Sustainable Mobility in the Age of Internet

A Case Study of Travel Behaviour in Tórshavn

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Sustainable Mobility in the Age of Internet

– A Case Study of Travel Behaviour in Tórshavn

Master Thesis

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Abstract

The study investigates how information and communication technologies (ICTs) can contribute to sustainable mobility in Tórshavn, the capital of the Faroe Islands. Journeys with the purposes of work, shopping and leisure are investigated and analysed in terms of sustainable mobility. Data has been collected through a survey of residents in four neighbourhoods and interviews with respectively people with car and people without car. The findings of the study show that car ownership is perceived important for social inclusion and people with no car ownership are exposed to experience a low mobility. Thus, a high car priority has caused that less attention has been given to public transportation, infrastructure for non-motorised transportation modes and proximity in urban design. Results also show that there is an interest use ICTs to complement journeys and non car owners with a low mobility use ICTs to substitute physical. ICTs can, therefore, facilitate sustainable mobility by providing access to shopping, leisure and work. Policies that promote sustainable mobility should discourage car use but ensure a high mobility by improving conditions for public and non-motorised transportation. Mobility should be complemented by access in the local area and through usage of ICTs.

Acknowledgements

Thanks to Mohamed who from morning to evening tireless has kept the boys busy in play letting me immerse in the complex habits that underpin contemporary transportation problems. Thanks to Jamil, who again and again has read unstructured and puzzling writings, for providing encouraging feedback and for being my supervisor. Thanks to my family and friends for your support and our discussions. A special thank to Casa Suecia, the café at Catalania Bus Terminal and the internet café. Thanks to everybody who responded my emails, and thereby contributed with exclusive knowledge. Finally, I would like to thank all the people who were part of the survey and the people who I have interviewed. Thanks for giving me important data and a unique insight into your minds. For being absent, I would like to apologize to Rian and Ísak. I promise to make up for it.

Abstract

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Chapter 1

Introduction

1.1 Transportation and Environmental Effects

Transportation is a main pillar in modern society. Daily, people travel to work, shopping and leisure activities. Technological inventions have made it worthwhile for people to travel long distances for work and leisure, and in Denmark the average commuting distance to work was 19,8 km in 2012.[1] Even grocery stores have become centralised in locations outside populated areas allowing consumers to buy cheap groceries.

However, as much energy is used in order to sustain an increasing transportation demand, mobility comes at a cost. High amounts of pollutants are being accumulated in the atmosphere, oceans, land and living organisms. Road transport accounts for 75% of the total emissions caused by transport, which are around one quarter of global energy related CO2 emissions.[2] On top of emissions from the transport itself, the materials and energy used to make the infrastructure and vehicles used for transportation adds more up to emissions. Although vehicles and fuels are made more efficient every year, the extent of transportation increases accordingly, reflecting a constantly growing demand to move people and goods over vast distances. Car ownership is predicted to triple in 2050 if not strong global action is taken.[3]

1.2 Research Area

The car has radically changed the ways that people travel, organise work, spend leisure time and access goods and services. Similarly, newer technological advances in communication are of revolutionary fabric. As access to goods, services, work and leisure can be obtained through modern information and communication technologies (ICTs), car use can potentially be replaced.

The aim of this study is to investigate sustainable mobility in Tórshavn and how ICTs can

1 Danmarks Statistik 2014
2 IEA/OECD 2009
3 IEA/OECD 2009

contribute to a reduced travel demand.

Research Question

> *How can ICTs by improving access to work, shopping and leisure contribute to a sustainable mobility?*

Sub-questions

- *How do ICTs improve access to work, goods, services and leisure?*
- *How is car use related to the feasibility to use public and non motorised transportation for journeys to work, goods, services and leisure?*

Scope and structure

The study is confined to the city of Tórshavn, which is the capital of the Faroe Islands and has 18.200 inhabitants.

In Chapter 2 the theoretical foundations of the study will be presented. Firstly, ecological modernisation, which has influenced Western policies aiming to reduce emissions from the transport sector, will be introduced. The difficulty of ecological modernisation and environmental economics to decouple environmental pollution from economic growth will be presented. Secondly, it will be described why sustainable mobility should be understood as a reduction in personal motorised transportation through structural changes in domains outside of the transportation sector. Literature about how ICTs influence travel demand will further be presented.

In Chapter 3 the method behind the empirical data collection will be explained. The choice of methods will be discussed and its shortcomings pointed out. The reasoning behind the questions in the survey will be presented and the process in collecting quantitative data will be described. Similarly the process of attaining qualitative data from interviews will be explained.

Chapter 4 is an introduction to the case study. Policies related to transportation in the Faroe Islands and Tórshavn will be presented, as will the discourse related to climate change.

In Chapter 5, the results from the survey and interviews will be presented.

In Chapter 6, the results from the survey and the interviews will be applied in order to analyse how ICTs may complement sustainable mobility.

In Chapter 7, the results and sustainable mobility will be discussed in a Faroese context and in relation to ecological modernisation. Finally conclusions will be drawn.

Chapter 2

Theory

2.1 Ecological modernisation in the transportation sector

"17. The challenge is to break the transport system's dependence on oil without sacrificing its efficiency and compromising mobility. […The] paramount goal of European transport policy is to help establish a system that underpins European economic progress, enhances competitiveness and offers high quality mobility services while using resources more efficiently. […]

18. Curbing mobility is not an option."

European Commission White Paper 2011
"Roadmap to a single European Transport Area"

The excerpt from EU's white paper on transport gives an impression of what terms generally apply to national and regional policies that aim to decrease environmental impacts from transportation. With its emphasis on economic and technological progress, EUs white paper reflects the neoclassical environmental economic approach to questions of sustainability, also known as "ecological modernisation". This approach is concerned with decoupling emissions from economic growth, which will lead to a "green growth". However, where a decoupling apparently has had success, in countries such as Sweden, emissions have been "exported" to developing countries.[4] Thus, considerations with regards to rebound effects, in this case carbon-leakage, do not seem to be fully addressed by environmental economists.[5] Rebound effects are generally very likely to occur due to energy efficiency improvements rendering technological improvements insufficient to ensure sustainability. Even changes in behaviour, e.g. less driving, can cause rebound effects, due to saved time or money, and according to van den Bergh rebound effects are likely to continue to occur if environmental degradation is not quantified and priced through environmental regulation.[6]

Economic growth has been criticised by ecological economists who promote a stable economy in

4 Lidskog and Elander 2012, Davidson 2012
5 van den Bergh 2010
6 van den Bergh 2010

which material consumption is minimised and growth limits recognised.[7] Ecological economics take a broad approach to address environmental problems and only perceive the economy to be sustainable if measurements of economic welfare take account of externalities such as natural deterioration.[8] Ecological economics is debated and has largely been neglected in the literature.[9] However, by pointing out the omission of natural value in neo-classic economics, ecological economy can contribute to more comprehensive policies, which are based on notions of welfare instead of economic growth.

