village.

### 4.1.1 The purpose of high frequency of bus departures

Before the project of Mainweb-West began, there was mainly a strong public traffic connection along the railway from Hobro, south in the region, to Hirtshals or Skagen in the north. Many parts of the region do not have a railway connection with a high frequency of bus departures - Vesthimmerland municipality is one of the areas without a railway. Today, these areas have the bus routes along the biggest transport corridors called the Mainweb (in Danish: Hovednet) which supports the biggest commuting routes between all the cities with either over 2000 inhabitants or youth educations. In addition, the corridors also connect inhabitants to several tourist attractions and big companies. The bus lines along the Mainweb had a high frequency in the peak hours, but the bus departures has been more rare outside this time interval. (NT, 2017) At that point, there would probably have been a lack of accessibility, because the bus provided a limited set of options. If the mobilist would be similar to Kaufmann's (2002) *sensible to time* then it might have affected the mobilist to use other modes than the bus. Furthermore, it would probably have to be very persistent *civic ecologists* if they have continued using public transport with the limited options it provided.

NT believes that there is a high potential to attract more passengers to public transport if the frequency will be increased outside the peak hours. During the last years, NT has made a long-term strategy to improve the bus connections all over the region, so the busses can match the service level along the railway. It is hoped that the Mainweb will strengthen growth and attractiveness in the corridors it passes through as well as improving the citizens welfare. The project Mainweb-West is NT's first stage of streamlining the access and service level of public transport. The railway's service level can only be matched if the busses depart everyday during the week from early morning to late evening. (NT, 2017)

The reason behind the initiatives of Mainweb-West could indicate that NT is aware of the importance of motility and especially accessibility. By creating multiple access possibilities to handle the everyday life of the community, it would probably be possible to impact some of the structural stories for the residents. One of the structural stories which could be impacted is a *practical structural story*. Many have the idea that it is needed to have a car when living in a rural area. When it becomes possible to handle the everyday life this story might dissolve or be weaken. It can perhaps create a *possibility-creating structural story* which states that

it is possible to live in a rural area without a car, thereby making the area more attractive for settlement. This would probably be the ideal result of the initiatives, but nothing is certain.

Children and people over 65 get to ride with public transport for the half the price of a normal ticket in the North Denmark Region (NT, No dateb). NT's ticket discount can be related to the focus of the equity planner that among others fights for more affordable prices to these two demographic groups which often is the ones with the lowest income and without access to a private vehicle. According to Dalgaard (2020) do people on retirement pension not always have a lot of money, and cheaper public transport does make a difference for them. Both the options and conditions of access are met as long as the mobilist travels along the Mainweb. The high frequency bus departures ensure options available to be mobile and the half price on tickets for children and seniors ensures that the conditions are met. The access with the bus is however limited to the corridors which can create challenges for some mobilists not connected by it.

### 4.1.2 The Last Mile problem and Flexible Mobility On Demand

NT's high frequency bus departures can create better connectivity along the corridors, but what about the citizens who are not part of the bus route? Both Skarp Salling and Hemdrup is only connected with one bus route. The distance to the other bus stop can be an obstacle that might prevent some citizens from using it. This is especially a challenge if the mobilists do not have the physical skills to reach the bus stop.

One author, who explains this challenge is Matthew Curtis Lesh (2013) in *Innovative Concepts in First-Last Mile Connections to Public Transportation*. One of his main points is that public transportation quickly gets less efficient and thereby unattractive outside the core area of its coverage. He defines the last mile as the area in a radius of ½ to 1 mile from the location where people have access to a mobility hub (bus stop or a train station, where it is possible to change between different mobility modes). Many people tend not to walk further than a half mile to get to and from a mobility hub. Most people find it insufficient, unsafe, or difficult to get to the mobility hub if it is further away. They choose the car in many of these cases. (Lesh, 2013) This is both valid for the distance between the departure address and the mobility hub - The First Mile Problem - as well as the distance between the mobility hub and the destination - The Last Mile Problem. These two distances are equally important and will in this thesis be referred to as The Last Mile Problem (LMP) no matter the direction.

It is important to remember that all types of mobilists have some degree of Kaufmann's (2002) *sensible to time* in their deliberation of which mobility mode to use. According to

Kaufmann (2002) this type is "*(...) composed of people who base their modal practice on a comparison of the different journey times, cost, effort, convenience and other factors*" (Kaufmann, 2002, p. 70). The hassle and the time spent with public transport must not exceed a lot from other mobility modes, before the mobilist will not choose it. Simply, because it is more difficult to use than the other modes.

Another author, who talks about the LMP is Hai Wang (2019) in *Routing and Scheduling for a Last-Mile Transportation System*. He explains, that urban transport planners over the last decades have recognised that the LMP is one of the biggest challenges preventing people from using public transportation. An aging population internationally has increased the need for mobility services to solve this issue. Public transportation authorities' goal, when planning last-mile services, is not to reduce their operation cost, but rather to minimize the passenger's overall travel time. (Wang, 2019) The LMP is considered as a challenge in rural areas, even though planners primarily had paid attention to these challenges in cities. It is assumed, that the residents in the rural areas generally have longer distances to the closest mobility hubs compared to citizens, who live in denser areas. Therefore, the LMP is possibly an even bigger challenge in the rural areas and the need for those services are probably higher.

A solution to solve the LMP is Flexible Mobility On Demand (FMOD), according to Atasoy, E. Ben-Akiva, Song and Ikeda (2015). The demand-responsive transportation solution is an alternative to traditional public transport, because it offers the passengers greater flexibility at an affordable price compared to taxis. With FMOD services the costumers can order personalised transportation matching their demands. (Atasoy et al., 2015)

NT's advertising campaign, emphasises Flextrafic as the initiatives to accommodate the issues with the LMP. Flextrafic contains both Flextur and Plustur (NT, 2019c) - both are FMOD services. They offer highly flexible solutions at affordable prices. The inhabitants do not need to live within close distance of the nearest bus- or train stop to access public transport with these initiatives. These initiatives do thereby create good opportunities with reasonable conditions for the mobilists' accessibility.

Flextur drives the mobilist from one address to another between 6-23 o clock every day. The cost of a ride varies a lot depending on which municipality the mobilist is traveling in. It cost 3,50 DKK/km (exclusive the start fee) in Vesthimmerlands Municipality. Flextur has existed since 1997 to secure that everyone in rural areas can be mobile. Since its launch, it has developed into a replacement of some bus connections in the most sparsely populated areas. The inhabitants' demands of mobility are sporadic in these areas and the previous coverage of the bus is non-existing or close to. (NT, 2017) This could contribute to pushing the mobilists

away from public transport, because Flextur is not creating a certain path and is not visible in the landscape. It can perhaps be difficult to perceive it as an available option.

Another Flextrafic initiative NT has established in 2018 is Plustur. It is a FMOD service linked to the existing train- and bus lines that can secure a higher utilisation of those transport modes (NT, 2017). As mentioned, the inhabitants can with this solution order a trip and be transported between an address and the nearest mobility hub and vice versa (NT, 2019c). A mobility hub could be a bus stop or a train station - a place where it is possible to change between different mobility modes. This initiative does thereby eliminate the physical skill required to use the bus by driving the mobilist to the mobility hub. Furthermore, it contribute to the *possibility-creating structural story* that it is possible to use public transport in a rural area, no matter the mobilist's physical conditions.

These initiatives can improve the motility for the residents. Especially those who have preferences of Kaufmann's (2002) type *sensible to time*, because it among others improve the cost, effort and convenience of using public transport. The residents with these preferences need however to be aware of the options before it becomes a part of their motility.

### 4.1.3 The accessibility from a traffic planner's perceptive

From a traffic planner's perspective it is possible to handle the everyday life with public transportation. The representatives from the local area state that the destinations for the inhabitant of the community mainly is to the local area or to the larger cities. The school bus is going around in the local area before school and after school and picking up the children who need it. This bus provides the school children with good accessibility to their school - both regarding the bus schedule, which is fitted with the school and the distance to the bus stop, that would be near the home.

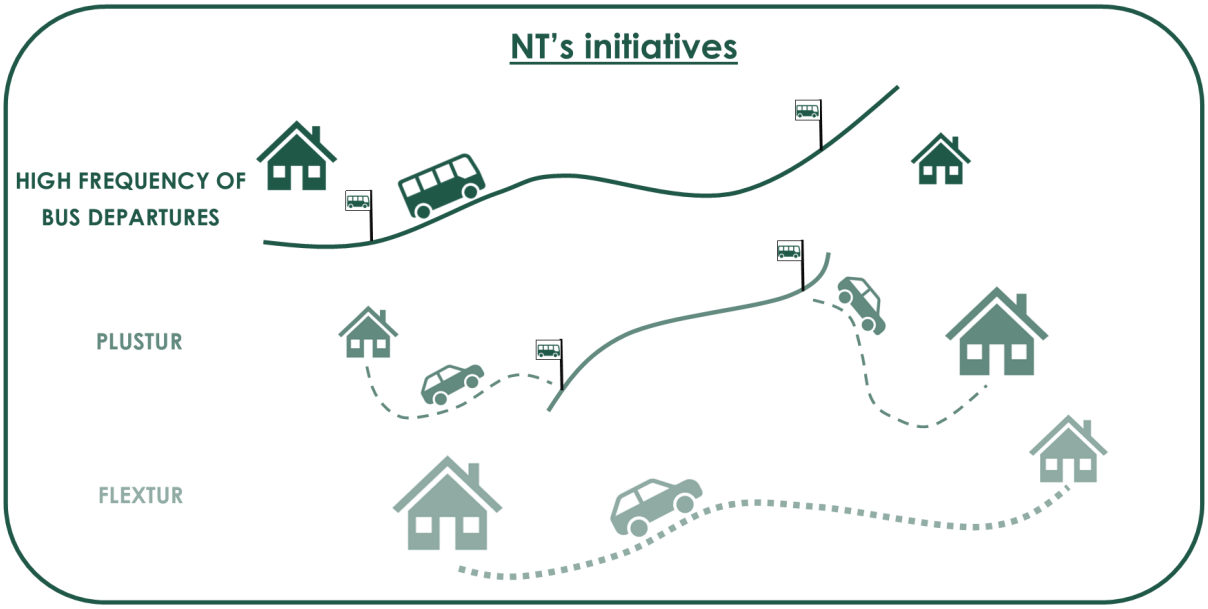


*Figure 4.2: Illustrate NT's three initiatives: High frequency of bus departures, Plustur and Flextur.*

For the adults who work in the local area, it is possible to access the workplace either by bus or Flextur. If there are no bus routes going by then Flextur would provide the needed accessibility. Only a limited amount of buses drives around in the local area, however with NT's project the bus connections to the larger cities is increased. Both bus number 57 (Løgstør - Aars) and 50 (Løgstør - Aalborg) have now hourly departures during the daily hours. The high frequency of departures provide all inhabitants accessibility to the larger cities. If the inhabitants do not live close by the bus stop, they have the possibility to use Plustur to get to it. The combination of school buses, hourly departures with the regional buses, Plustur and Flextur provide access to the everyday life errands for the community's inhabitants.

Before the new initiatives (Plustur and high frequency of bus departures) it has been more difficult to use public transport which could push some mobilists away from public transport. The mobilists which are alike the type *sensible to time* would probably not prefer public transportation options over other mobility modes, because the effort and convenience have not been adequate. The new initiatives have improved the accessibility to public transport in rural areas and thereby made it a possible choice for the *sensible to time*-mobilists.

The improved accessibility has also created the potential for eliminating or weaken some of Freudendal-Pedersen's (2009) structural stories. One of them could be a *practical structural story* about the need to have a car in a rural area. The initiatives could also strengthen a *possibility-creating story* such as that it is possible to live in a rural area without a car. These structural stories might be one of the wanted outcomes of the initiatives, but it is not sure that they can be established.

All the public transportation options in the community do overall provide good accessibility to everyday errands. They secure both mobility options to larger cities and to the local area combined with proper conditions. The FMOD services do also limit the physical skill needed to reach the bus stop. The rest of the skills needed to use public transport will be elaborated in the next section.

## 4.2 Skills required to use public transport

According to Kaufmann (2002), it is not enough to only understand the accessibility of public transport - the skills required to use them are also necessary. The physical component of skills is mostly relevant when talking about the bus, because the FMOD services called Plustur and Flextur pick the mobilists up at their home. As mentioned, the only physical skill required for the FMOD services is to be able to get in and out of a car. Flextur is also known as the transportation option for handicaps and as health transport (NT, No datea). It does therefore not require any physical skill to use. NT's initiatives provides the possibility to be mobile no matter where they live or their physical ability to get to the bus stop. Plustur secures that everyone can get to and from a bus stop no matter the distance.

It is more physically demanding to use the bus, because the mobilist must get to the bus stop on their own, if they do not use Plustur. Along some parts of the local routes are stretchers where the bus will stop along the road if the mobilist wave to the driver. These stretches functions as one long bus stop which will secure that the bus stop is closer to people's home. Thereby, reduce the physical skill needed to get to the bus stop.

The second component of skill is the acquirement a mobilist must have to use public transport. The bus demands that the mobilist has acquired a bus pass, a Danish Travelcard (in Danish: Rejsekort), or has physical money with him/her. The travelcard is a paying system for almost all public transport in Denmark. If a mobilist does not have acquired themselves a travelcard it is possible to pay for the ride when entering the bus. The money shall be in cash, because only a few busses accept credit cards. (NT, No dateb)

Before the mobilist uses the FMOD services they must acquire some skill. To be able to use Plustur, the mobilist needs to create an account on a user-profile to the platform of Plustur. When first this is done it is possible to order Plustur and use it in combination with other modes. Similar obstacle is present for Flextur, however, it demands a user-profile to its platform. It is also possible to call for a Flextur if the mobilist prefer that. It demands thereby that the mobilist acquaint oneself with the acquirement needed and use the time to get it before (s)he uses public transport. This can be an obstacle for some mobilists.