2.2 Sustainable Mobility

Strategies that promote sustainable mobility typically seek to move transportation away from personal motorised vehicles and instead encourage use of non-motorised and public transportation.[10] Instead of applying a focus on road traffic, which frequently results in a decrease in public and non-motorised transportation,[11] policies promoting sustainable mobility attempt to ensure a high accessibility to the job market, health care, leisure, shopping and education a way that supports non-motorised transportation.[12] In order to uphold the mobility that people expect and demand Sheller and Urry suggest that non-motorised transportation must be supplemented with more compact and slow public, semi-private and private transportation modes with inbuilt ICTs.[13] Such transportation technologies would be a "smarter" alternative to today's motorised vehicles, as they would consume less space and energy than conventional cars.[14]

As policies that focus on optimizations within the transport domain, such as improved infrastructure and improvements in fuel efficiency tend to increase capacity and not address rebound effects,[15] the approach to achieve sustainable mobility must include domains of consumption, production and land use.[16] Van Nunen and colleagues point out that in order to arrive at a sustainable transport system "*a broader structural and societal transition is needed in technology, the economy, culture, behavioural patterns and institutions*".[17] The barriers for such a transition to take place include

7 van den Bergh 2001
8 Daly 2007, van den Bergh 2001
9 van den Bergh 2010: 52
10 Banister 2008
11 Tripathi 2013
12 Tripathi 2013
13 Sheller and Urry 2010
14 Sheller and Urry 2010
15 van Nunen et al. 2011
16 van Nunen et al. 2011, van den Bergh 2011
17 van Nunen et al. 2011

"*technological, administrative, legal, political, socio-cultural, psychological and institutional factors"*.[18]

Having social aspects of behaviour in mind is vital to policies seeking to change travel behaviour such as car use, which is deeply integrated in the culture of billions of people across the planet and is therefore a complex issue to address. According to Anthony Giddens' structuration theory, behaviour can neither be understood through structuralism, which stresses the determining force given to social structures, nor through utilitarianism, which points out the voluntary purpose of human actors. Instead, human activity and the social structures, which shape it, are recursively related.[19] Thus, behaviour can not be simplified to be viewed a result of conscious choices as it is shaped and enabled by structures of rules and meanings, which are reproduced in the flow of human action.[20]

ICTs and accessibility

ICTs provide access but can not replace the intrinsic desire for mobility. Thus, ICTs can only supplement a sustainable mobility system and should not be understood as substitution for physical movement, which is a fundamental human need.[21] Research shows that information and communication technologies (ICTs) through different ways cause extensive changes in travel behaviour.[22] ICTs improve accessibility to work, shopping, service and leisure, but overall ICTs have not caused a noticeable decrease in physical travel, but might conversely have increased travel demand.[23]

Through online access work can become independent of place. It is thus by telecommuting possible to avoid physically commuting to work. However, because other journeys, such as shopping, are frequently made in relation to the work journey, these journeys will often be made anyhow, resulting in only a low reduction in travel demand.[24] ICTs also stimulate distant business networks and make it possible to settle remotely, which might further increase travel demand.[25] Therefore, even if studies show that telecommuters and their household members have a relatively low travel

18 van Nunen et al. 2011
19 Shove et al. 2012, Andersen and Kaspersen 2000: 379
20 Shove et al. 2012
21 Mokhtarian et al. 2001
22 Cohen-Blankshtain and Rotem-Mindali 2013
23 Cohen-Blankshtain and Rotem-Mindali 2013
24 Arnfalk and Johansson 2013
25 Aguiléra 2008, Arnfalk and Johansson 2013

demand,[26] this effect will be reduced as ICTs at the same time stimulates more travels.

The extent of e-shopping is still small when looking at total retail sales, and thus has a limited effect on total travel demand.[27] As in-store shopping commonly is made as an extension to e.g. the journey to work, or because many purchases frequently are made on one shopping trip, e-shopping is not found to substitute journeys.[28] Instead does ICTs increase transportation of goods, as more is being bought online.[29] According to a study made of an island community, e-shopping had reduced long-distance travels to commerce centres and additionally strengthened socio-cultural relations as people have been allowed to engage in a range of previously unavailable socio-cultural undertakings.[30]

Studies have found that ICTs to a small extent replaces social travels and face-to-face contact.[31] However, ICTs have also been found to complement social activities, and thus not lead to reduced travel demand.[32] ICTs could through online platforms where skills, goods and information is traded or shared improve access within the local area and examples include car sharing and local C2C sites.[33] However, even if uses of ICTs can cause reductions in travel demand, rebound effects are likely to arise as long as travelling is considered feasible.[34]

26 Hamer et al. 1991, Pendyala 1991, Balepur 1998, De Graaff 2004
27 Cohen-Blankshtain and Rotem-Mindali 2013
28 Golob and Regan 2001, Keskinen et al. 2001, Mokhtarian 2004, Visser and Lanzendorf 2004
29 Cohen-Blankshtain and Rotem-Mindali 2013, Moktharian 2004, Lee et al. 2009
30 Freathy and Calderwood 2013
31 van den Berg et al. 2013
32 Carrasco 2011
33 Botsman and Rogers 2011, Gansky 2010
34 Cohen-Blankshtain and Rotem-Mindali 2013, van den Bergh 2010

Chapter 3

Methodology

The research presented in this report is a case study as it investigates an entity, namely sustainable mobility in Tórshavn.[35] Empirical information about usage of ICTs and travel behaviour has been collected through a survey and interviews. Thereby quantitative and qualitative methods have been combined, which makes it possible both to accumulate general facts about a population segment and to get a deeper understanding of the reasons behind the actual behaviour.

The information will be used to analyse how travel behaviour is related to access to work, shopping and leisure. I will specifically look into how ICTs may improve access in order to achieve sustainable mobility. In order to determine how travel behaviour is influenced by variables such as use of ICTs it would be optimal to have an isolated system with one group of ICT users and one group of non ICT users. However, it must be recognised that this study has not been able to make such careful distinctions but has instead chosen a sample representing people acquainted with ICTs. Therefore, the impact of ICTs on travel behaviour may not be evident from the survey, but the interviews will, nevertheless, be useful to shed some light on how ICTs influence travel behaviour. It is further likely that variables such as affluence, household characteristics and proximity have a higher importance than ICTs when it comes to influencing travel behaviour.

Through reviewing literature, official documents and the media, the results will be put in a broader context. The survey and the interviews will further be supplemented by information gathered from personal correspondance with public institutions, employers, entrepreneurs and organizations.

3.1 Survey

Aim and structure of the survey

The survey aimed to collect data about what mode of transportation respondents used to journeys, their usage of ICTs and their opinion about transportation modes as well as ICTs. More specifically

35 Burns 2000: 459

data was collected about how people got to work, kindergarten, school, the supermarket and spare time activities, if they were telecommuting, doing leisure activities in their neighbourhood, shopping online, using online services, as well as respondents were asked about their opinions related to the bus service, biking infrastructure, online services and ICTs impact on travel demand. Together with the interviews the survey provides the basis for analysing the research question.

The **first section** in the survey included general questions related to gender, age, household income, household size, how many cars there were in the household and if respondents had a driving license. In the **second section** questions were concerned with what mode of transportation respondents had used most often for a different set of journeys the previous week. These journeys included journeys to the work place/educational institution, supermarket, organised spare time activities farther away than 500 m from the house, and eventual children's journeys to kindergarten, school and spare time activities more than 500 m from the house. In the **third section** respondents were asked about their opinion about the bus service, biking conditions and potential use of shared car. The question about the bus service was broad as the intention was to get information about the respondents' willingness to use bus more often if the bus service were better, and was not concerned with the respondents' opinions about the different characteristics of the bus service. In the analysis the results from the survey is complemented by the interviews and another survey, which has been conducted for the municipality and goes more in detail with *how* the bus service could be improved. The **forth section** is about use of ICTs and questions concern use of internet facilities such as Facebook, Skype, net-bank, official mailbox and e-shopping. Respondents are also asked about teleworking. In the **fifth section** respondents are asked questions about the local area. The aim is to get information about if respondents and their children spend leisure time in the local area, which is defined to be within 500 m from the house. The respondents are also asked questions related to access to goods and services from neighbours as a strong local community might contribute to a lower travel demand. In the **sixth section**, which also is the last section, respondents are asked about how they estimate that the internet has changed their travel demand, if they would want to work more from home and if they would like to be able to take care of more issues, such as buy groceries and send forms to authorities, through ICTs.

Collection of data

The online survey was attached as a link to a personal message, which was sent to members in four Facebook neighbourhood groups, with 266 members in total. This is only 2.25% of the total

population in Tórshavn aged between 18 and 70, which makes it a limited sample. Because neighbourhood related Facebook groups at the time when the survey was made were not very common, there could only be found four groups which had above 50 members. After the survey had been conducted there had, however, emerged three more groups, which indicates that neighbourhood groups on Facebook is a growing phenomenon. The reason why the survey was specifically sent to members of neighbourhood related groups on Facebook was because it was expected that members represented routinised users of ICTs and also had access to resources in the neighbourhood, which might make them less dependent on car use compared to people who were not accustomed users of ICTs.

While 96 people answered the survey, some instead sent a notification that they did not longer live in the area. If these are excluded the response rate was 39%. A response rate of around 50% is according to *Burns* considered acceptable for reliable results[36], which together with the small sample makes the data somewhat weak. The reliability of the data will be taken into consideration when analysing the results. It should, however, be had in mind that some of the members of the Facebook groups, who did not reply, might not actually be living in the areas, as well as some might have been under the age of 18. Everybody was informed only to answer the survey if they were living in the areas and had reached the age of 18. *Table 1* below shows how the response rate was in accordance to the four neighbourhoods, Maritu, Jørunda Torkils, Flat and Brúnni..

Responses according to neighbourhood				
Neighbourhood	Maritu	Jørunda Torkils	Flat	Brúnni
Responses	20	21	26	29
Total sent	62	60	71	73
Response rate	32.26%	35.00%	36.62%	39.73%

Table 1 Responses according to neighbourhood

The survey was also sent to a fifth neighbourhood, Velbastað, which is distinguished from the rest because it is situated outside of Tórshavn. Velbastað is a village which is 5 km from the city centre but is part of the municipality of Tórshavn. The aim was to compare if results from the village were remarkably different than the results from the other neighbourhoods, which all can be classified as suburbs with around 2-2,5 km to the central city. There were 78 members in the Velbastað Facebook group and 19 members replied, which makes the response rate for Velbastað only 24%. Velbastað will not be included in the general references to the results.

36 Burns 2000

The survey was designed using survey software SurveyMonkey and the data were processed using SurveyMonkey's analysing tool and in Excel. In order to increase the response rate, respondents could win a gift card from a supermarket. A reminder was sent around two weeks after the original message. In appendix I the questions of the survey can be found translated into English.

Illustration 1: The picture illustrates the city of Tórshavn with the northern city part Hoyvík and the southern city part Argir

The neighbourhoods

The neighbourhoods were situated in northern part of Tórshavn, either in or bordering to the city part called Hoyvík.

In Hoyvík there is on average a higher share of children, as well as adults in the age group 30-49 compared to the more central parts of Tórshavn, where a higher share of adults aged 20-29 and 50+

live.[37] Contrary to the more central Tórshavn area, where the population has slightly decreased since 2009, Hoyvík has since 2009 experienced a 8% population growth,[38] which most likely is due to recent expansions in the built area in Hoyvík.

In all neighbourhoods there were more females than males who had answered the survey and the average division was 63% female and 37% male. This high representation of females is only partly due to a higher share of women in the Facebook groups, where there were 55% females and 45% males. The most common age group was 40-49 years, see *figure 1*. However, the age division of the respondents differed depending on neighbourhood the lowest mean age being 37 years in the neighbourhood Jørundu Torkils and the highest being 48 years in the neighbourhood Flat.

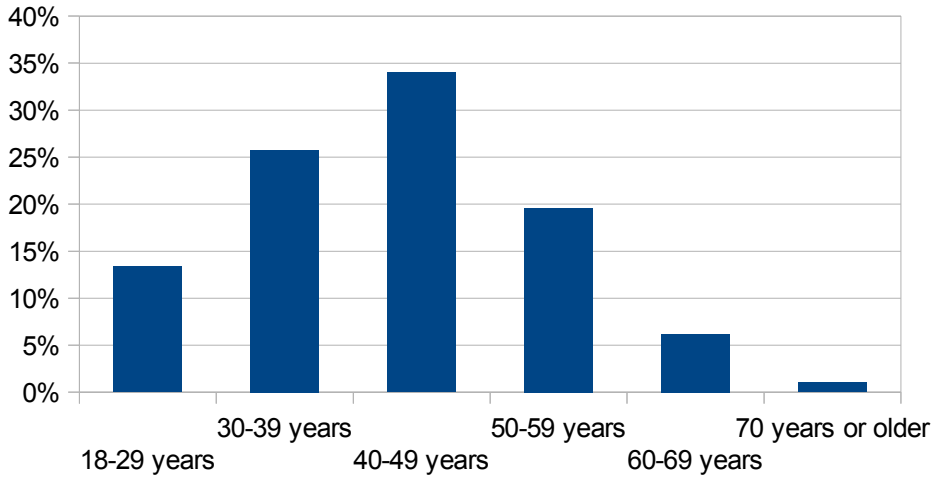

Figure 1: Respondents divided into age-groups

3.2 Interviews

The interviews were nearly all 30 minutes semi-structured interviews auto recorded over Skype. One was a face-to-face interview. The interviewees are grouped into “car owners”, i.e. interviewees living in households with at least one car, and “non car owners”, i.e. interviewees living in households without any car. The principal purpose with the interviews was to get an account of the different interviewees' reflections on their personal travel behaviour and use of ICTs. Even though

37 Tórshavnar Kommuna 2013a
38 Hagstova Føroya

the limited set of interviews may restrict the extent to which car owners and non car owners can be compared, there will further be made an attempt to point out apparent differences with respect to travel behaviour and use of ICTs.

Car owners were found amongst the respondents of the survey. Thus, all car owners lived in the Hoyvík area in the northern part of Tórshavn between 2,0 and 2,5 km from the city centre. There were held interviews with 6 car owners aged between 30-59.

Non car owners were, with the exception of one, who was found through the survey, found by directly approahcing people through personal networks. 6 non-car owners aged 28-49 were interviewed. Some lived in central Tórshavn, while others lived between 1 and 2 km from the city centre.

Chapter 4

Background to the case study

4.1 Case Study: Tórshavn

The Faroe Islands are situated in the North Atlantic and have a mild climate with mean temperatures the warmest month being 10.5° C and the coldest month 3.5°C.[39] The weather is humid and rainy with average precipitation in Tórshavn being 1.284 mm and there are yearly 273 days with rainfall.[40] Average precipitation is therefore higher than in Denmark (613 mm), in Stockholm (539 mm), and Oslo (763 mm), but not e.g. in Bergen where the annual precipitation is 2.250 mm. However, as it rains relatively many days during the year, the rainfall in the Faroe Islands is not very intense. Thus, the average precipitation on a rainy day is in Tórshavn only 4.7 mm, while in Copenhagen 5.4 mm, in Stockholm 5.1, in Oslo 6.8 and in Bergen 11.14.[41] The terrain is rugged with some low peaks and the highest point being 882 meters. The uneven landscape means that roads are commonly either uphill or downhill.

Tórshavn is the capital and the largest city of the Faroe Islands. The population is 18.200 inhabitants in the city encompassing the areas Tórshavn, Hoyvík and Argir. Thus, the city is small compared to many other cities around the world, and the length from the northern to the southern city border is only 5,5 kilometres. The urban population density is with 1.596 people/km^2 low compared to other Scandinavian cities such as Malmö (3.651), Stockholm (3.597) or Oslo (3.300). A prominent reason for the low population density being that many people to live in single family detached houses while multi storey houses are not common.[42] Furthermore, there are large green areas in parts of the city.

Research on urban mobility is frequently made in major cities where several hundreds of thousands inhabitants daily travel to work, shopping and leisure. Such cities typically experience problems with congestion, air quality and significant CO2 emissions due to traffic. These problems may not

39 Danmarks Meterologiske Institut 2014
40 Danmarks Meterologiske Institut 2014
41 Danmarks Meterologiske Institut 2014
42 Tórshavnar Kommuna 2007

be significant in Tórshavn, due to a small population and density.[43] However, high priority is given to car use in transport planning. Studying travel behaviour in a city like Tórshavn is interesting as only little research exists on sustainable mobility in smaller cities.