All these acquirements demand effort from the mobilist to get and can make it less convenience to use public transport. Mobilists who resembles the type of Kaufmann's (2002) *sensible to time* will perhaps find it as a hassle to use public transport if they do not already have the acquirements. One of the elements in the appropriation is the habits. If the mobilist want to use a different mode it would often be more difficult - especially with all these acquirements to use public transport. They do most likely scare some of the new passengers away. Particularly, this can be in cases of one-time-users, such as mobilists who normally use a car and then want to try public transport. Luckily, it is possible to use the bus by paying in cash and order a ride with Flextur from the telephone. This makes it easier to use public transport for the mobilist without the right acquirements.

The last skill required to use public transportation is the organisational which revolves around how the mobilist can plan the journey. According to Expósito-Izquierdo, Brito-Santana and Expósito-Márquez (2017) in *Mobilty as a Service* (MaaS), there is an internationally growing tendency of people wanting to buy a service and not a product. The sharing economy has also begun to influence the transport sector. (Expósito-Izquierdo et al., 2017) This tendency is similar to the perception behind the *civic ecologist*. Kaufmann (2002) states that "*These individuals (...) vigorously distance themselves from the dominant social perceptions of the car and public transport, turning them around by stressing the disadvantages of the car and the advantages of public transport in environmental terms*" (Kaufmann, 2002, p. 69). The idea behind the sharing economy and its implementation in public transport is something a *civic ecologist* would support.

Expósito-Izquierdo, Brito-Santana and Expósito-Márquez (2017) state that MaaS is based on a sharing economy and servicing; people share the products or services instead of owning them. Furthermore, it combines all transport opportunities in one platform, thereby providing the mobilist with the most optimal solutions of how to get from A to B. This can be an application on a smartphone that inform the users about how to reach their errands by using different mobility modes. The MaaS-platform would most likely show a journey combining multiple modes such as walking, biking, bus or train. It also shows the transportation schedules, cost and travel time of the journey, and thus provide the users with valuable information to make the planning of the journey easier. The system aims to offer the residents a range of mobility alternatives to private vehicles. (Expósito-Izquierdo et al., 2017) Moreover, the MaaS operator makes it possible to pay for the different mobility modes inside one single platform instead of multiple payment platforms and ticket operators. (The Maas-Alliance, No date)

The overview of a MaaS platform makes it easier for the mobilist to comprehend what the

mobility is composed of (time, modes, shift and so forth). According to Kaufmann (2002), a mobilist's choice of mobility mode is based on the preference of four qualities. Three out of the four qualities can be influenced by this platform. The qualities of *waste of time* would probably use it as a tool to get an overview of the extent of the solution with public transport. A mobilist who value qualities of the *pre-planner* would also use the platform to get an overview in order to plan the journey most optimal according to the wanted activity. The last quality which would benefit from a MaaS platform is the *flexible*. The MaaS solution will quickly provide information on how to organise the journey which would make it possible to be spontaneous. A MaaS platform can therefore provide the users of public transport an overview to plan according to their preferences.

NT has recently created partnerships with private companies in order to incorporate the private mobility modes such as carpooling and shared bikes into the Danish comprehensive travel planner (Den Nordjyske Rejseplanlægger). This MaaS solution with information, booking, and payment opportunities are available through the national app and web platform: *Rejseplanen*. NT wants to combine all mobility modes to create the most optimal travel-solution for each mobilist in Rejseplanen. Good mobility for NT is a better utilization of vehicles on roads, which can be improved by getting people to drive together. They challenge the traditional mobility paradigm of owning and driving the car alone by offering different collectively mobility opportunities. NT hopes that the inhabitants in the North Denmark Region will know when the trains or busses are an option and when it is not, and which alternatives they have in these situations. (NT, 2017)

In relation to the new FMOD service, Plustur, it is only possible to order a Plustur when it is shown as part of a mobility solution for a journey in Rejseplanen. Whereas Flextur is always possible to order, because it does not depend on other mobility modes. Both FMOD services have to be pre-ordered at least two hours before the departure which demands that the mobilist is aware of the exact travel time and destination at that point. The pre-planning of the two FMOD services is nevertheless an effort that a mobilists, with preferences of the *pre-planner* quality, probably will do anyway when planning their trip. The effort can however be an obstacle for the mobilists with preferences of the *flexible* quality, because they are more spontaneous and not likely to plan their exact destinations and pre-order the services before their departures. The FMOD services can thereby be more suitable for the mobilists with preferences of the *pre-planner* and to hassling for those with preferences of the *flexible* quality. Furthermore, if the mobilist is not handy with technology, it can be more difficult to plan the trip and might require help from others.

**The skills required**

| | Physical | Acquisition | Organisational |
|---|---|---|---|
| **Bus** | Getting to the pickup point | A bus pass or money to buy a ticket to the bus | Using the MaaS platform to plan the journey |
| **Plustur** | The ability to get in and out of a car | A user-profile to the platform of Plustur | Using the MaaS platform to plan the journey and pre-order the the journey at least two hours before |
| **Flextur** | No physical skills demanded - It is handicap freindly | A user-profile to the platform of Flextur, or a telephone to order the journey and even money to pay for it | Knowing the precise departure- and arrivel address and pre-order the journey at least two hours before |

*Figure 4.3: Shows the skills required to use the different public transportation modes.*

To gain an overview of all the skills required to use public transport, table 5.3 has been made. NT has sought to minimize the skills needed. Both regarding to the physical skill and the organisational skill. The FMOD services provide the mobility service necessary if the physical skill is a challenge. By using the MaaS-platform Rejseplanen to plan a journey, it provides an overview of the different mobility modes needed to accomplish the journey in combination with the schedule and the price of it. This comprehensive tool makes it easier for the mobilists to plan the journey, because they do not have to look multiple places for the schedule and figure out for themselves how the modes fit together. The acquisition required to use public transport might be an obstacle for some mobilists, especially because the mobilist needs to acquire a travelcard and a user-profile to the FMOD services. To create a user-profile and get a travelcard demands time, effort and often a technological understanding. All three elements can be a barrier to using public transport.

## 4.3 Appropriation of the public transport

The last element of motility is the appropriation. According to Kaufmann (2002), this is about "*(...) how people interpret access and skills*" (Kaufmann, 2002, p. 39). This analysis have been made from the perspective of a traffic planner and has provided insight into the thoughts behind NT's initiative which is present in the community. How the residents of the community interpreters their accessibility and the skills required is not something that a traffic planner would know. By making evaluations of the initiatives, it becomes possible to gain insight into which aspects affect the appropriation. This section will bring forward the current analysis made of the initiatives and how it can be understood from the traffic planners

perceptive. The interpretations from the traffic planner's perception are based on assumptions of the reasoning behind the mobility behavior. The results of the evaluation provides however a valid understanding of the community's mobility behavior.

Plustur and Flextur are not without any issues for the passengers according to Maria Kjærup, Mikael B. Skov and Niels Agerholm 2020 in *Digital-Enabled Last Mile: A Study of Passengers Trips in Rural, Low-density Populated Areas of Denmark*. One compromise, that Plustur and Flextur passengers must align with when using the demand-responsive services is ridesharing. It means that passengers need to share a ride if more users need to be picked up or delivered at nearby destinations. In this situation, the original ride may be extended via more delivery and pick up points resulting in longer transportation time. Even though the transportation time might be extended, NT guarantees their plustur passengers that they will reach their other mode of public transportation in time. Ridesharing is also visible through NT's first two quarterly reports from 2018, which shows the amount of plustur passengers in the early pilot phase. 1669 passengers used it divided into 1232 trips. A decent amount of the passengers had thus shared a ride with others. Another challenge with Plustur is that the pick-up point often consists of a bus stop without an exact address. This creates difficulties for the Plustur-drivers to locate the pick-up point. Furthermore, the passengers do not know what the taxi looks like. It has the potential to cause some confusion for the passenger, as they would not be able to distinguish the vehicle from a private car. These challenges can all be time-consuming and result in delays on the passenger's journey. (Kjærup et al., 2020)

To accommodate the challenges with locating each other on a Plustur, NT has made a new sign called the mobility hub marker. It is linked to Plustur and is established at every mobility hub in the four municipalities, where the inhabitants change between a Plustur and a bus or train. NT's intention with establishing these signs is to function as recognisable meeting spots, where Plustur drivers and passengers can find each other. (NT, 2019c) This will help solve some of the difficulties regarding pick ups and avoiding misunderstandings. These mobility hubs are not present in the community, but only in the larger cities such as Løgstør and Aars. Therefore, the challenges still exist in the community.

The challenges of locating the Plustur and that the original trips with the FMOD services can be extended are both unpredicted obstacles that require extra time and effort on the journey. These two parameters is especially valued by Kaufmann's 2002 rational *sensible to time* which all mobilists have elements of. The extension of the journeys and the unpredicted hassle affects thereby every mobilists appropriation no matter their preferences. It can probably be so big a challenge for some mobilists that it prevent them from using the options again.

Kjærup, B. Skov and Agerholm (2020) has additionally discovered that the amount of plustur passengers has steadily increased since it launched in 2018. Recent initiatives such as free trips and marketing campaigns have had a highly positive influence on the number of passengers. As a result, the monthly users have increased from approximately 500 to 1400 during the period. Most Plustur passengers are females (60%) and the primary user segment is relatively young; 40-49 years old (27,5%) followed by 20-29 years old (26%) according to some of the latest available data. (Kjærup et al., 2020)

What is interesting about this part of the evaluation is the age gap between the 20-29 years old and the 40-49 years old. This could be caused by the structural stories about the need to have a car if you have children. The 30-39 years old is probably the most ordinary age to have small children. According to the structural story, they would have a car in order to handle their everyday life and would thus use Public transport less. Another explanation could be that these two age segments do perhaps have a lifestyle more compatible with Plustur and are thus more likely to use the service.

In comparison to Plustur, the amount of monthly Flextur passengers was approximately 9200 in 2018 (NT, 2019a). Females have a higher tendency to use Flextur (71%) than males, and they are typically over 60 years old (58%). Many of them use Flextur rarely - for example, 2-3 times during a month (33%) and some use assistive devices such as a wheelchair (23%). Flextur is primarily used as transport to visits, trades, and leisure activities in the local area and it is rarely used in combination with other modes of public transport. Every fifth Flextur passenger states, that they do not have other alternatives to the demand-responsive solution and therefore would not have been able to accomplish their journey if Flextur was not an option. Flextur a positive influence on the inhabitants' mobility in North Jutland according to NT and especially for those who have limited mobility opportunities. (NT, 2019a)

Common for NT's measurements, is that the users primarily consist of females. This gender distribution fit with Kaufmann's (2002) explanation of the *exclusive motorist*: "*Mainly comprising males of a high socio-proffessional standing, and living and working away from the town center (...)*" (Kaufmann, 2002, p. 69). Females are on the other hand more present in types like *motorist compelled to use public transport* and *civic ecologists*. (Kaufmann, 2002) These two types are both more likely to use public transport. Females would thus be more inclined to use public transport than males.

The primary users of Plustur are rather young compared to the users of Flextur. This age-difference could be a result of the skill required to use the services. The elderly generation does often not have the same technological understanding as the younger and they would

therefore not be able to order a Plustur. Another reason could be that the users of Flextur used to be *exclusive motorists* but because of health issues, they do no longer have the skills required to drive a car. Furthermore, Flextur is the public transportation mode most similar to a car and the journey would therefore be more alike their previous mobility. It is worth noticing that many of the users of Flextur state that they have no other alternative to be mobile. This indicates that they are *motorist compelled to use public transport* and their motility is limited to the service Flextur provides.

The evaluation of the initiatives shows indications of different appropriation by the users. To properly understand the community's motility it is necessary to investigate all the mobilists - the ones using public transport and the ones using other modes. The community's perception of motility will provide knowledge of the real appropriation behind the choice of mobility mode.

## 4.4 The community's motility from a traffic planner's perspective

In the community, many citizens work or go to schools either in the local community or in the larger cities around. To secure that the children can go to the nearest school there is a bus line going around in the local community collecting all the school kids along the way. After school, do many kids go to different activities which often take place in larger cities. High frequency of bus departures, drives to the larger cities and secure connectivity to them - the community is especially connected to løgstør by multiple bus routes. If the mobilist can get to the bus stop either by themselves or with Plustur, then it is be possible to get to the job, school, or activity in time and home again afterward. Otherwise, it is possible to order a Flextur to fit each mobilist unique needs for a journey.

A bus route has normally a fixed route, pickup point and follow a schedule which either fits the need to be mobile or not. Thereby, creating accessibility and connectivity between the pickup points. According to Kaufmann (2002), access revolves around both option and conditions: The option is the pickup point and the conditions is the schedule. By enhancing the frequency of the bus departures the possibility for the schedule to fit with the mobility needs increases. NT's collected effort to improve public transport in rural areas depends on a high frequency of bus departures and flexible trips to and from the routes. These flexible trips have the mobilist's address as a pickup point and can either be arranged according to the bus schedule or the individual mobility need. These FMOD services create accessibility in the same degree as the private car, however, if the community is unaware of these mobility possibilities they will not even be taken into consideration.

When the access is not visible and does not follow a specific structure, it might demand

some extra organisational skills. The MaaS system called Rejseplanen can help provide an overview of the public transport options which creates the optimal journey. It can be difficult to plan the journey if mobilist does not have any technological understanding and it might exclude some people from using public transport. Luckily, it is possible to call and order a Flextur which provides the possibility to be mobile no matter the moblist's technological understanding. One of the acquirements needed to order the FMOD services online is a profile to a specific platform. Using the mobility mode for the first time does therefore demand extra skills to get the acquisition - this can be a barrier for some mobilists.

Even if the community interprets the accessibility as adequate and the skills required are not an obstacle, it is still not certain that NT's initiatives are part of the community's motility. The culture in the community might be alike the reasonings behind the *exclusive motorist*. This would imply that the community would never take public transport into consideration, no matter the initiatives from NT. It is also possible that they have reasonings more like the *motorists compelled to use public transport*, *sensitive to time* or even *civic ecologist*. In that case, NT's initiatives would be much more valuable for the community. Furthermore, it does depends on which qualities they chose according to and which structural stories they have. Only by looking into the community's perception of public transport, it is possible to understand how NT's initiatives influence the community's motility. This will be elaborated upon in the next chapter.

# Motility perceived by the rural community 5

The motility perceived by a traffic planner showed that the community has good opportunities with public transport to handle their everyday life. Nevertheless, if the community does not perceive the motility similar to a traffic planner, then the public transport possibilities will not provide the anticipated value to the area. This chapter will seek to uncover the community's perception of their motility in relation to public transport. According to a traffic planner, the community has good access to both the larger cities and to the local area. This perception is not shared by the community. The community focuses on the connectivity the bus routes provide and some of the other initiatives are not getting perceived as a possibility at all.

As foreseen by the traffic planner, there are some obstacles connected to the skills required to use public transport. To gain a full understanding of the community's motility, it is necessary to understand the barriers the people in the community experience. The perception of first access and afterwards skills will provide insight into the appropriation.

The last element of Kaufmann's (2002) motility is the appropriation - the assessment of which mobility mode to use. By gaining knowledge of the reasoning behind the community's choice of mobility mode, it becomes possible to fully understand the motility. This will provide an understanding of the appropriation. The community's accessibility, skills and appropriation will be evaluated in correlation to Kaufmann's (2002) qualities, types of mobilists and Freudendal-Pedersens (2009) structural stories to gain a deeper insight into the reasoning behind their preference of mobility mode. Thereby it becomes clear what influence and meaning public transport has for the rural community.

## 5.1 The community's perception of accessibility

According to Kaufmann (2002), the first step of apprehending the perception of motility is to understand how the accessibility is interpreted by the community. This section will provide insight into how the community experiences the range of possible mobility options to and from their village. It is notable that the community only mentions the bus as a public transport possibility, even though some of the respondents know about the FMOD services. Some of the respondents bring forward some of the challenges connected Plustur and Flextur and how the initiatives fit with the community's lifestyle. All of this will provide an understanding of the community's perception of the accessibility with public transport.

### 5.1.1 Accessibility with the buses

The three villages are all covered by bus routes, but in different extent. Jul (2020) states that Kornum is covered by multiple bus routes, because they passes by on the way to Løgstør. She explains that the level of public transport "*(. . . ) is positive for the residents of Kornum, because we have so many bus connections (. . . ) we cannot wish for much more*" (Jul, 2020). The community in Kornum perceive themselves as lucky in regards to their access to the multiple bus connections - especially since it is a rather small village. She further mentions, that the many options with the bus in Kornum provides accessibility to the village's daily errands (Jul, 2020).

As mentioned previously, Hemdrup has only one bus connection going between Løgstør, Nibe and Aalborg. With this single connection public transport is seen as an actual mobility option to these larger cities. Sørensen (2020) mentions that the single bus route is excellent and covers the community's needs as long as one's errands are in the same direction as the bus destination. This can be linked with the fact that the community primarily chooses the car to and from their jobs: "*I would say that those who work in the local area they need [a car]. If you are going by bus to a village just 10 km away, it will take an hour or more - you must go to Løgstør and wait and then continue [with another bus] (...). You simply cannot do that*" (Sørensen, 2020). Sørensen's (2020) argumentation leans towards Freudendal-Pedersen's (2009) *practical structural story*, where the car is the only mobility mode that is adequate to fulfill their needs in the local area. By stating that it is necessary to use the car if a resident has an errand in the local community, it legitimizes the choice without having to consider other options. Thus the car becomes the only practical solution to fulfill the need to be mobile. Hemdrup does not perceive the public transport adequate of covering the citizens needs to the local community (Sørensen, 2020). However, Hemdrup is grateful for the public transportation options, because it is better connected with public transport compared to other small size villages (Sørensen, 2020). Hemdrup's accessibility with public transport is thereby only viewed in relation to the bus route which provides access to the larger cities. The possibilities with plustur and Flextur is not taken into consideration.

The perception of public transport accessibility in Skarp Salling only deviates slightly from the other villages. Bengtsson (2020) states that "*Skarp Salling (. . . ) is not a bad city to live in for elderly people and low-paid people, because there are a lot of bus departures. (...) So, houses can actually be sold in Skarp Salling because the bus connections are good*" (Bengtsson, 2020). This statement indicates that the bus connections provides access for everyone - both in terms of options and conditions. Everyone can afford public transport. The public transport

options are good in Skarp Salling according to Bengtsson (2020) - especially to the youth educations in Aars and Fjerritslev. As a result, he believes the excellent bus connections have a positive impact on the real estate value in a village. His statement indicates that public transport provides possibilities for the newcomers to the community. This can bee seen as Freudendal-Pedersens (2009) structural story: *the possibility-creating structural stories*, where the bus connections provide good mobility opportunities for the community without the need for a car. The access public transport provides, creates the idea of possibilities which makes an area more attractive.

Adolfson (2020) states that there are some challenges for those in the village, who commute with public transport to bigger cities. "*(. . . ) [P]eople want to be able to get directly or near by their destination without changing too many times [between mobility modes]*" (Adolfson, 2020). He emphasises that the bus only offers access to locations between the cities in distance of the bus stop - "*Then you must take other alternatives from there*" (Adolfson, 2020). He brings forward the Last Mile Problem (LMP) with public transport. He further mentions, that the workplaces are spread over a large area in the cities - especially in Aalborg (Adolfson, 2020). Not everyone will therefore be transported directly or close to their final destinations. Having to change between mobility modes can be a barrier for using public transport, since it is more time consuming than a direct connection and results in more uncertainties on the passenger's travel. This interpretation of public transport shows that it is perceived as transport from a bus stop to a bus stop and not from A to B as NT has sought to create. According to Adolfson (2020), Skarp Salling has good access to the larger cities, but the mobilist needs to figure out for themselves how to solve the LMP. The possibilities with the FMOD servies are once again not taken into consideration.

The representatives for Kornum, Skarp Salling, and Hemdrup do all agree that the villages have great bus connections to the larger cities nearby. Not every small village close by experience the same public transport possibilities as they do. "*We do not need to go more than 5 km south or north, before they starts to complain, because they only have one bus route and there is three hours between departures outside the school period*" (Jul, 2020). The number of bus routes and their frequency influence the perception of access. Bengtsson (2020) agrees with Jul's (2020) statement by stressing that some of the neighboring villages have worse public transport possibilities: "*I was about to sell a house in a town called Næsborg. But only a school bus drove by the village and that was a problem*" (Bengtsson, 2020). This statement shows that access can affect the attractiveness of a village. In this example, the public transport was needed, because the family only had one car and therefore were dependent on public transport

to be mobile. Bengtsson (2020) also adds that access to a school bus is important for families with children and that bad access to public transport might hinder elderly people from settling in rural areas. "*It is not often retirees buy a house in the countryside and it certainly has something to do with the public transport (...)*". (Bengtsson, 2020) The lacking access to public transport is just as essential to the real estate value as the possibilities it creates when the access is adequate to fulfill people's everyday mobility. As mentioned earlier, NT hopes to improve the attractiveness of the rural area with the initiatives. These statement all indicate that it is possible since the bus connection is perceived as possibilities.

### 5.1.2 What about Flextur and Plustur

All five representatives mention, that the bus is the only public transport connections the community has (Sørensen, 2020; Adolfson, 2020; Dalgaard, 2020; Jul, 2020; Bengtsson, 2020). Several of them underline it by stating that they do not have a train or a metro out here in the area (Jul, 2020; Bengtsson, 2020). One could wonder whether this is due to the lack of knowledge of the public transport possibilities in the municipality. Based on their statements, it is investigated whether they know Flextur and Plustur. The interviews showed that four out of five of the respondents know Flextur, whereas only two know Plustur. Even though, they know the initiatives, they did not mention them. This could be because they do not perceive Plustur and Flextur as public transport or that the FMOD services are not a part of the perception of motility. Not even Sørensen (2020) mentioned Flextur, although he had used it several times in connection with an operation which put him in a wheelchair for a period. According to him "*(...) it has only been used in that context here in [Hemdrup]. (...) If you have to visit [others] across the local area then it might be [an option]*". Sørensen (2020) perceives Flextur as a fine solution for certain people and emphasizes that it can secure public transport connections across the bus routes. It will thereby ensure a broader mobility coverage for everyone in Hemdrup. Flextur might be an option, but Sørensen (2020) still believes that the community's residents will choose to drive instead and those without access to a car will either take the bus or commute with others in their car. The inhabitants seem to be excellent at helping each other by offering their neighbors a lift when they need to get to the same destinations. (Sørensen, 2020)

Sørensen (2020) has earlier mentioned that the bus connection is adequate for the inhabitants. He cannot see the need for Plustur in Hemdrup and do not think it will become particularly widespread. Furtermore, he is also unsure whether the two inhabitants without access to a car know about Plustur and Flextur. He has never heard them talking about it or seen it drive through the village. (Sørensen, 2020) It is noteworthy that even the citizens

without access to a car may not know the options of public transport. If they know about it, they do not use it. The statements from Sørensen (2020) show that neither Flextur nor Plustur provide any accessibility for the community. They are not even taken into consideration even if the inhabitants do not have access to a car. These statements show indications of Kaufmann's (2002) *the exclusive motorist* where the only mobility mode considered is the car. The accessibility the FMOD services can provide for the community is without importance if they are deselected before they probably are integrated in the community. According to Sørensen (2020), they will not even provide better accessibility for the citizens without a car, because they have the accessibility they need with the bus and the possibility to commute with others. The FMOD services do therefore not provide any needed access.

Adolfson (2020) perceives the FMOD services differently - He is one of the two respondents that knows about both Plustur and Flextur. He has only heard a bit about both initiatives but did not know exactly how it works. He and probably the other residents of Skarp Salling know that Plustur can be offered to the bus stop in Brøndum where it is possible to take the bus to Aalborg. It is unclear for him that Plustur can be offered to solve the last mile problem when a person arrives at their final bus stop. (Adolfson, 2020) This shows that even though Adolfson (2020) has heard about Plustur he has still not fully apprehended the accessibility it can provide. During the interviews have both Plustur and Flextur been explained to gain insight into the community's perception of them. Both Adolfson (2020) and Bengtsson (2020) can after the explanation see Plustur's potential. Bengtsson (2020) thinks that it can affect more elderly people to buy houses in rural areas, because it gives them the possibility to access their daily errands without having to be close to them. He also sees a potential to use it as part of a sale - especially if the buyer does not view the current bus routes as adequate to drive them to their errands. Event tough, people in rural areas do not know about Plustur, they have knowledge of Flextur and have a positive attitude about it, according to Bengtsson (2020). Flextur is not used as part of a house sale, because people already know about it. (Bengtsson, 2020) Even though, people knows about the possibilities with Flextur, there is no indication of the community using them, or that it has a significance for them. This might be caused by the indistinct paths it creates - it can be difficult to perceive the connection Flex can provide.

Jul (2020) is the only respondent that knows Plustur well and she has noted some obstacles for both FMOD services. She explains, that elderly people perceive it as more difficult to pre-order Flextur and Plustur at least 2 hours before the journey, compared to when they were young and the busses passed by more often (Jul, 2020). Afterwards, she states why the

planning with public transport can be a challenge: "*(. . . ) If we choose that now we will go out and eat, then we do not look at the bus schedule, then we go out and take the car and drive, because then it must be right now. (...). And it has something to do with our mindset*" (Jul, 2020). Public transport's fixed time schedules does not seem to fit well with the spontaneity of an adults everyday life. This is especially the case with Flextur and Plustur, where the journey needs to be planned more time in advanced. The community values *flexible* qualities which makes it undesirable to adapt the mobility behaviour to fit the conditions of public transport. According to Kaufmann (2002), the assessment of access is determined by both the option and the conditions. Because the conditions are viewed as inadequate to fulfill the journey at the wanted time, public transport.

As previously mentioned, Jul (2020) experiences public transport in Kornum as sufficient for covering the inhabitants needs. "*(. . . ) [I]f the busses do not drive when it fits, then we have (. . . ) Flextur we can call. It is not often that this is necessary out here. (. . . )*" (Jul, 2020) Thereby Flextur is seen as a security for the inhabitants without access to a car and whose needs are not fulfilled by the bus connections. The inhabitants in Kornum do not have a lifestyle suited for Plustur, because the other two options are enough for them. This is also the reason why they do not use this new initiative. (Jul, 2020)

The knowledge of the FMOD services is varying in the community. Their knowledge of it does however not make a large difference in their perception of it. Some of the inhabitants might view the accessibility the initiatives can provide positively, however they are mainly not perceived as mobility options. The access-options they provide are sometimes overlapping with the access the bus route or the car-pooling provides. Furthermore, the conditions for using the FMOD servies are not fitted with spontaneous demands - It needs pre-planning. These are all barriers which could explain why the initiatives were not mentioned when asked about the public transport possibilities in the area. The FMOD services are not providing the access the community wants.

### 5.1.3 Evaluation of the community's accessibility with public transport

According to the community the busses are the only available public transport option in the villages. The access they provide can cover the three villages everyday life mobility to the school in the local area and to the larger cities nearby. The bus connections seem to make the area more attractive for both current residents but also newcomer. Especially families with children find it essential for their everyday life. The neighboring villages with worse accessibility to bus connections might be lass attractive to families without a car.

Outside the bus corridors is public transport not seen as adequate. None of the respondents think about Plustur and Flextur as public transport options that are able all of the community's needs and solve the LMP. This is despite the fact, that many of them know about these initiatives. The community sees neither Flextur nor Plustur as providing accessibility, because it must be ordered at least two hours in advance, which does not fit to the *flexible* qualities they value. In general, the accessibility with public transport to the larger cities is perceived as good whereas the accessibility to the local area is viewed as not sufficient to handle the everyday life. Motility is not only about the access, but also about the skills required to use the mobility modes. The skills demanded to use public transport might create hindrances for using it.