National transportation policies

In 2010 there were in the Faroe Islands 0.41 passenger cars per person. This lies close to statistics in neighbouring countries Denmark (0.39 cars/capita), Norway (0.47 cars/capita) and Sweden (0.46 cars/capita).[44] *Figure 2* shows how many cars there are in the respective household sizes in the Faroe Islands.[45] 84% of all households have a car and 26% of households with two persons have two cars or more.[46] In comparison, 60% of all Danish households have a car (2011).[47]

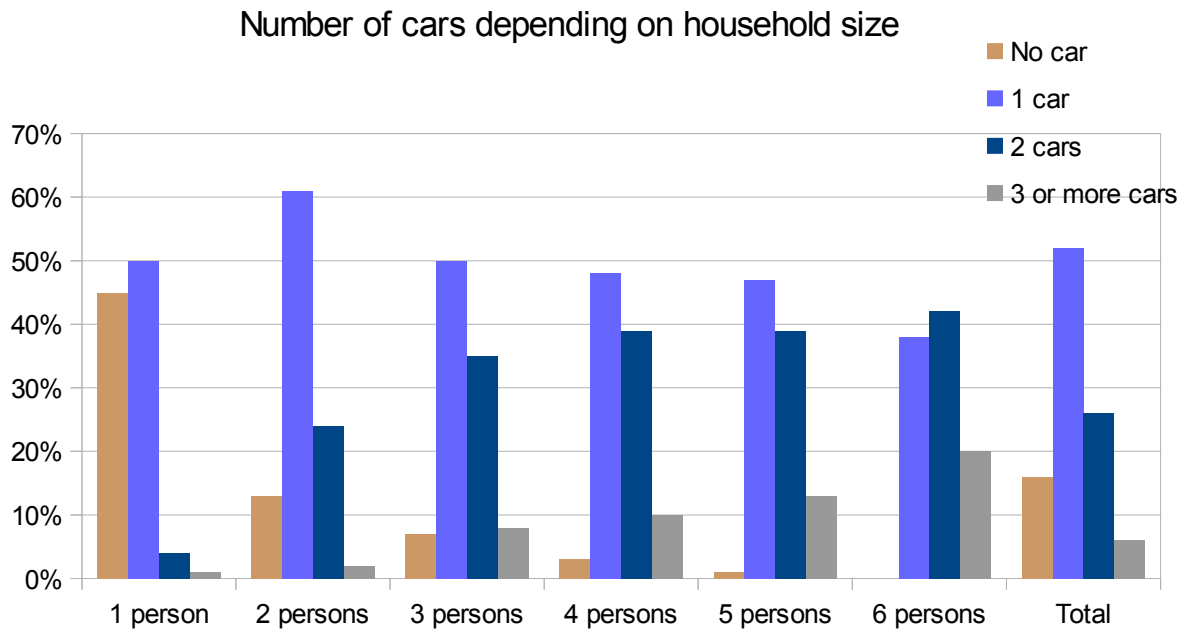

Figure 2: The car division according to household size, data from 2012

Variations between the countries are likely due to a combination of factors such as car-related costs and policies, topography and biking culture. Furthermore, as Faroese households tend to consist of more people than households in the other countries, there will be more people around one car in the

43 Kringvarp Føroya 2014a, Jákupsdóttir 2013
44 The World Bank Group 2014a
45 Hagstova Føroya
46 Hagstova Føroya 2013
47 Danmarks Statistik 2013

Faroe Islands.[48]

The political debate in the Faroe Islands has over many years been concerned with an ongoing emigration from villages to the capital. As the traditional role of the village as a productive unit has been altered, production, education, services and leisure have increasingly been centralized to a few locations, and many villages have become "dormitory towns".[49] This dependency of villages to main areas has resulted in a strategic focus on regional development and merger of municipalities.[50] In order to avoid emigration from villages, focus has been on improvements in infrastructure, so that villages are connected to main areas and cities, and Landsverk, the Faroese road administration, envisions the whole of Faroe Islands as one city.[51] Villages and islands are connected by nineteen tunnels and one bridge, and further two underwater tunnels are planned. Even if distances are reduced by improved infrastructure, rebound effects are likely to occur, as more people are able to commute and more will settle in the villages, which heavily rely on commuting in order to thrive. Over the last 10 years car ownership in the Faroe Islands has increased by 24%,[52] and the number of people commuting more than 21 km to and from the workplace in the Faroe Islands increased 25% between 2005 and 2010.[53] To further improve access to the labour market independent on where people live, a travel refund is paid to everybody who commutes more than 21 km to and from their workplace.[54] Commuting is perceived as a opportunity for villagers not only the have access to work but also to take part in an urban culture, while living close to nature and being part of a local community.[55] However, the high energy use and related emissions from transport stand in stark contrast to the benefits from commuting.

Unlike in neighbouring countries, private car ownership is in the Faroe Islands estimated to be necessary in order to avoid social isolation, which is why the national poverty threshold set at a level that includes expenses related to car ownership.[56] Thus, car use has become fundamental to the daily conduct of people living in the Faroe Islands and by recommending that car ownership is required in order to maintain an accepted lifestyle, policies that aim to ensure social equity further reinforce and reproduce the importance of car use, and thereby intensify both car use and social

48 Hagstova Føroya 2013
49 Finnsson and Kristiansen 2006, Holm 2004
50 Finnsson and Kristiansen 2006
51 Landsverk 2012
52 Hagstova Føroya
53 Landsverk 2012: 40
54 TAKS 2014
55 Holm 2004
56 Arbeiðsbólkur um fátækramark 2014: 21

norms related to car use.

Alternatives to personal car use in Tórshavn

In Tórshavn the city buses became free in 2006 and depart every 20 minutes during the day. Saturday and evenings departures are however only once every hour, and evening Saturday and all Sunday there is no bus service. The bus is mainly used by teenagers and people who travel to and from work, but very few adults use the bus evenings and Saturday.[57] Biking lanes are now made along with new infrastructure, but most roads do not have biking lanes and people who bike are obliged to be on the road together with the car traffic. Somewhere, however, half of the pavement, originally intended for people on foot, has been marked as biking lane. Walking is encouraged by an extensive network of footpaths throughout the city, which in many cases make walking distances shorter than driving distances.

The inner part of the city is older and has not been planned around car use. Therefore, streets are more narrow and the driveways are smaller than in the newer parts of the city. In the inner city most residents further have access to shops, services and leisure in the local area, while the newer city parts are less densely built and vast spaces are dedicated cars. Because of the differences in urban design residents living in the inner city are due less likely to own a car than residents living in the outer parts of the city. The new and first car sharing company, LetsGo Tórshavn, also has its only car parked in the inner city. The building codes for Tórshavn require a sizeable outdoor area to be attached to each property, and there should also be made space for public areas for children to play of 400 m^2 for each 20 houses not farther away than 75 m^2 from the farthest house.[58] Also there must be an activity area of 2000 m^2 for every 200 houses no longer than 150 m from the farthest house and at least 10%, with roads not being included, of a total area must be specifically dedicated to outdoor play.[59] These building codes ensure that there is vast space in local sites for outdoor leisure. Kindergartens, elementary schools and churches are found in all parts of the city, but nearly all cafés and restaurants are centred in the city centre, where also many office buildings are located. The city is thus highly divided with certain areas dedicated to work and leisure and other areas intended for residing, and only in the central city functions are integrated. Three of the seven supermarkets in Tórshavn are further situated outside of residential areas, but in strategic locations where many cars pass, and other types of shops are usually either in the city centre or at more

57 Joensen and á Rógvi 2009
58 Tórshavnar kommuna 2013:15
59 Tórshavnar kommuna 2013:15

remote locations that also are easily accessed by car.

90% of all households have internet,[60] and while the car used to be a very popular place to hang out for bored young people[61], times are changing, and ICTs are now very popularly used in the spare time.[62] However, none of the supermarkets yet offer online grocery shopping, and it is only possible to send a limited selection of forms to public institutions online. The opposite is true for bank services, purchase of flight tickets and mobile phone credit where people through economic incentives are encouraged to use the online services. The national post company, Posta, is further trying to minimize traditional post by promoting online communication between individuals, companies and official institutions. Part of this strategy is the personal official e-mail "Mínboks", which became available in 2013, and already replaces physical letters with digital post for 26% of all the population over 15 years.[63]

Climate Politics

The Faroe Islands are not part of the Kyoto protocol as an independent nation, but under the auspices of Denmark, which means that emissions are reported, but reductions are not obliged.[64] Attention to climate change was however high prior to COP15 in Copenhagen in 2009, when the Faroese Parliament unanimously adopted a climate policy with the target of at least 20% reduction of greenhouse gasses (GHGs) in 2020, based on 2005 levels. Total emissions in 2012 were 870.000 ton CO2 equivalents[65], which was 18,0 ton CO2 equivalents per capita. This is high compared to Sweden (5,6), Norway (11,7) and Denmark (8,3).[66] In 2012 the largest share of total Faroese GHG emissions were from fishing vessels (42%), which is the country's main industry,[67] while road transport accounted for 11%.[68]

The goal in the transport sector is to reach a 50% reduction of emissions from land based transportation through encouraging use of more efficient diesel and gas vehicles, encouraging use of vehicles that use renewable energy sources, make bio-fuels available, improve public traffic and

60 Hagstovan 2013
61 Gaini 2009
62 Gaini 2008, Tórshavnar Býráð 2005
63 Mínboks 2014
64 Nielsen et al. 2014
65 Umhvørvisstovan
66 Data from 2010 - The World Bank Group 2014b
67 Umhvørvisstovan 2011
68 Nielsen et al. 2014

make an online ride sharing platform.[69] Many of these initiatives rely on technological development in the car industry promoted by EU regulations, and electric cars have due to the terrain and weather conditions not had success in the Faroe Islands.[70] Overall, strategies to attain reductions in emissions have been scattered and weak[71] and it has been difficult to get political support for proposals implying higher expenses on car use.[72] In 2013 emissions from road transport were higher than in 2005.[73] The little success of climate policies could partly be due to a limited inclusion of civil society in climate politics with the media only giving vague and superficial attention to the gravity of climate change.[74] A tendency to display hostility to a shift to renewable energy has even been noted.[75] A P.hd. study investigating the media coverage of COP15 and COP16 concluded that "*by reading Faroese newspapers and watching Faroese television news, the average citizens would be unlikely to be well-informed about climate change and its ethical dimensions*".[76] Nor did coverage "*challenge the fundamental notions of neo-liberalism and ever-increasing consumption*".[77]

Similar to other developed countries[78], the political rhetoric has been permeated by economic growth and in a speech prior to COP15, about the renewal of the Kyoto protocol, the prime minister, Kaj Leo Holm Johannesen, talked about the necessity to make the 20% target by using following arguments: a) we must take responsibility of our contribution to global warming, b) "green economy" may become important and can create new jobs and industries that are crucial for the economy, c) no action will result in low demand for Faroese export if the goods are not classified as sustainable, d) by not acting the economy will not get an advantage of technological development related to energy efficiency and clean energy sources, which will harm competitiveness, e) because of rising oil prices we cannot afford business as usual and we might just as well be among the first-movers and get the advantages this will bring, f) to brand the Faroe Islands as a "climate nation" to the benefit of the Faroese people and the industry.[79] Environmental concerns are only mentioned briefly and instead focus is on economic development, which displays how ecological modernisation has influenced Faroese climate politics.

69 Ministry of the Interior 2009
70 Posta 2014, Jákupsdóttir 2013
71 Jákupsdóttir 2013
72 Bertholdsen 2009, Bertholdsen 2014
73 Nielsen et al. 2014
74 Laksá 2013
75 Laksá 2013: 264
76 Laksá 2013: 265
77 Laksá 2013: 269
78 Bäckstrand and Lövbrand 2007
79 Løgmansskrivstovan 2009

Chapter 5

Results

5.1 Results from the Survey

First the data about travel behaviour and the interest to use public transportation and bike will be presented. Then the data about use of ICTs and the interest for more possibilities related to ICTs will be presented and finally, travel behaviour and car access will be related to different variables such as income, household type and facilities in the local area.

Travel Behaviour

The average number of cars per person in the areas where the survey was made was 0,44. This is a bit higher than the national average, and is most likely because the neighbourhoods were suburbs, as well as very few of the respondents were above 70 years, as elderly people have a significantly lower car availability than the younger group.[80]

The survey showed that car was by far the most popular transportation mode for journeys to work (85%), journeys to spare time activities farther away than 500m (89%) and journeys to the supermarket (77%). Next to car use, walking was the most common transportation mode and 22% most often walked to the supermarket. There were, however, very few who regularly biked and used bus, see *figure 3* on the next page.

80 Jacobsen et al. 2010

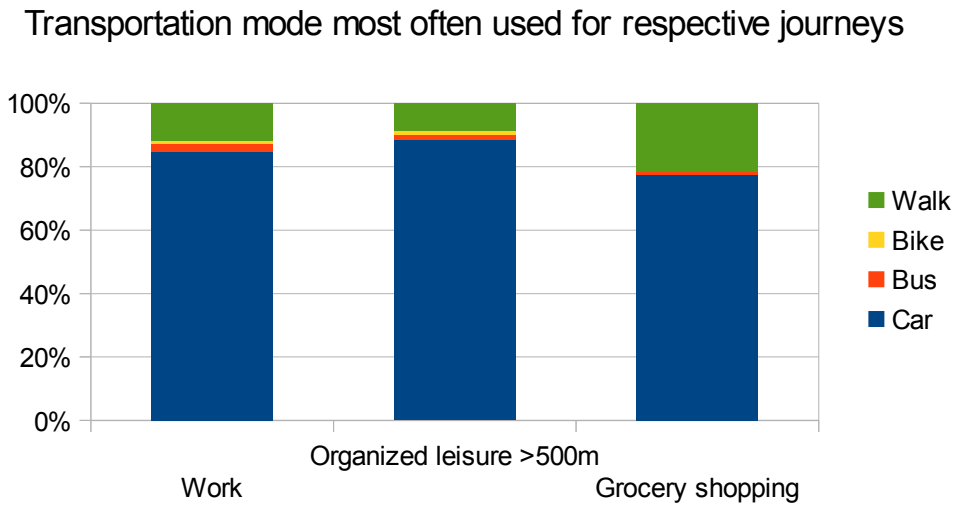

Figure 3: Transportation mode most often used for journeys to respectively work, organized leisure activities more than 500m from the home and grocery shopping

47% responded that they would use the bus more often if the bus service was better and 55% expected that their children would use the bus more often if the bus service was better. 43% similarly stated that they would bike more often if biking lanes were better and 58% expected that their children would bike more often if biking lanes were better. Thus around half of the respondents did not have an aversion against using bus or biking, and would make use of alternative transportation modes if conditions were better. However, only 12% would consider to have one car less if they had access to a shared car within 100m from where they lived. This indicates that very few are willing to give up on their car.

Use of ICTs

99% of the respondents were daily using the internet, 90% were daily on Facebook and 37% weekly used Skype. *Figure 4* on the next page shows how often respondents used Skype. Whereas 97% used internet bank, only 55% had the official e-mail box, Mínboks, which, nevertheless, is significantly higher when compared to the total population (26%). 79% of the respondents had tried to buy online and 10% had bought food online.

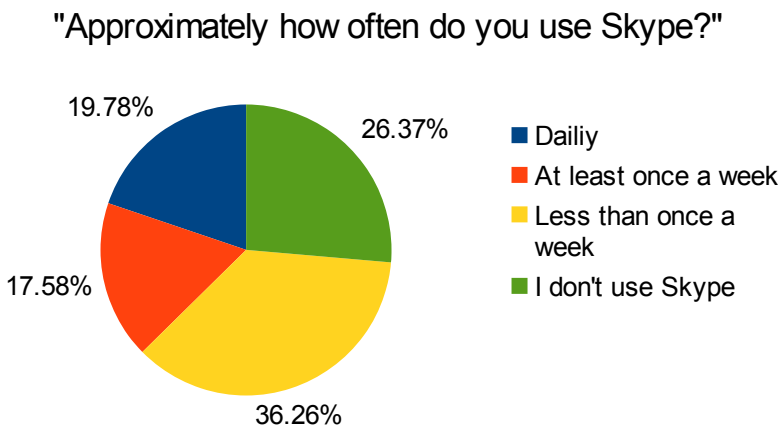

Figure 4: Usage of Skype

88% replied that they used internet in their work and 12% worked at least one day per week from home. Of those who used the internet in their work, 22% worked at least one day per week from home. 27% would like to work more from home, but if only looked at those who used internet in their work and were able to work from home, 36% of the respondents who did not already work from home would like to work more from home, and 38% of the respondents who already worked from home would like to work more from home, see *Figure 5*. 80% of the respondents, who worked from the home at least one day per week, used the car when going to the supermarket.