## 5.2 The community's perception of the skills needed

By looking into the community's perception of the skills needed to use public transport, it becomes clear which challenges might prevent them from using it. The skill is comprised of three elements: the physical skills, the acquirements and the organisational. How they are perceived by the community affects the overall motility with public transport. As mentioned in the previous section, Plustur and Flextur have, during the interviews, not been taken into consideration when talking about public transport. This section will primarily focus on the community's perception of the skills required when taking the bus, because the skills required to use the FMOD services have not been discussed during the interviews.

The community does not seen to perceive any physical challenges to get to the bus stop. During the interview, Jul (2020) explains that "*[e]ither you ride a bike or scooter or you take the bus from here – the buses match together (...)*" - to Løgstør and catch another bus connection. She further explains that the choice of mobility mode to Løgstør depends on the weather conditions – it is not because of the physical challenge that the trip might pose (Jul, 2020). Adolfson (2020) makes a similar statement about reaching the bus in Brøndum: "*(. . . ) either you walk or take the bike (. . . )*". He mentions multiple times during the interview that the bike is used to get to and from the bus stop. Sørensen (2020) states likewise, that the bike can be used to get to Skarp Salling (to the grocery store). These statements and the absence of remarks from the other interviewee revolving physical limitations indicate that the community does not consider the physical skills to be a hindrance for using public transport. This might be part of the reason why they have not looked further into the options of using Plustur.

The second component of skills is the acquisitions. Most people have a driving license in today's society and even "*(. . . ) most seniors, in their 80s, still have a driving license and a car to drive in*" (Dalgaard, 2020). When a mobilist is used to a certain mobility mode it can be difficult to use another. As is the case in most things, doing something for the first time might be a bit challenging. By repeating the practice, it becomes easier with the increased experience. For mobilist used to the car, there might be some additional challenges to overcome when using public transport compared to mobilist used to it. Jul (2020) brings forward an example of this: "*I know that some of [the residents in Kornum] have had a problem – we have joked a bit about it at our summer parties – they were going with the bus and then they forgot to bring cash, because [the bus driver] did not take a debit card and the travelcard is not something that they had acquainted themselves with (. . . )*". This shows that some problems migth arise when transitioning between the use of a car and the use of public transport. There are certain elements of public transport that are very different, such as the restricted payment options. She expresses it as being a funny story, but it also illustrates the skills needed to use the bus. Dalsgaard (2020) mentions that "*[i]t has been 50 years since I has taken a bus. I do not know how you do besides get into it (. . . ) But do you have to have a bus pass, or can you pay in the bus or something like that – I have no idea*". Just like the ones in Jul's (2020) story, he does not know how to pay for a ticket. This once again indicates that if one is not acquainted with public transport it demands time set off to investigate what requirements are needed. Otherwise, the acquirements can be possible barriers to use public transport.

The last aspect of skills is to organise the journey. Today almost everything is digital, and it does therefore often demand a basic technological understanding. Dalgaard (2020) states that "*[t]he thing with edp and stuff like that - we are not fully informed (...)*". Elderly people have are not fully updated with technology and it can create difficulties when many things are digital.The mobilist can use the MaaS-platform Rejseplanen to make the planning of a trip as easy as possible. However, none of the representatives mention it during the interviews. Sørensen (2020) mentions instead two homepages for traffic companies – NT and DSB (a railway company) – which he uses to plan a trip. Their transport modes are all incorporated in Rejseplanen, but he might not know that and chooses therefore to do it "manually". Jul (2020) does not have to use technology to plan a trip: "*From here, it runs at '45 – both to and from the destination. (. . . ) So, we do not think that much about it. (. . . ) I do think that some of the elderly, whose children moved away from home 20 years ago, have to plan more of the trip since they are not used to it (...)*". The planning of a trip with public transport

can be a difficult skill, especially for people who are not used to travel with it. If a mobilist similar to Kaufmann's (2002) *exclusive motorist* has to use public transport it would probably be challenging, because they most likely do not possess the skills needed. This is due to the fact that they would not normally perceive public transport as an option and would only use the car as their mobility mode. Before using public transportation, it is necessary to obtain the skills required. Because it can be time-consuming and it often requires a technological understanding, it can create a barrier for using public transport.

Adolfson (2020) states that "*(. . . ) it is perhaps the time which is the biggest challenge – if you need to do something at certain times*". He further states that one must adapt according to the bus schedule to get to the appointment in time (Adolfson, 2020). Organising a journey is not just about getting from one point to another. It is also to arrive at the correct time. Planning a trip requires knowledge of departure and arrival times and the ability to coordinate switches between mobility modes. If the mobilist is not used to public transport it can be a difficult skill to acquire – especially if one does not use the MaaS-platform made for the same purpose.

The skills required to use public transport depend in general on the experience of the user, according to the community. If the mobilist is used to travel with public transport and has both a travelcard and uses Rejseplanen it is easier than for first-time users, because they have already acquired some of the skills needed. Whereas the first-time users would probably need some preparation before the journey. The only skill which does not differ with experience is the physical. However, the lack of physical skills will probably demand some extra organisational skills. How the skills required for public transport is perceived by the community has an impact on the users choice of mobility mode. A mobilist without the experience of how to use public transport would perhaps perceive the skills needed as barriers. In the end, it depends on the appropriation of their motility.

## 5.3 The appropriation by the community

The third aspect of Kaufmann's (2002) motility is the appropriation. By understanding the perception of accessibility and the skills needed to use public transport, it is possible to look deeper into the reasoning behind the choice of mobility mode. The appropriation is affected by habits, values, lifestyles and so forth. These are all factors that have an impact on which modes are perceived as a mobility opportunity and which in the end is chosen. The community is not one homogeneous group with equal opportunities, and because of this the following analysis is divided into three segments: (1) the children and young people, (2) the

car-users and (3) the adults without access and/or skill to use a car. The children and the younger people are a group who often are dependent on others driving them around or the option and ability to use public transport. The adults, with a car, are often the ones driving the children around and making most of the errands needed to handle the everyday life. Many of the adults in the community have access to a car. The ones without access and skill to use a car have a different perception than the children and the younger people, because some of them previously had the skills to use a car and some occasionally have the access to a car. This group is often used to the car, but does not have the option to use it anymore/sometimes. By understanding all three group's behavior and the reasoning behind, it becomes possible to gain a coherent understanding of the community's perception of public transport.

### 5.3.1 The reasoning behind the choice of children and young people

Children and young people are part of the group without the skills to drive a car themselves. They are often depending on public transport and the connections provided by it. The set bus schedules make it easier to have children in a rural area according to Jul (2020). They can get to school, youth education and sports without depending on their parents driving them – being self-transporting (Jul, 2020). As mentioned, Bengtsson (2020) also sees public transport as a benefactor in relation to the value of real estate, especially for families with children in the school-age.

The school bus drives around in the area every morning and picks up the children, so they reach the school in time for the first period. According to a school road-analysis made by the municipality (2019) of Toppedalskolen, the primary mobility mode to and from school is the car, even though there is a great bus connection. The percentage of children taking the bus only just surpasses the percentage of children get drove at one point: when the children between the classes from fourth to ninth grade needs to get home from school. Otherwise, at least 45 % of the children are using the car to and from school in a car. Particularly the children in the lowest classes use the car and when they get older more of them start to bike. (Vesthimmerlands Kommune, 2019) The change in mobility behavior could be a result of the school being divided into two: One school in Vindblæs for the classes between first to third grade and the other in Skarp Salling from fourth to ninth grade. The school road-analysis shows that no matter the location of the school there is a clear distinction between the children's choice of mobility mode to and from school (Vesthimmerlands Kommune, 2019). The number of children using a car to get to school is notable larger than the children who use it to get home. More children walk, bike or take the bus home – especially the number of children who use the bus increase the most. (Vesthimmerlands Kommune, 2019)

When knowing, that children only pay half price to go with the bus and the bus schedule is fitted with the school period, one can wonder why so many children choose another mobility mode instead. Sørensen (2020) seems to have the answer. He states that the school bus "*(. . . ) comes ten minutes past seven (. . . ) And they can bike a quarter of an hour later and be there. They can drive a half-hour later with their parents. I actual believe that is the explanation*" (Sørensen, 2020). This is a clear indication of Kaufmann's (2002) type called sensitive to time, where the choice of mobility mode is based on qualities similar to *waste of time* - The choice depends on which is most efficient. It also indicates that there is no specific preference for which mobility mode the mobilist would choose. They would choose according to the mobility mode they gain the most advantages from. Because the children can sleep a half an hour more if they drive with their parents, they will choose the car over the bus. On the other hand, they would choose the bus if it was reversed. Sørensen (2020) further explains that the parents often must drive to work at the same time, and it is therefore not difficult to drop their children off at school. Their parents do not always have the option of driving the children when they need to get home. They must therefore either take the bus or use the bike, that some children brought with them in the morning. (Sørensen, 2020) This could very well be the explanation of why more children use the bus to get home than to get to school. They calculate which mode is most efficient to reach their errand and choosing accordingly. The choice could furthermore be influenced by the *sensorial quality* a bike ride can provide. The mobility would in that case more be perceived as leisure time rather than transport.

The fact that some of the children might prefer the trouble of bringing a bike with them in the morning and bike home rather than taking the bus could also indicate that the children prefer other mobility modes over public transport. The bike could be seen as having similar symbology for a young person as the car has for an adult. This would imply that the children are basing their reasoning more according to Kaufmann's (2002) type the *motorist compelled to use public transport*. This type primarily consists of public transport users which will choose the car (or perhaps the bike) at any time it is possible (Kaufmann, 2002). Adolfson (2020) states that "*[e]ither the young people's parents drive them or, (...) they can take the bus (. . . )*" to go to a youth club in Løgstør. This statement shows that both options are available. The statement also indicates that the first choice is to drive with their parents and if that not is a possibility, then they will have to take the bus. It is a clear indication of Kaufmann's (2002) type *motorist compelled to use public transport* if the young people drive with their parents when it is possible.

According to Jul (2020), "*[t]he young people are used to travel back and forth with the bus and some of them out here will get a scooter early on*" (Jul, 2020). They use the scooter to get to Løgstør where they can take a bus to the larger cities (Jul, 2020). Even though, the young people are used to the bus they still choose another mobility mode as soon as they come of age. Jul (2020) explains it with their lifestyles: "*the young people who live out here, they are spontaneous. (. . . ) I believe that is why scooters and bikes have made their way out here, because they are so spontaneous*" (Jul, 2020). This shows that the young people chooses mobility mode in connection with which mode can provide mode of the *flexible* quality. They would chose the mobility mode perceived to fit with their current desires (Kaufmann, 2002). According to Freudendal-Pedersen (2007), the car is often associated with freedom, control and possibilities. For people too young to have a driver's license other private vehicles will probably have similar associations. Public transport's set schedule and missing opportunity to impact it can among other create a felling of lack of control (Freudendal-Pedersen, 2007). Instead of taking the bus (which is one of the most structured public transportation modes), it is possible to use the more flexible solution Flextur. However, that demands a pre-order two hours before which puts a stop to spontaneity and can also be seen as limiting for the mobilits freedom.

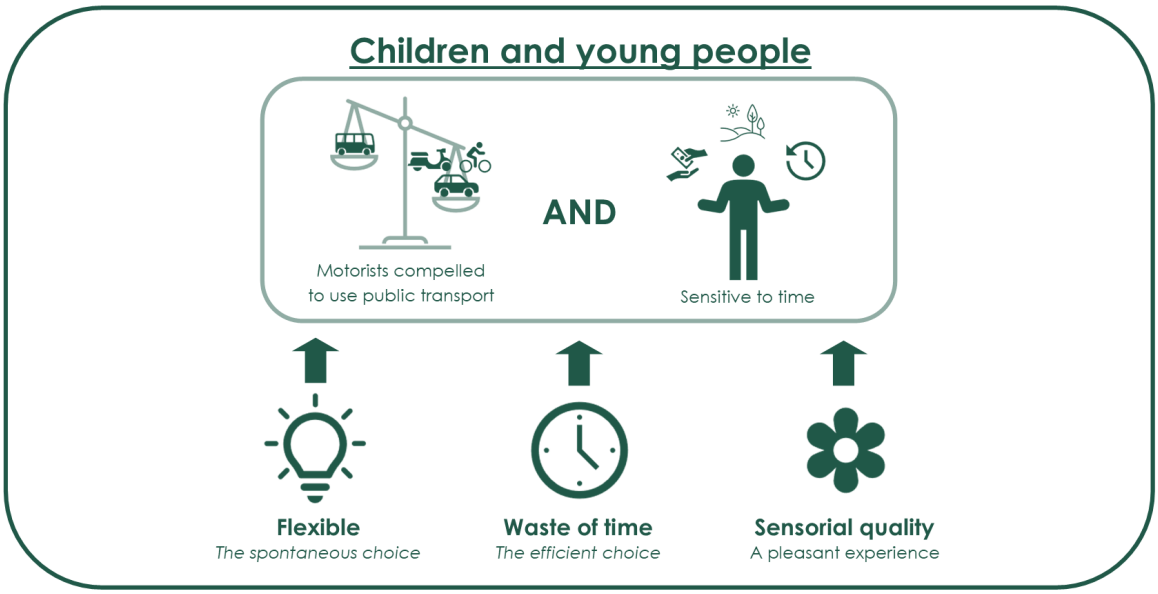


*Figure 5.1: Illustrate the children's and young people's reasonings behind the choice of mobility mode.*

The reasoning behind the children's and young people's choice seems to be a combination of multiple aspects. Especially the question of which is the most time-efficient mobility mode and the preference of the private modes over public transport. It is notable that the young people, who are used to take public transport, are not similar to Kaufmann's (2002) *civic ecologists*. This type is determined to only use public transport. On the contrary, they value

*flexible* and *waste of time* qualities in their choice of mobility mode. Furthermore, they perceive that their spontaneous lifestyle is better fitted with the symbol of freedom provided by private mobility modes.