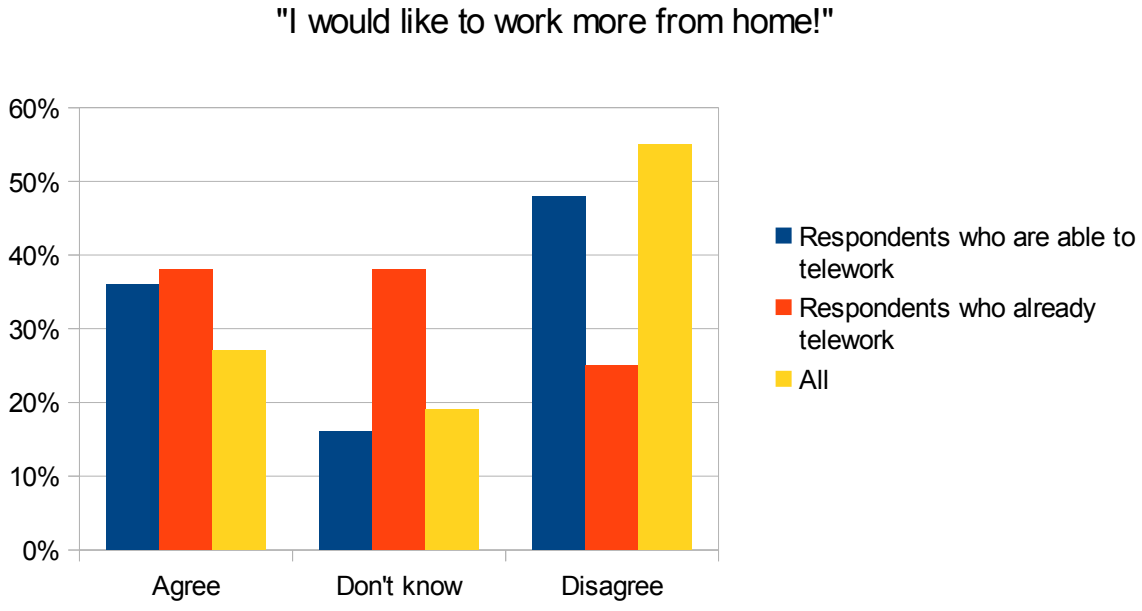

Figure 5: Replies of respondents who respectively were able to work from home and use internet in their work, respondents who already worked from home and all respondents

62% of the respondents wanted more online services to be available, such as to send forms online. Of the respondents who lived more than 500m from a supermarket, 37% would like to be able to buy groceries online.

23% of the respondents estimated that the internet had decreased their travel demand, while 16% estimated that the internet had increased their travel demand. However, 41% of the respondents did not know if if the internet had reduced their travel demand, while 36% disagreed that the internet had reduced their travel demand. 50% disagreed that the internet had increased their travel demand. See *figure 6*. As the questionnaire contained questions concerning internet services such as net bank, e-shopping, Skype and Facebook, the respondents might have been influenced to view the internet as a medium, which reduces travel demand instead of a medium that can increase travel demand. Respondents who worked from their home and who had bought food online were especially inclined to think that the internet had reduced their travel demand.

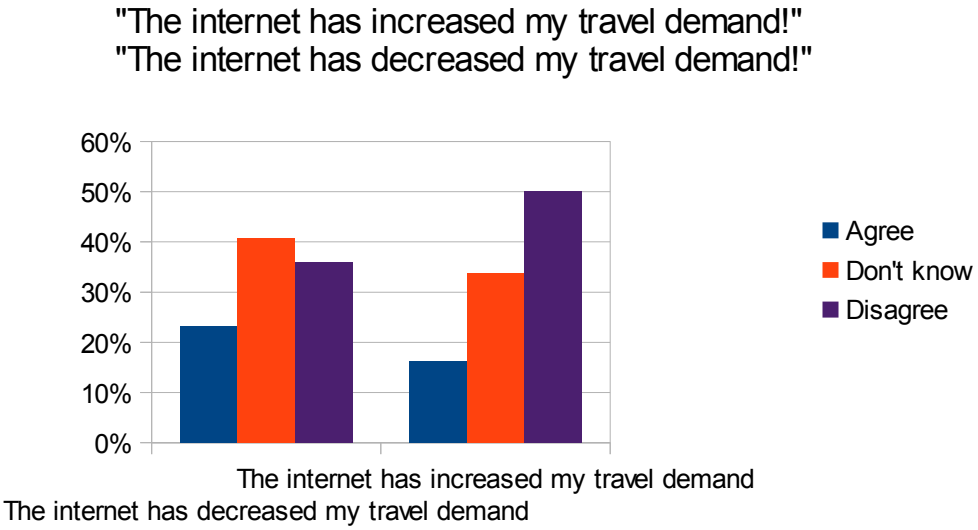

Figure 6: Replies about how respondents estimated the internet had changed their travel behaviour

When results related to use of ICTs were compared with the results from the more remote village Velbastað, there were not many notable differences. However, in Velbastað 50% of the respondents, who used internet in their work, worked at least one day per week from their home, compared to 22% in the other neighbourhoods.

Variables affecting travel behaviour

The availability of cars had an impact on transportation mode. Both the number of cars per adult, and number of cars per person was higher for respondents who used car to work compared with respondents who used other modes of transportation for to work. *See figure 7*, which shows that respondents who used car for journeys to work had a car access of 0.88 cars/adult and 0.61 cars/person, while respondents who used alternative modes of transportation for journeys to work had a car access of 0.47 cars/adult and 0.27 cars/person.

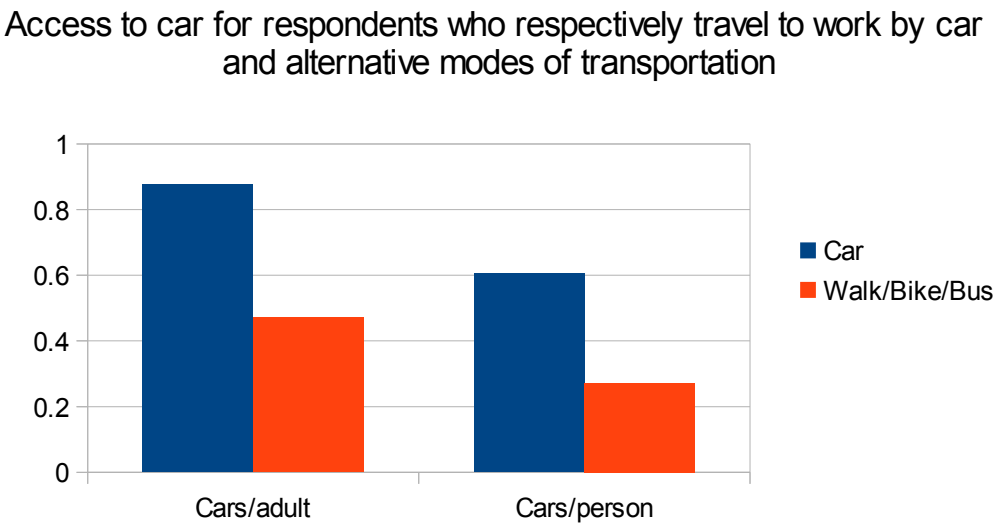

Figure 7: Car availability defined as respectively cars per adult and cars per person related to what transportation mode is used for journeys to work

Households with a higher income had a higher access to cars than households with a lower income. *Figure 8,* on the next page, shows that households of two adults with an household income over 601.00 DKK have a access to 0.81 cars /adult, while households of two adults with an household income below 601.000 DKK have access to 0.63 cars/adult.

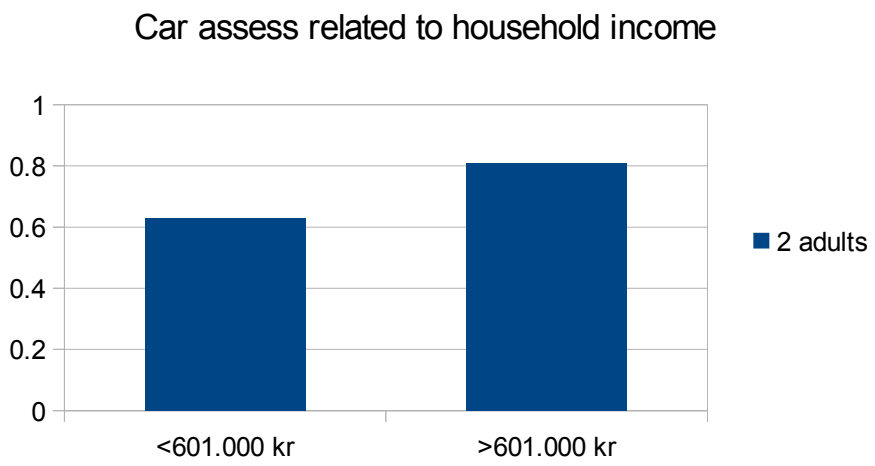

Figure 8: Car access (cars/adult) related to household income in households with 2 adults

90% of the respondents who lived more than 500m from the supermarket would most often use car when they were buying groceries. Only 57% of the respondents who lived less than 500m from the supermarket used car. Thus, there were more who walked to buy groceries, if there was a supermarket in the local site. Also children living close to a school were less likely to get to school by car compared to children that lived farther away to a school (37% compared to 79%). With regards to taking younger children to and from kindergarten 78% used car. *See figure 9*.

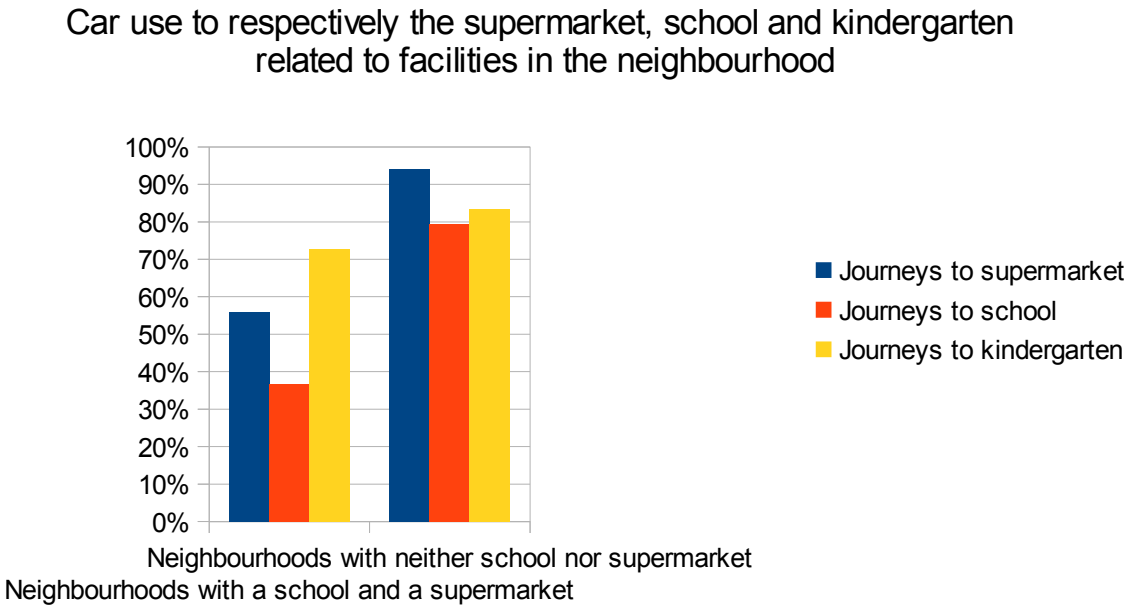

Figure 9: Car used for journeys to respectively the supermarket, school and kindergarten related to neighbourhoods with supermarket and school in the local areas and neighbourhoods with nu supermarket or school in the local area

In two of the neighbourhoods there was a supermarket and a school in the local area. In these neighbourhoods there were relatively many children, as well as many households with only one adult. Because all households with children had at least one car, the relative access to car per adult was high. However, when children were included, the car access per person was lower than in the other neighbourhoods.

In the neighbourhood with the higest access to car, in which households also had the highest income, there were relatively many children and there was no supermarket or school.

In the other neighbourhood, which neither was close to a supermarket or school but where there were relatively few children, there was a significantly lower access to car. Therefore, the results indicate that apart from income, car ownership also relates to if there are children in the household. As all low income households with only one adult and children have a car, car ownership is prioritized even with little financial means. *Figure 10* shows that car access increases if there are relatively many children in the household, and in the neighbourhood Maritu, where the concentration of children is highest, households with a low income level have a higher car access than households with a high income level.

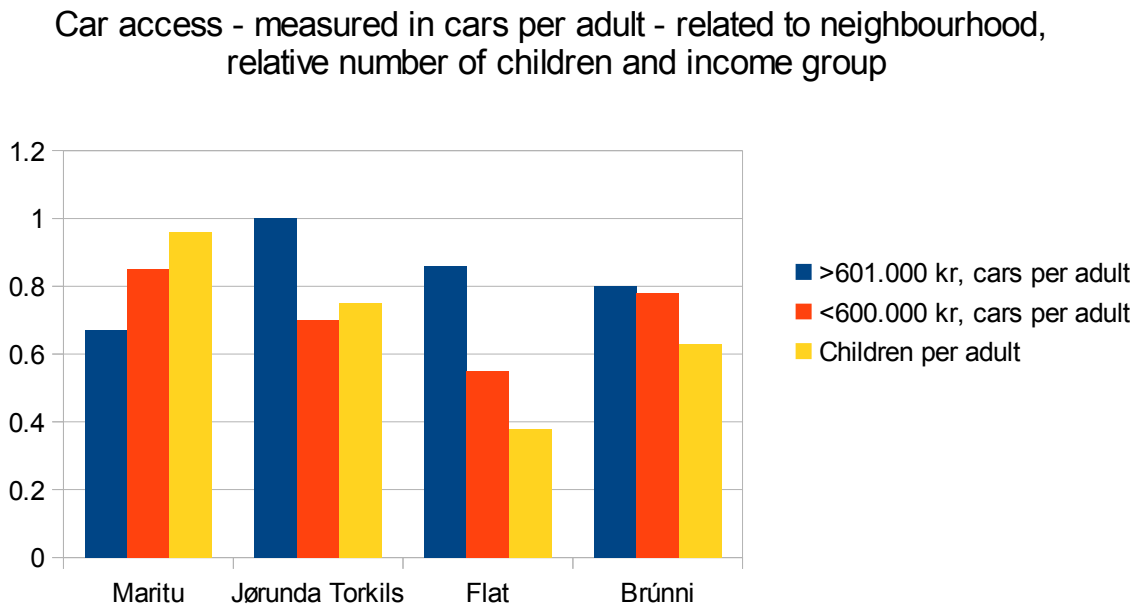

Figure 10: Number of cars per adult and children per adult divided into neighbourhoods and income group.

5.2 Results from the Interviews

The interviews provide qualitative information about a range of motives behind the explicit behaviours. Even when car owners and non car owners are compared to each other when it comes to travel behaviour and usage of ICTs this must not be understood as an attempt to view the results in a quantitative context but rather as a way to explore the different characteristics of respectively the interviewees with car and interviewees without car.

Interviewees with car

Car owners usually made other journeys in relation to their work journey. It was common to deliver children in kindergarten and school on the way to work, and go to the supermarket and pick up children in the kindergarten on their way home from work. Some additionally went to the supermarket Saturday. Some interviewees used other transportation modes for work and leisure related journeys. One biked very much, another usually used bus to work and most walked now and then.