### 5.3.2 Adults who only access their destinations by car

First, it is important to know that all the interviewees prefer to use the car to be mobile. This might affect their perception of the community's motility. The statements and examples of the community's mobility show a preference of the car and indications of an appropriation similar to Kaufmann's (2002) *exclusive motorist* or *motorist compelled to use public transport*. According to both Jul (2020) and Sørensen (2020), most of the citizens in the community have at least one car and many have two. Even most of the elderly have a car (Dalgaard, 2020). The ones that have a car available would not consider using public transport, because their motility is limited to the option a car provides. This is especially visible through the interviews with Adolfson (2020) and Dalgaard (2020). Their lack of knowledge regarding public transport indicates that they are not familiar with the possibilities that it provides. The interview with Jul (2020) shows that she has knowledge of bus routes through Kornum. Her family share one car and she is therefore sometimes compelled to use public transport. This can explain her profound knowledge of public transport. She still states that she prefers the car (Jul, 2020).

It is important to know the reasoning behind the choice of the car as the primary mobility mode and why public transport most often are not taken into consideration. This contributes to the understanding of the role of public transport in a rural community. During the interview, the representatives have been explaining the reasons why the choice of mobility almost always is the car. They brought forward many negative points about public transport to argue for their deselection. Their choice is not just based on deselection but also on several positive aspects about the car. In order to understand how set they are in their choice, it has been attempted to change the appropriation. This have been done by altering one factor which perhaps could affect their choice.

As just mentioned, Adolfson (2020) does not know about all the possibilities public transport offers in his community, even though he is partially informed about Plustur. Nevertheless, he still explains the reasoning behind his and others behavior by stating that the bus schedule "*(...) has never matched to our job schedules*" (Adolfson, 2020). He later states that if more people should use public transport, the frequency needs to be high "*(. . . ) and that is not possible, because [the buses] would be too expensive. It is probably the reason why it is mainly the private car that dominates out here in the rural areas*" (Adolfson,

2020). These statements disclaim all responsibility which indicates Freudendal-Pedersen's (2009) *impotent structural story*. the statement infer that it is not economically possible for society to improve public transportation enough to make it a motility option in a rural area. Adolfson (2020) might not be fully updated with NT's initiatives (especially the high frequency of the bus departures), but according to the investigation of the traffic planners perception (in chapter 4) it is possible to use public transport for commuting.

The choice of mobility mode depends on each person's values, habits and priorities, however, Adolfson (2020) is not alone in stating that public transport is not a mobility option for commuters. Sørensen (2020) states likewise that "*[t]he patience must be very high if you are to use public transport. (...) [F]or the people who are working and so on, [the car] is simply part of the package you buy when you move out here. You must have your own car*" (Sørensen, 2020). This statement shows that the quality of *waste of time* has a large impact on the choice of mobility mode. The choice of the car is based on it being the most efficient. The general notion behind the statement is that public transport does not fit with the busy working life in a rural area – it does not fit with the efficient lifestyle. Jul (2020) believes that deselection of public transport is caused by "*(...) the lacking feeling of efficiency which comes from just sitting and being transported (...)*". A mobilist with *pre-planner* qualities would perhaps argue the opposite: a mobilist can be more efficient when they do not have to control the mobility mode. They would thereby be able to do another activity simultaneously. In an everyday life where everything must be as efficient as possible to be able to handle the errands, the idea of sitting quietly in a bus without having control does not fit well with the perception of one's lifestyle. As mentioned earlier, it the car often connected to the idea of freedom, control and possibilities which is perhaps more in connection to their lifestyle.

The general perception of public transport by the community is that it does not fit with the working life. This indicates Freudendal-Pedersen (2009) *practical structural story*, because the community perceives the car as the only mobility mode which can be used to handle their everyday life. If this is the case, then public transport would not be perceived as a mobility option.

The idea that public transport is not fitted for the lifestyle in a rural area can also be seen when looking into the positive aspects of the car that the representatives brought forward. During the interview with Sørensen (2020) a lot of positive things about the bus route going by Hemdrup were said. Nevertheless, when asking him "*[i]f some of them, who is going by car in the same direction [as the bus], could be inclined to take public transport rather than the car?*", he immediately answers "*[n]o*" (Sørensen, 2020). The reasoning is that it is not

just one errand along the road, but many different, such as dropping off children and grocery shopping. "*(. . . ) [The car] is the practical solution (. . . )*". The idea of an efficient lifestyle goes together with a flexible mobility solution to be able to handle the everyday life. According to Sørensen (2020), Flextur is not flexible enough to handle the everyday life, because it only provides one destination and cannot handle multiple errands along the way. Both Jul (2020) and Dalgaard (2020) emphasise the fact that everything is easy with a car and most people are used to driving their car to handle their daily errands. The car is perceived as efficient and practical. For most citizens in the community, it would be unthinkable to handle the everyday life without a car – especially for a family with working adults. Non of the other mobility modes are taken into consideration which indicates that they are *exclusive mototrists*.

The car is also considered a luxury that a family wants to have if they can afford it. According to Jul (2020), "*(. . . ) the schedules of the buses are absolutely amazing, but since the houses out here are pretty cheap, a lot of people will also have the freedom to afford a car*". It is an economical prioritisation when choosing where to live and what to buy. Because many houses in a rural area are cheaper compared to houses in a city, it becomes possible for many people to have a car or maybe even two. It is important to remember that "*[i]t is often people with a low income who look at houses in a rural area. The money is therefore certainly an important factor*" (Bengtsson, 2020). By choosing a house in a rural area it often becomes economically possible to also get the luxury of owning a car. This suggests that people who move to a rural area to become *exclusive motorists*.

During the interviews, it was attempted to test their appropriation and reasoning. The representatives were asked if free public transport would change the choice of mobility. Both Jul (2020) and Dalgaard (2020) state that it would have an impact on the citizens who are retired, because they do not have a high income. Jul (2020) continues by stating that it would also have an impact on the younger people that are not old enough to drive yet. The main part of the citizens in the community would not change their behavior if public transport was free (Jul, 2020). Jul (2020) assumes that "*[t]he ones deselecting public transport out here does not so because of the price but the time consumption*" (Jul, 2020). She furthermore perceive the expenses of a car as "*(. . . ) a part of the cost of living in a rural area*" (Jul, 2020). The idea of life in a rural area includes having a car to handle everyday life. According to Kaufmann (2002), one of the main parameters influencing the appropriation is "*whether or not [the mobility mode] fall into line with dominant lifestyles*" (Kaufmann, 2002, p. 87). The change in the price of public transport will not have a large impact on the behavior – they are stuck in their motility perception with the car as the primary option. Also, Sørensen

(2020) and Dalgaard (2020) see the car as a part of life in a rural area. They both believe that it would be very difficult to change the community's behavior: "*They use the car and it is simply hard to break that habit*" (Dalgaard, 2020) and "*(. . . ) it will be difficult to change the culture*" (Sørensen, 2020). These statements imply that the rural behavior and perception is resolute and not likely to change.

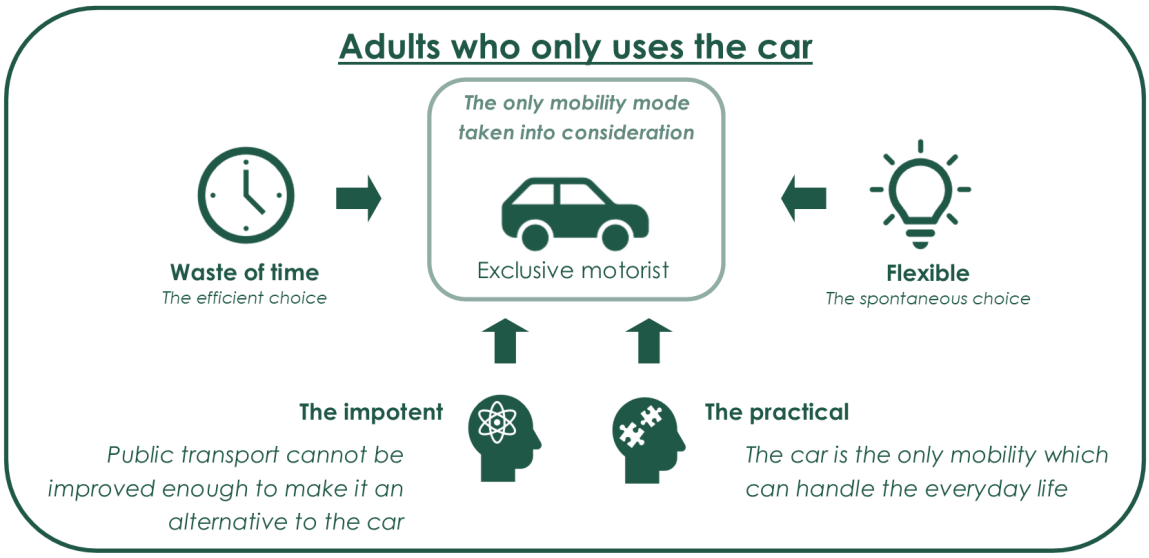


*Figure 5.2: Illustrate the adult's reasonings behind the choice of mobility mode.*

Most people perceive the car as part of life in a rural area. Even the newcomers to the rural area own a car "*[b]ecause they know that in a rural area it is difficult to get a bus*" (Bengtsson, 2020). The statement suggests that the perception of motility is formed before people move to the area. Their appropriation is formed by the idea that it is not possible to handle the everyday life with public transport. If one wanted to change the motility it would not only demand a change in the residents appropriation but also in the newcomers. Perhaps even a change in the idea of lifestyle.

### 5.3.3 Adults without access or skills to use a car

Adults with both access and skills to a car are mostly charaterised as Kaufmann's (2002) *exclusive motorist*. They chooses the car as their mobility mode without considering other alternatives. Even though they prefer to take the car, it is not always a possibility for everyone. Some mobilist do not have the possibility to choose a car. Among them are elderly who have lost their driver's license and thus the skills to drive. Additionally the adults, which are part of a families with one car, do not always have the option of a car.

Jul (2020) is part of the group, where a family only has access to one car and therefore occasionally do not have the possibility to use it. They normally drive together to and from

work. Whereas only one of them has access to the car, when they are doing other activities without each other, "*(. . . ) one of us will use the car and the other has to travel by bus*" (Jul, 2020). Public transport seems to be the second choice, because Jul (2020) prefers to travel by car and only uses public transport if that is not possible. She mentions another example of a family with one car, where one of them needs to choose between the bus or the bike when they have to get to work. This is a decision often made based on the weather condition. (Jul, 2020) This indicates that the choice is based on *sensorial qualities* where the pleasantness of the mobility is more important than other qualities. The families in the community that only have one car seem to lean towards Kaufmann's (2002) type called *motorists compelled to use public transport* or *sensible to time*. This combination indicates that the choice of mobility mode often leans towards the private modes, but other more qualitative values are also taken into consideration in the decision making. Which aspects are valued the most depend on each mobilist and their perception of the appropriation.

Both Jul (2020) and Sørensen (2020) mention that public transport particularly is for elderly people. Jul (2020) states that the elderly people structure their days more than the young people. Elderly people are therefore the ones in Kornum, who are the most incline to use Plustur and Flextur. (Jul, 2020) Their lifestyle fits well with the two initiatives that need to be ordered at least two hours in advance. This idea can be based on the perception that elderly people have more time and does not need to plan in connection with the quality of *waste of time*.

Dalgaard (2020), who is the representative for the seniors, disagrees with Jul's (2020) statement. He states that the elderly does not want to take public transport and the car is the preferred transport mode to senior events. (Dalgaard, 2020) Public transport is not wanted until the elderly people lose their driving license, their ability to drive, or no longer has a car. This contradiction of elderly people's behavior is perhaps caused by the idea that they have more spare time. Elderly people might be more scheduled in their daily life, but they still have appropriations similar to Kaufmann's *exclusive motorist*. Even though they often are not in a rush they still use the car - probably because that is what they always have done. As previously mentioned, only a few elderly people are in this group, because most elderly in the '80s still has a car and a driver's license. Besides, many elderly people seek towards the larger cities to be closer to services (Bengtsson, 2020).

Several of the respondents know elderly people that fit into this group and they all present the same story, that they help each other in the community. Elderly without access to a car get often offerd lifts by their friends and neighbors (Adolfson, 2020; Sørensen, 2020; Jul, 2020).

Dalgaard (2020) presents an example of that from their senior events: "*There has been some people who does not have a car or a driver's license, so they get a ride from somebody else*" (Dalgaard, 2020). This tendency of car-pooling to events can be an indication of Kaufmann's (2002) *sensitive to time*, because they assess that it makes the most sense to drive with each other and fill up the cars when they are going to the same events. According to Sørensen (2020), elderly people without access or skill to use a car will primarily use public transport to get to their everyday errands.

Another explanation of why people prefers car-pooling can be found in Kaufmann's (2002) *exclusive motorist*. This type and behavior might be so embedded in their perception of motility, that even when they cannot drive anymore, they perceive car-pooling as the better alternative. They might be compelled to use public transport to handle some errand but will probably prefer car-pooling when it is possible. An indication of this is that no one uses the bus to get to the senior association's events. Dalgaard (2020), has never experienced that someone used public transport to get to a senior event in the evening. He explains that it is due to the fact that there is no buses going by (Dalgaard, 2020). The investigation of the traffic planner's perception in chapter 4, showed that Flextur and Plustur are two options, that can secure public transport coverage anywhere from early morning to late evening. The two options can be used to such events. However, it does not seem to be used, because of the preference for car-pooling.

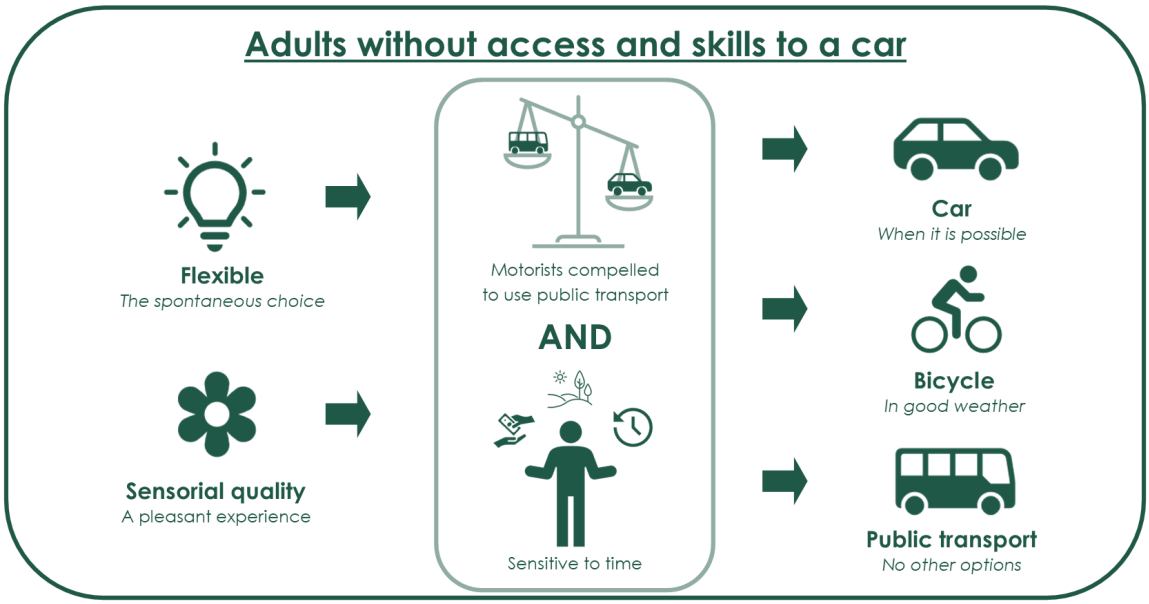


*Figure 5.3: Illustrate the reasonings behind the choice of mobility mode from the perspective of the adults without access or skill to a car, in combination with the choice of mobility mode.*

Common for all the residents, who do no have access to a car, is that they often need to choose between mobility modes, such as public transport and bicycles. Dalgaard (2020),

Jul (2020) and Sørensen (2020 all agree that "*(. . . ) [public transport] is something you do if you have no other options*" (Jul, 2020). No one in the community seems to choose public transport, because they prefer it. The choice is more likely based on the lack of option - they are compelled to use public transport. Public transport seems to function more as a safety solution for those without access to a car, rather than an attractive mobility choice that can compete with the private car.

### 5.3.4 The idea of life in a rural area

The analysis of the community's appropriation has showed examples of structural stories. All the statements from the representatives have in some degree been affected by structural stories of what life is like in a rural area. The primary structural story found in the investigation is that *one must have a car to handle the everyday life in a rural area*.

According to Freudendal-Pedersen (2007), the structural stories are used as reasoning behind the choice of mobility mode – it is the argumentation behind the behavior. They are often used as a guide of how the mobility behavior should be. It is important to remember that the structural stories are often overlapping and supplementing each other. (Freudendal-Pedersen, 2007)

During the interviews, all three types of structural stories have been visible when the representatives argued for the reasons behind their choice of mobility. They have mainly argued for the need of the car in a rural area. All three types of structural stories are supplementing each other in the creating of the primary story. They are all part of building the perception of the need of a car in a rural area. By looking into the argumentation behind the choice of a car, the interpretation of the community's motility becomes clearer.

The statements of the *opportunity-creating structural story* from the representatives indicate that the car provides them the opportunity to live in a rural area. According to the community, the car makes it possible to get around in the local area and handle everyday life errands. This is similar to the *practical structural story* which emphasises that it is necessary to have a car. The community does not perceive it as possible to live in a rural area without a car - especially if one is working. This can be explained with the last structural story which is *the impotent*. It states that there is no other choice than the car, because public transport is not adequate to handle everyday life. Furthermore, it is not possible to improve it to a degree where it can replace the car. The structural stories provides a insight into the main idea of life in a rural area and how it affects their perception of motility.

## 5.4 How is motility interpreted by a rural community?

The community in Vesthimmerland Municipality is in general very fond of the bus routes which connect the community to the larger cities. The fixed routes are important for their perception of accessibility to other areas. If the bus route does not pass by a place - especially locally - it becomes an obstacle to get there with public transport. The community perceives it as almost impossible to use public transport to get around in the local area. Therefore, a lot of people in the community fell that it is necessary to get a car to get around. Even though, public transport's accessibility to the local area is perceived as lacking there is still actual possibilities to get around. NT's two FMOD services, Plustur and Flextur, create access to both bus stops and destinations. When talking about public transport neither of the representatives mentions them. These two FMOD services are known by some in the community - especially Flextur is known by many - but they are mainly not use and do not present the same connectivity as a fixed bus route. The low use of these two initiatives could be due to the mismatch between the time required for planning and the idea of a spontaneous lifestyle.

If a mobilist is not used to public transport, it might create some challenges. First-time users must acquaint themselves with how public transport functions. They can use the MaaS-platform Rejseplanen to plan and get an overview of a journey which also provides the possibility to order a Plustur. If the mobilist of public transport do not use Rejseplanen then they will most likely not be familiar with Plustur. Non of the representatives mention the use of Rejseplanen. This is perhaps the reason why some of them are unaware of the public transport opportunities.

The good accessibility that the bus route provides does not affect the choice of mobility. Both children and adults are most likely to use private mobility modes when it is possible. The children and young people have appropriation similar to both Kaufmann's (2002) *motorist compelled to use public transport* and *sensitive to time*. They asses different qualities to decide which mobility mode to use. However, if a private mode are available they would most likely choose that.

The adults who have a car do not consider using public transport at all since it is perceived inadequate of covering their needs. The car-owners have the characteristics of Kaufmann's (2002) *exclusive motorist* for whose motility is limited to the use of the car. Only the citizens without the skills to drive a car or access to a car will consider public transport. They will however choose the private mode if it is possible. This is an indication of *the motorist compelled to use public transport* - they do normally use public transport, but whenever there

is an opportunity to use a car (or a private mobility mode) they will prefer that. This group have also indications of Kaufmanns's (2002) *sensible to time*, because they are more prone to use other factors, such as different qualities, to assess which mobility will be the most optimal in each situation.

The community's motility is overall very influenced by the private mobility mode - in such a degree that public transport is not taken into consideration. Only the ones without the option of using a car perceive public transport as a possibility, but it is still not certain that they will choose it. In general, the perception of motility shows that the community only consider public transport when there are no other options. No one shall however question the importance for them to have a bus connection. Other smaller villages, which are not part of the bus route, envy their possibilities. When asking the representatives about public transport in their local village, most of them stress that it is very good. How can it be that the public transport is perceived as good and important for the community when only the ones without a choice sees it as a option?

# Public transport's significance for the community 6

It is emphasised in the previous chapter, that public transport is important for the rural community. Only the mobilists without other mobility alternatives consider it as motility options. This chapter will focus on which role public transport has for the community. It is done in order to investigate which significance public transport has for the community, when it does not seem to fulfill the needs of everyday life mobility. Linked to the public transport's significance, it is relevant to investigate which influence it has for newcomers, since one of NT's goals is to make the area around the Mainweb more attractive. The community's perception of how much public transport contributes to making the villages more attractive will here be discussed. However, not every small village close to Skarp Salling has a high frequency of bus departures. The influence the limited public transport options have on the other villages will be elaborated.

NT's initiatives in the community are part of the Mainweb-West project. From a traffic planner's perceptive does it seem to have good intentions and provide excellent public transport coverage for the community. However, the community does not perceive it as part of their motility options - especially Plustur is not considered. What role public transport has for a rural community will be discussed during this chapter.

## 6.1 Public transports significance for newcomers in a rural area

By looking into which impact public transport has for newcomers to the community, it reveals the influence public transport has on an area's attractiveness. It is emphasised earlier that newcomers in general already have a car before they move to the rural community. This can be because they anticipate it will be difficult to use public transportation to be mobile. The structural stories of the life in a rural area are most likely not limited to the residents living there but does also affect the expectations of how life will be for people moving to the area. Even Jul (2020), who lives in Kornum - one of the most connected villages in the community - states that "*(. . . ) you must have your own transportation mode to get back and forth*". When newcomers prepare themselves to use their own vehicles instead of public transport, it seems like they have already chosen their perception of motility. They want to be independent of public transport. It can be questioned to what degree public transport has relevance for

the community if they do not consider using it even before they choose to settle there. And for whom is public transport relevant?

Bengtsson (2020) states that in general public transport is not a significant parameter for people, who want to buy a house in the area - except for families with children and elderly people. The location of the school and the connectivity with a school bus are especially important for families with children. The bus connections to the youth educations is likewise essential for settlement. (Bengtsson, 2020) Jul (2020) agrees with him that public transport is important for handling the everyday life of a family in a rural area: "*(. . . ) The regular scheduled transport with buses in connection with sports, schools, and Gymnasiums makes it easy to have children in rural areas.*" The school road-analysis shows that most children drive with their parents to school. Many children do also use private modes, such as the car and bicycle, to get home from school. In general, approximately a third of the children use the bus to and from school, whereas almost half of the children drive with their parents. Public transport would be a relevant factor for the families using it. However, the families do not utilizing the public transport opportunities. Other factors will probably have a larger impact on the settlement.

The bus connections have influenced more of the respondent's family's choice of settlement back in the 70'th and 80'th. Sørensen's (2020) family is an example of that. They bought a house in Hemdrup, because Sørensen's (2020) wife did not have a driver's license. Thus, it has been important for them to be able to use public transport to handle their everyday life. The connectivity of public transport played an important factor in their decision to live in Hemdrup, because it was better connected than in the other villages. (Sørensen, 2020)

According to Jul (2020), public transport does not play such a big role in a real estate sale today. She emphasise that no families with children will settle in a village such as Kornum with excellent bus connections, because it has a long distance to the nearest school. Instead, they prefer other villages such as Skarp Salling which is closer to the school and daycare institution. She mentions also that the last three families who have moved to Kornum have been middle-aged people without children living at home. (Jul, 2020) Their choice of settlement has probably not been influenced by public transport, because they have a car and would therefore most likely be the types of *exclusive motorists*.

Even though Jul (2020) thinks that Kornum's many bus connections do not attract more newcomers, she has no doubt about its influence for the communities: "*(. . . ) [I]s it exactly what keeps these villages out here alive (. . . ) We cannot be without it. (. . . ) we will completely depopulate these villages if the bus does not keep driving through*" (Jul, 2020).

Based on her statement, the fixed bus routes seem to be important for the community's perception of accessibility to other areas. The routes are like a symbol of the community's connectivity and an important mobility option for them. The community perceives the visible paths made by the bus connections as one of the important services, which reduces the effect of the vicious circle. Removing the bus routes will reduce their motility, although they generally prefer their private mobility modes. The community will probably feel disconnected from other areas and be concerned about the negative consequences it may result in. How can it be so important when almost no one uses it?

## 6.2 How can pubic transport be important, when no one uses it?

In general, the community perceives their accessibility by bus to larger nearby cities as excellent. However, it does not make public transport an attractive choice of mobility mode. As mentioned earlier, Pedersen and Therkelsen (2017) state that a service does not have to be used in order for it to have significance. It is about 'knowing' that it is a possibility (Pedersen & Therkelsen, 2017). Thus, public transport is an available service which creates connectivity no matter if it is used or not.

The community does especially appreciate their options with public transport when they compare them with other small villages nearby. Sørensen (2020) emphasises the issue that the other villages have by stating that "*(...) public transport (. . . ) is something that is discussed a lot when we are together across the villages. Because in many other places it is a far bigger problem than here in the village. (. . . ) Also, regarding settlement and opportunities for development*". Some of these other villages are not a part of the same bus routes and have a lower frequency of bus departures. The inhabitants who live there are much more dependent on the bus schedule, because the busses rarely pass by (Sørensen, 2020). As previously mentioned, the limited bus departures might be an obstacle in the sale of a house in these villages. Especially if the buyer is a family with children and without two cars available. Sørensen (2020) stresses that "*(. . . ) [Y]ou can get a relatively cheap house here but if you also need two cars besides, you can almost just as well buy something more expensive elsewhere*". The buyer needs to prioritise whether they want to get two cars in a village without adequate bus routes or settle in a more expensive area. The bus connections are thereby important for people who want to settle in a rural area although they often have cars available. Probably, they do not want to be depending on two cars and want other mobility options. It is interesting how the bus can be so important for their thoughts about the area even though they might not use it in their everyday life. Other villages without the same conditions, wish to have the

same public transport options as in Kornum, Skarp Salling, and Hemdrup. The other villages envy the three villages more bus departures.

Plustur can be a solution for the other villages, who have fewer bus departures. NT's aim with Plustur is, as mentioned, to connect all the inhabitants outside the walking or cycling radius from a bus stop to a network of high frequency of bus departures and thereby solve the last mile problem at an affordable price. Overall, Flextur and especially Plustur is not well known or used by the community and not perceived as public transport. If they perceive Plustur as a mobility opportunity they might have a different perspective of it and it might improve their perception of motility. Plustur is able to help the residents from the smaller villages who are not adequately connected to the other areas by securing good public transport coverage linked to hourly bus departures at the Mainweb. Based on the unused potential of Plustur, it can probably get larger influence on the smaller villages if people become aware of it. It can however be questioned whether public transport creates value for the community or if it is only the busses driving through the villages which are important.

Earlier in this thesis it is presented, that the high frequency of bus departures in the villages do not affect the community's choice of mobility, because they still prefer to drive in their private mobility modes. The private car is the first mobility priority for them. Even the mobilists without access or skill to use a car do not always choose public transport. These mobilists use often car-pooling or ride on their bike or scooter instead. In general, public transport is not an attractive choice for the community, because they among others perceive it as too time-consuming and nonflexible. The fixed bus routes do not match the community's efficient lifestyle, even though the communities have bus connections with a high frequency. The community only chooses or considers public transport when they have no other mobility options - public transport is their second or third choice, which also depends on other qualitative factors. Public transport functions thereby as a backup service for the community when the private mobility modes are not an option. The significance of public transport for a community cannot be measured in the number of users, but needs to be considered as a value for the area, creating safety, possibilities and connectivity.

Even though, public transport is rarely used by the community, they still perceive it as an important backup option even though they have cars. The bus routes are likewise important for their perception of motility and are a topic of discussion in other villages, where fewer busses pass by. Public transport's influence on a community exceeds the number of passengers - being connected is perceived as a great value for the villages..

## 6.3 Evaluation of Mainweb-West

The Mainweb-West project is more than high frequency of bus departures, it is multiple initiatives that combined provide good public transport opportunities for all the citizens in the community, according to the analysis of the traffic planner's perspective. Some changes that the new initiatives have resulted in have not been noticed by the community. Furthermore, the services the Mainweb-West can provide has not been seen as necessary by all the representatives.

The two main initiatives in Mainweb-West are Plustur and hourly bus departures via some of the biggest traffic corridors in the region. Plustur can be ordered in the whole region if one gets the option offered via Rejseplanen. The new hourly bus departures are limited to specific routes in the four municipalities. Skarp Salling and Kornum are some of the lucky villages, who has received more bus departures via the regional bus number 57. However, the community has not realised the improvements in the bus route even though they have been asked if they has experienced any recently public transport changes (Adolfson, 2020; Dalgaard, 2020; Jul, 2020). Moreover only two respondents have heard about Plustur.

When the respondents, in general, do not emphasise the changes, it may be due to the community not have noticed the initiatives, although NT informed about them in their advertising campaign. The reason may be that the respondents are *exclusive motorists* and are not likely to orientate themselves about public transport changes. The community also has the possibility of noticing the changes via Rejseplanen, but they will not get the options offered through that platform when they do not use it. Furthermore, the respondents have not seen Plustur drive around, which can be because no one noticed it since it looks like a normal taxi and does not stand out. Other respondents do not see a need for Plustur when the community has adequate bus connections (Jul, 2020; Sørensen, 2020). In case the busses do not drive to their destinations, then they already have Flextur as a backup solution.

Some residents in the community might be aware of the two FMOD services and use them already. However, most of the residents in the community cannot plan according to the two initiatives if they not are ware of the options and do not perceive them as mobility possibilities to other areas. NT's initiatives cannot make a difference in their motility if they do not know about them. The community somehow needs to become aware of the initiative in order for it to create value for them and be part of their perception of motility.

It seems NT has yet to fulfill one of their main goals with Mainweb-West, which is increasing the motility for the inhabitants in the four municipalities (Martens, 2020). The community

of the three small villages has overall yet not noticed it, but it is unclear whether other communities in all four municipalities have recognised and used the initiatives. Even if they are more aware of the initiatives then it will probably take more time before the communities in the four municipalities will incorporate it into their daily life and gain increased motility.

## 6.4 The role of public transport

A result of this master thesis's analysis is that a rural community's motility is dominated by private vehicles. The community does overall prefer to use the private car to be mobile. As mentioned, many in the community have appropriations similar to the *exclusive motorist*. It can be questioned whether public transport creates value for this type of motorist, since the car is the only option in their motility. Even though they do not use Public transport, it is still seen as security for them in rural areas.

When talking about public transport it is primarily the busses which are important for the community. It is perceived by the community as an important service that attract newcomers and thereby secure the villages' future development. The bus routes are like a symbol of connectivity to other areas and one of the few services that are perceived as keeping the villages alive. The connections seem to have the highest value in their mindset rather than in practice, because the community uses it only as a backup option when private mobility modes are not possible.

Bus connections are a hot topic in other villages, who feel more disconnected because of fewer bus departures. Newcomers who are looking for a house in these villages feel a need to have their own private cars available. The structural story, that you need to have two cars when you are a family in a rural area conflict with the aim of public transport. The objective of the service is to secure public transport coverage everywhere to make people mobile without the need for a private car. These thoughts are linked to the Equity planning approach of making everyone mobile at an affordable price.

As mentioned, Plustur is an affordable option that everyone can get offered when the bus is not an option. The initiative has an unused potential for the disconnected villages, because it can cover the time intervals between the few bus departures and thereby link people to a high frequency of bus departures between the larger cities. Both the community and these other villages seem not to be aware of it yet and are therefore dependent on the bus schedules and its destinations. As a result of the unawareness, the last mile problem is probably still present in these areas for those who are depending on public transport.

The respondents are also not aware of the improved bus departures between some of the larger cities. The community's perception of motility is not improved by the initiatives, because the residents are not familiar with their public transport possibilities. The residents need to know about the initiatives, before it can provide the community any value. Even though the initiatives are not fully embodied in the community, public transport has still an important role.

# Reflection of the methods and interpretations 7

The investigation in this thesis strives to be as reflexive as possible. Each time a choice or an interpretation is made, several aspects have been taken into consideration. Alvesson and Sköldberg (2009) states that "*[r]eflection can, in the context of empirical research, be defined as the interpretation of interpretation and the launching of a critical self-exploration of one's own interpretation of empirical material*" (Alvesson & Sköldberg, 2009, p. 9). The last level of the interpretation in a research project is to consider the outcome of the research. This chapter will seek to provide a critical perspective of the interpretations made by the research group and the methodological choices.

The outcome of the interviews has been interpreted multiple times. First during the interview, where some initial notes are written down to summarise the important points. This provided the possibility to discuss the overall impression of each interview. By doing so, the keywords for the coding of the interviews are found which are used to create the structure of the analysis. Not all the quotations have been brought forward. Those which are selected on the expenses of other quotations. Each quotation brought forward in the thesis is a result of interpretation. Not all aspects of the interpretations have been fully presented to the reader, because it would have been distracting. The interpretations of the statements which are part of the analysis present the main interpretation based on the entire data collection. The choice of which quotations to present and were to bring them forward has been part of the data processing. It would be possible to use the quotations differently, but the main outcome of the investigation is assumed to remain the same.

Even before the interviews have been conducted, some decisions and interpretations have been made. Particularly, the choice of the interviewed representatives has affected the investigation. They do all supplement the analysis with valuable knowledge. However, two additional interviews would have provided a deeper understanding of the subject under investigation. Both the perception of NT and the young people and the children have primarily been examined via written texts and others' statements. Interviews with a traffic planner and a representative of the children and young people would probably have contributed with further insight into these two perspectives. Furthermore, it is assumed that it would support the current analysis and not alter it. These two perspectives have been wanted from the beginning – especially the representative of the children and young people has been desired. However, the circumstances of COVID-19 have made it difficult to arrange the interviews and meetings.

It is important to be aware that the representatives mainly consist of middle age or elderly men. Moreover, they are all *exclusive motorist* which affects their perception of public transport. These are elements which can have distorted the investigation. However, they can also be the correct representation of the community. A clarification of this uncertainty will demand further interviews with different representatives such as the users of public transport in the community.

Another interesting perspective, which this research does not provide, is that of the villages without a high frequency of bus departures. Those villages might perceive the significance of public transport differently and perhaps be users of the FMOD services. This research group will like to encourage other researchers to follow up on this subject. The perspectives from these villages will probably contribute to the understanding of public transport's role in a rural area.

Each interview and written text is an interpretation made in a social construction. The outcome of the interpretations need to be seen in the light of the 'interpreters' mindset and the message they want to bring forward. Through the interviews, it becomes visible that public transport is a subject of interest in the community. The representatives' interpretations of public transport are a result of multiple conversations with other residents. Their perspectives are not unique but created in a social context. It is thus possible that another community will have a different comprehension of public transport's role in a rural area. This thesis informs of the qualitative values public transport has for a rural community. However, it is not certain that all rural communities have a similar perception. The perception will depend on the community's socially constructed interpretation of public transport.

During the investigation, several choices and interpretations have been made. The thoughts behind them and the important parts of the empirical data have been brought forward. This makes it possible for the reader to be critical and reflective about the results. It is expected that a similar investigation would provide a similar result.

# Conclusion 8

This master thesis' investigation has been based on the research question: *What role does public transport have in a rural community in Vesthimmerland Municipality?* By using the methods of literature review, interview and document analysis, the research question is illuminated. The literature review has resulted in the analytical framework in chapter 3. This method has furthermore been used in combination with the document analysis to gain insight into a traffic planner's perspective in chapter 4. The community's perception is comprised of statements from interviews of representatives for the community which is presented in chapter 5. Which significance public transport has for a rural area has finally been discussed in chapter 6. Thus, this thesis has illuminated the role of public transport in a rural area.

In order to apprehend sub-question 1, *How can the choice of mobility mode be understood?*, three theories are selected to establish a base of knowledge about mobility in daily life. This has furthermore created a terminology which is used to understand the choice of mobility mode on a more profound level. Urry (2007) puts emphasis on the importance of looking into people's mobility in order to gain insight into their everyday lives. Roads are solid paths which create connectivity among places. It is assumed that public transport similarly establish connectivity with the appertaining emotions. (Urry, 2007)

Kaufmann (2002) focuses not just on the mobility, but also on the apprehension of the possibility of being mobile. This composes the basis behind the concept of 'motility'. Three aspects determine which mobility solution is perceived as possible to use: access, skill and appropriation. Additionally, he brings forward four qualities a mobilist can consider when making the choice of mobility mode. His research has resulted in four types of mobilists that provide an insight into the appropriation of the choice of mobility mode. It makes it possible to comprehend which mobility modes are part of the community's motility. (Kaufmann, 2002)

To gain a more profound understanding of the types of argumentation used to justify the choice of mobility mode, Freudendal-Pedersen (2007) 'structural stories' are applied. They provide an insight into the mindset and idea of life in a rural area (Freudendal-Pedersen, 2007). All three theories have been used to comprehend the traffic planner's intentions behind the initiatives and gain a deeper understanding of the evaluation of them. Furthermore, it creates the foundation to be able to understand the community's motility from its own perceptive. Thus, the reasoning behind the choice of mobility mode is illuminated.

In order to answer sub-question 2, *Which mobility opportunities does public transport create for a rural community?*, the analysis of the traffic planner's and the community's perspective of public transport has been carried out. Approximately a year ago, NT launched the Mainweb-West project, which among other ensured hourly bus connections between the larger cities in Vesthimmerland Municipality. The purpose of the project has been to support growth, attractiveness and improve the mobility opportunities for the citizens. Skarp Salling and the larger cities nearby are among those who have gained hourly bus departures. This initiative combined with two FMOD services creates accessibility to all the community's destinations. Furthermore, evaluation of the FMOD services show that they each appeal to different demographic groups. Thus, the initiatives provide services for everyone according to a traffic planner's perspective.

The community is proud of being connected with a bus route and perceive the accessibility to the larger cities as excellent. Furthermore, the bus connection is perceived as an important service for the small villages to attract newcomers to settle in the community. Thus, securing the villages' future development.

The FMOD services are primarily not taken into consideration at all. This is among others, because of the various knowledge the citizens have of the initiatives. Additionally, the FMOD services requires to be pre-ordered at least two hours in advance, which the community perceives as an obstacle. The community expresses that the pre-ordering does not correspond well with their spontaneous and efficient lifestyle. In general, the community perceive the car as part of life in a rural area. This is all part of the reasoning behind why the bus not is perceived as a mobility opportunity by many of the citizens.

Throughout the investigation, it becomes clear that the dominant mobility mode in the community is the private car. The citizens with access to a car do not consider using public transport since it does not fit with their lifestyle. They express that it is not possible to use public transport to commute to and from work. Thus, it is not a part of their motility. Public transport is only used by citizens without other options. This primarily concerns young people not being able to drive a car and adults not having access or skills to use a car. When assessing their motility option they value the time aspect and more sensory elements. However, public transport is in this assessment often the last to be chosen.

This insight creates the basis of the discussion on *Which significance does public transport have for a rural community?*. The investigation reveals that the limited use of the buses does not correspond with the value public transport has for the citizens. The bus connections have a much higher significance than their actions reflect. The community is very fond of the bus

connectivity and emphasises its significance for making the area more attractive for settlement. It is especially perceived as important for attracting families. The community further believes that the connectivity is a main factor in limiting the depopulation in the area.

The connectivity with public transport is a subject of discussion in the community. The villages, who are not connected with the buses envy those who are. NT's FMOD services can provide the citizens with the same connectivity as the buses. They are created to secure public transport coverage everywhere. However, it can be seen as an unused potential, because people in general either are not aware of it or do not perceive the services as fitting for their lifestyle. Thus, FMOD services do not have the same significance as the bus routes for the community.

All in all, the fixed bus routes have large significance for the community, since they are perceived as a symbol of connectivity and a security to be mobile. The role public transport has in a rural area is primarily determined by the connection the buses provide. The initiatives without a fixed route do not create the same feeling of connectivity, even though it is possible to be connected everywhere with them. The role of public transport in Vesthimmerland Municipality is to guarantee the possibility of being mobile and to maintain the connectivity to other areas.

# Suggestions on how to plan public transport for a rural community 9

The previous chapters has provided a profound understand of the role of public transport in a rural community. Based on the results of the investigation, this chapter will present suggestions on how to plan for public transport in a rural area. This will be made based on the study group taking the role of the traffic planner and using the findings to develop suggestions on how a traffic planner can plan for a rural community.

The suggestions to traffic planners are the following four point, which will be elaborated further in the below sections:

- Secure good connectivity in rural areas
- Improve concepts instead of creating new ones
- Make the initiatives more visible in the landscape
- Ensure that the FMOD services can be ordered spontaneously

## 9.1 Consider public transports significance

It is presented in the analysis, that many residents in the rural community drive in their car or carpool with others to reach their errands. Based on the respondent's statements, only a few mobilists use public transport and it is when they have no other options. Especially plustur and Flextur seem to be rarely used by the community. As a result, the public transport options seem not to be used effectively and as hoped for. When evaluating public transport, it is too narrow to only consider quantitative factors and cost-efficiency. Other more qualitative factors are providing another insight that numbers cannot provide. It is thus important to take these factors into consideration when planning for public transport. One of the qualitative values that the rural community around Skarp Salling emphasise is the feeling of always being connected to other areas. Public transport is perceived as an option for them when other mobility modes are not available. It creates security for them, so everyone in the community can be mobile.

A traffic planner needs to understand that public transport can create a feeling of being connected to other areas. The planner needs to consider this aspect when planning for small villages. Removal of the public service, like it was done in some rural areas in Sweden and the United Kingdom, must be avoided. Such a decision can result in further decommission

of a rural community and cause them to feel forgotten. This study group suggests to **secure good connectivity in rural areas**

## 9.2 A traffic planner must improve their current mobility options

When a traffic planner evaluates the public transport options, it is important to be aware that it can take several years before the citizens in a community become aware of changes. An example of this challenge is presented through the respondents varying awareness of Flextur and Plustur. Flextur has existed since 1997 and Plustur since 2018. Four of the respondents know Flextur whereas only two know Plustur. It takes time before the community gets used to the new initiative and become aware of the options it can offer them.

Based on the knowledge that people in general first become aware of the initiatives after several years, it is important to ensure that the initiatives will last long. Traffic planners in the four municipalities must thus be persistent about Plustur and the high frequency of buses departures as part of Mainweb-West. The suggestion to traffic planners is to **improve concepts instead of creating new ones**. Plustur and the high frequency of bus departures will probably have a larger significance for the community if the planners extend the project after its trial period. Furthermore, Plustur might have an even larger impact if the initiative gets improved.

A traffic planner can also enhance the opportunities with public transport, by **making the initiatives more visible in the landscape**. As mentioned earlier, there are no mobility hub markers in the villages near Skarp Salling. Plustur can create more connectivity by being more visible in the landscape - show a path to other areas. This can be done by establishing markers at the Plustur delivery points. The planners can use the delivery point to inform the citizens about the initiative. These visible initiatives may raise a community's awareness of Plustur - especially for the residents, who do not use Rejseplanen.

Another suggestion to improve the mobility options is to change the requirements when booking a Plustur and Flextur and thus **ensure that the FMOD services can be ordered spontaneously**. Jul (2020) mentioned that the users of Plustur and Flextur perceive the pre-ordering as an obstacle. When the options need to be booked at least two hours beforehand, they do not fit into the residents' spontaneous lifestyle. The FMOD services can become a larger part of the community's motility if the two hours pre-booking can be re-considered and eventually changed. The technology understanding can also be an obstacle preventing some people from using the FMOD services.

## 9.3 An overview of the suggestions to a traffic planner

The four suggestion is based on the results of study group's investigation. It is therefore not tested whether they are beneficial for the traffic planners. Some of the suggestions might be challenging to implement and will be affected by the political deliberation. However, the planners can strive to use them as much as possible to ensure the best possible public transport service in a rural area.

# Bibliography


**Aalborg Universitet**, **No date**. Aalborg Universitet. *Malene Freudendal-Pedersen*, No date. URL `https://vbn.aau.dk/da/persons/111294/projects/`. Last viewed: 2020-05-24.

**Adey & Bissell**, **2010**. Peter Adey & David Bissell. *Mobilities, Meetings, and Futures: An Interview with John Urry*. Environment and Planning D: Society and Space, 28(1), 1–16, 2010. ISSN 0263-7758.

**Adolfson**, **2020**. Flemming Adolfson. *Interview made by the projectgroup on 3 April*, 2020.

**Agerholm**, **2020**. Niels Agerholm. *1. meeting with Niels Agerholm - member of the team of researchers at Aalborg University (Notes can be found in appendix)*, 2020.

**Alvesson & Sköldberg**, **2009**. Reflexive methodology: new vistas for qualitative research., chapter 1: introduction: the intellectualization of method And section: Coding: from data to categories in chapter 3: Data-oriented methods: empiricist techniques and procedures And chapter 8: On reflexive interpretation: the play of interpretive levels And chapter 9: Applications of reflexive methodology: strategies, criteria, varieties, pages 1–14, 62–67, 263–318. Serie. SAGE, Los Angeles, 2. ed. edition, 2009. ISBN 9781848601116.

**Atasoy et al.**, **2015**. Bilge Atasoy, Moshe E. Ben-Akiva, Xiang Song & Takuro Ikeda. *Transportation Research Part C*. The concept and impact analysis of a flexible mobility on demand system, page 373–392, 2015.

**Bengtsson**, **2020**. Lars Erik Bengtsson. *Interview made by the projectgroup on 20 April*, 2020.

**Berg & Ihlström**, **2019**. Jessica Berg & Jonas Ihlström. *The importance of public transport for mobility and everyday activities among rural residents*. Social Sciences, 8(2), 2019. ISSN 2076-0760.

**Buch-Hansen & Nielsen**, **2012**. Samfundsvidenskabernes videnskabsteori: en indføring, chapter 8: Kritisk Realisme, pages 277–318. Hans Reitzels Forlag, 2012. ISBN 978-87-412-5682-5.

**Dalgaard**, **2020**. Niels Christian Dalgaard. *Interview made by the projectgroup on 3 April*, 2020.

**Danmarks Statistik**, **2019**. Danmarks Statistik. *Faldende folketal i de små byer og landdistrikter*, 2019. URL `www.dst.dk/nyt/28453`. Byopgørelsen 1. januar 2019.

**EPFL**, **No date**. EPFL. *Prof. Vincent Kaufmann*, No date. URL `https://sti.epfl.ch/epfl-person/102121/`. Last viewed: 2020-05-24.

**ESPON**, **2017**. ESPON. *Policy Brief: Shrinking rural regions in Europe*. EUROPEAN UNION, 2017. URL `https://www.espon.eu/rural-shrinking`.

**Expósito-Izquierdo et al.**, **2017**. Smart Cities: Foundations, Principles and Applications, chapter Mobility as a Service. University of La Laguna, San Cristóbal de La Laguna, Spain, 2017.

**Farthing**, **2016**. Research design in urban planning: A student's guide, chapter 4: A justification for your research question, pages 61–74. SAGE, 2016.

**Freudendal-Pedersen**, **2007**. Malene. Freudendal-Pedersen. *Mellem frihed og ufrihed : strukturelle fortællinger om mobilitet i hverdagslivet.* Forskningsgruppen Rum, Sted og Mobilitet, Institut for Miljø, Samfund og Rumlig Forandring, Roskilde Universitetscenter, Roskilde, 2007. ISBN 9788773497067.

**Freudendal-Pedersen**, **2009**. Malene Freudendal-Pedersen. *Mobility in Daily Life: Between Freedom and Unfreedom*. Routledge, 1 edition, 2009. ISBN 9780754674900.

**Gray et al.**, **2006**. David Gray, Jon Shaw & John Farrington. *Community transport, social capital and social exclusion in rural areas*. Area, 38(1), 89–98, 2006. ISSN 0004-0894.

**Hammond & Wellington**, **2013**. Michael Hammond & Jerry Wellington. *Research Methods*. Routledge, 2013. (page 91).

**Jul**, **2020**. Tina Jul. *Interview made by the projectgroup on 8 April*. 2020.

**Kaufmann**, **2002**. Vincent. Kaufmann. *Re-Thinking Mobility*. Transport and Society. Ashgate, Ashgate, 2002. ISBN 0754618420.

**Kjærup et al.**, **apr 2020**. Maria Kjærup, Mikael B. Skov & Niels Agerholm. *Digital-Enabled Last Mile: A Study of Passengers Trips in Rural, Low-density Populated Areas of Denmark*, 2020. Unpublished.

**KL**, **2014**. Danmark i forandring: Udvikling i lokal balance, chapter 1: Befolkningsudvikling og demografi, pages 22–57. 2014. URL `https://www.kl.dk/nyheder/`

makro-analyseenheden/danmark-i-forandring/danmark-i-forandring/. Analyserapport.

**Krumholz**, **1982**. Norman Krumholz. *A Retrospective View of Equity Planning Cleveland 1969-1979*. Journal of the American Planning Association, Vol 48(2), 163–174, 1982.

**Kvale**, **2011**. Doing Interviews, chapter 1: Epistemological Issues of Interviewing, chapter 3: Planning An Interview Study, chapter 7: Analyzing Interviews. SAGE Publications, Ltd, 2011.

**Lesh**, **2013**. Urban Public Transportation Systems 2013, chapter Innovative Concepts in First-Last Mile Connections to Public Transportation. Reston, VA: American Society of Civil Engineers, 2013. ISBN 978-0-7844-1321-0 (print) AND 978-0-7844-7804-2 (PDF).

**Lyck**, **2014**. Udkantsdanmark og sammenhængskraft i Danmark : en helhedsanalyse., chapter 4 - Transport med hovedfikus på færgeafhængige øer og med inddragelse af busruteproblematiken i ydreområder, pages 67–101. [Copenhagen Business School, TCM, Center for Tourism and Culture Management], Frederiksberg, 2014. ISBN 9788792019257.

**Martens**, **2020**. Kristoffer Martens. *1. meeting with Kristoffer Martens at Nordjyske Trafikselvskab*, 2020.

**Milos N. Mladenovic**, **2019**. Teemu Sihvola Milos N. Mladenovic, Jani-Pekka Jokinen. *Transport Policy 76*. Policy lessons from the flexible transport service pilot Kutsuplus in the Helsinki Capital Region, page 123–133, 2019.

**NT**, **2019a**. NT. *NT'S MOBILITETSINDEKS 2018*, 2019. URL https://ipaper.ipapercms.dk/NordjyllandsTrafikselskab/mobilitetsindex/rapportregionnordjylland/#/. Last viewed: 2020-03-30.

**NT**, **2018**. NT. *Hvor nemt er det at komme rundt i Nordjylland?* Nordjyllands Trafikselsskab, 2018.

**NT**, **2020**. NT. *Telebus 542*, 2020. URL https://www.nordjyllandstrafikselskab.dk/Bus---togtrafik/Koereplaner/Koereplan?sid=CE0542. Last viewed: 2020-04-23.

**NT**, **2019b**. NT. *Hvor nemt er det at komme rundt i Nordjylland? Fokus: Mobilitet i det vestlige Nordjylland*, 2019. URL https://ipaper.ipapercms.dk/NordjyllandsTrafikselskab/mobilitetsindex/temafoldermobilitetsindex/?page=1. Last viewed: 2020-03-30.

**NT**, **2019c**. NT. *Vi rejser sammen - VEST*, 2019. URL https://www.nordjyllandstrafikselskab.dk/bus-togtrafik/vi-rejser-sammen-vest. Last viewed: 2020-02-24.

**NT**, **No datea**. NT. *Flextrafik*, No date. URL https://www.nordjyllandstrafikselskab.dk/Flextrafik/Flexhandicap. Last viewed: 2020-05-12.

**NT**, **2019d**. NT. *Vi rejser Sammen*, 2019. URL https://virejsersammen.dk/#module6. 2020-02-25.

**NT**, **2017**. NT. *Mobilitetsplan 2017-20: Fremtidens mobilitet i Nordjylland*. Nordjyllands Trafikselsskab, 2017. Pressemeddelelse.

**NT**, **No dateb**. NT. *Billetter & Priser*, No date. URL https://www.nordjyllandstrafikselskab.dk/billetter-priser/priser. Last viewed: 2020-05-12.

**Pedersen & Therkelsen**, **2017**. Helle Dalsgaard Pedersen & Anette Therkelsen. *'Like a pair of worn-out slippers': place attraction factors among return migrants to peripheral places*, 2017.

**Pedersen**, **2012**. Samfundsvidenskabernes videnskabsteori: en indføring, chapter 6: Socialkonstruktivisme, pages 187–232. Hans Reitzels Forlag, 2012. ISBN 978-87-412-5682-5.

**Skov**, **Feb 2020**. Mikeal B. Skov. *1. meeting with Mikeal B. Skov - member of the team of researchers at Aalborg University (Notes can be found in appendix)*, 2020.

**Svendsen & Tanvig**, **2007**. Gunnar L.H. Svendsen & Hanne W. Tanvig. *Landvindinger*. Syddansk Universitetsforlag, 2007. Only page 317.

**Sørensen**, **2020**. Kaj Bräuner Sørensen. *Interview made by the projectgroup on 7 April*. 2020.

**The Maas-Alliance**, **No date**. The Maas-Alliance. *What is MaaS?*, No date. URL https://maas-alliance.eu/homepage/what-is-maas/. Last viewed: 2020-03-25.

**UITP**, **2017**. UITP. *UITP AWARDS: NORTH DENMARK'S 'AROUND YOUR WORLD' INCREASES ACCESSIBILITY IN LOW-DENSITY AREAS*, 2017. URL https://www.uitp.org/news/awards-NT-denmark. Last viewed: 2020-03-30.

**Urry**, **2007**. Mobilities, chapter 1: Mobilzing social life AND Chapter 2: ´Mobile´ theories and methods AND Chapter 6: Inhabiting cars and roads, pages 3–16, 17–43, 63–89. Polity Press, Cambridge, 2007. ISBN 9780745634197.

**Vesthimmerland Kommune**, **2019**. Vesthimmerland Kommune. *Opgørelse over indbyggertal*, 2019. URL `https://www.vesthimmerland.dk/Umbraco/openpublic/EsdhFile/Download?id=758&url=Bilag/Punkt_6_Bilag_1_Landsbyer_Indbyggertal_grundtilskud_2020.pdf&stream=true`. Last viewed: 2020-04-23.

**Vesthimmerlands Kommune**, **may 2019**. Vesthimmerlands Kommune. *Skolevejsanalyse Vesthimmerlands Kommune 2019*, 2019. URL `https://www.vesthimmerland.dk/media/5167715/toppedalsskolen.pdf`.

**Wang**, **2019**. Hai Wang. *Transportation Science*. Routing and scheduling for a last-mile transportation system, 1, 131–147, 2019.