Reasons for having a car were that is was easy and quick. Some also mentioned that car was convenient when it was raining. One was very dependent on the car, which she used when going to sports, visiting friends and for work. No car would mean that journeys had to be planned and paying friends spontaneous visits would not be possible. Some also said that they would probably not visit relatives as often, some living in other villages, if they did not have a car. The car was further important when buying groceries. Two interviewees who did not have children living at home any more said that the car was not as important any longer as there were no children. Some interviewees felt that they used the car too much and walked too little. One said that she would not have any problem with selling the car. She would instead bike more and use taxi in case of anything special. Another said that if it wasn't for the weather, the car would not be so important. Some thought that they would adapt if they did not have a car, and that it would not be a very big problem. They would instead use the bus more, walk more, bike more and if necessary take taxis. Heavy goods could be bought online if this service was available.

Some car owners were interesting in e-shopping as a supplement to their journeys to the supermarket. They mentioned bread, fruit and regular items as things that they would like to have

delivered regularly. However, one wanted to buy special food items in the stores and another also wanted to feel the fruits before she bought them. Some had used the internet to get information about matters in the neighbourhood and to buy goods. Those who were able to telecommute would not want to do it as they felt that they were more useful at the workplace and they the liked face-to-face contact. One said that she would not have the required self-discipline.

Interviewees without car

There could be distinguished two main reasons for not having car. One was was limited financial means, which meant that respondents could not afford a car. These interviewees would, nevertheless, like to have a car, as they felt that they were very dependent on others with car. Some interviewees, however, did not fancy a car, liked to walk and did not feel that they needed a car in their day-to-day life. One of the interviewees specifically mentioned ideological reasons for being the motivation for not having car.

Some of the interviewees without car tended to make use of cars of friends or family. One would sometimes ask friends she met at the supermarket if they could drive her back home with her groceries and another would drive together with his football trainer after having attended sports activities in another village. Before the bus service improved, the child of one interviewee also used to be driven by a neighbouring child's parents for school. In return he would give the neighbours fish and sheep meat. Those who did not have a car due to their financial situation made much use of cars of parents or siblings, especially for leisure activities and grocery shopping. One said that she felt that she was a nuisance to her parents and sisters, and would use car sharing if it was available and not too expensive.

Non car owners frequently walked, biked and used the bus and, generally, the interviewees without car did not make less journeys to work and leisure compared to the interviewees without car. However, some thought that they would visit friends more often and be less on Facebook if they had a car. A car would also make some less dependent on others with car. All used ICTs and some would like to telecommute, while one already was telecommuting. One never bought clothes at the conventional stores, but only online. This was more convenient as it reduced her travel demand as the clothes would arrive at her door. Two of the interviewees, which did not have a supermarket in the local area, would buy groceries online if it became possible as it would make shopping easier and make them independent on using the car of relatives. Another had an agreement with a

supermarket to deliver the groceries at his home. One sometimes organised ride sharing on Facebook if she and others went for walks in the mountains. One who lived centrally, did not see why there would be a desire to use ICTs instead of making physical journeys - ”*but I looove walking. If I can find any excuse to take off I will*”. Overall, non car owners made significantly more use of non-motorised and public transportation compared to car owners. As non car owners were not as mobile as car owners, some made use of ICTs to connect with friends and for shopping. Some lived centrally and were able to shop in the local area.

One interviewee with no driving license said that it was difficult for him to find a job, as many employers required that people had a driving license. Another, who sometimes needed to travel in relation to her work, either walked or used the bus for job-related journeys, which was not a problem for her employer.

Overview of characteristics

In *table 2* characteristics of car owners and non car owners are compared. Characteristics relate to general information about the interviewees as well as travel behaviour and usage of ICTs.

	6 interviewees with car	6 interviewees without car
Age	30-60	27-50
Number of children in household	0-3	0-3
Number of adults in household	2-4	1-2
Distance to the supermarket	700-1000m	100-700m
Distance to the workplace	1000-3000m	0-3000m
Irregular working times	Yes	No
Would like to work from home	No	Yes
Leisure related trips pr. week	Around 2-5	Around 2-6
Journeys with car	4-7 days weekly	0-4 days weekly
Journeys with public transportation	0-3 days weekly	0-6 days weekly
Journeys with bike	0-5 days weekly	0-7 days weekly
Journeys on foot	1-5 days weekly	6-7 days weekly
ICTs influence on travel	Neutral or increased (able to	Neutral or reduced (interact

demand	purchase more travels and be informed about events)	with friends, replaces in-store clothes shopping)
Desire to buy groceries online	Some	Some

Table 2 Overview of characteristics of car owners and non car owners

Reasons behind habits related to travel and ICTs

In *table 3* opinions about transportation modes and usage of ICTs are presented. Focus is not on differences between car owners and non car owners.

About using bus	Interviewees were generally positive about the bus service, with citations being "*I like using bus*". "*The bus is a good initiative*". "*Using bus is quicker than walking*". "*It is easy to use bus*". Some also expressed a bad conscience about their substantial car use. "*I just don't get around to do it*", "*I really ought to use the bus more often*". However, downsides were also expressed, the most prominent being that few bus departures made it difficult to use the bus evenings and weekends. Some also mentioned that the bus did not fit their working hours late evenings and early mornings. It was common to buy groceries on the way home from work and this was by some considered inconvenient doing if they were using bus. Reasons were that it would for some consume more time as a supermarket might not be next to the workplace and they would have to carry the bags with them. Some also said that they preferred to sleep a bit longer in the mornings instead of leaving home early to catch the bus.
About biking	Some interviewees biked regularly, some occasionally biked, while others never biked. One interviewee did not own a bike but had considered to get one. Interviewees who biked considered biking quick getting used to and not very tough. Expressions were "*I love biking*", "S*ometimes you have to be careful with regards to traffic, but it is not a big problem*". Others said that it was difficult to get started, demanded too much effort and was not as easy as using car. One said that she did not want to be wet when coming to work. Another that it would be too tough as it was all uphill to get to her workplace. Some,

	however, would like to bike more and also bike with their children, but just hadn't gotten to it.
About walking	Interviewees liked walking and some also liked to walk as a leisure activity. Some were discouraged to walk if the weather was bad. Two parents thought that their children were too young to travel on their own to the school, which was located around 1,5 km from their respective homes.
About using car	Using car was quick, easy and convenient. Some said that car was necessary for their daily travels as it saved time. One said that he liked using car. The weather was also mentioned by some as a reason why they preferred using car. Some further said that distances to work and shopping were long and some said that having car made it possible to visit relatives more often. Some, however, also said that the main reason why they made the different journeys with car was because of routine. Some mentioned that car use was expensive. "*There is no reason to have a car when I can do without. It is also very expensive*". "*If I could afford a car I would get one*". It was also common not to feel an urge to use car. "*I did not get a driving license until I was quite old, and even when I had it I did not use car very much*". "*The car is not so important any more as it was when there were children in the home. Our car is old now and I don't think that we will get an other car when the one we have now will stop working*". "*I have never had the need to have a driving license or car*". One said that the owning a car changed his behaviour and he did not wish to live a lifestyle that included car ownership. "*It was an eye-opener when we found ourselves using car to the bakery, which is right next to our home*".
About buying food online	Some interviewees though that online grocery shopping would make the daily journey's easier. "*It would make in-store grocery shopping easier as it would not be necessary to buy so much*". "*Shopping bags would become lighter*". Some mentioned at the service had to be flexible so that somebody was at home when delivery was made. Some also mentioned that the delivery service should not be too expensive. Some, however, were sceptical towards not being able to go to a physical store. "*I like to buy the food from people, it is not the same doing it through a machine*". "*I want to be able to take the fruit up and touch it*". Some who lived close to a supermarket did simply not feel a need to buy groceries online "*I have no reason to*

	buy food online as I can just go to the supermarket".
About online shopping, service and leisure	Some bought clothes and different other kinds of items online. Also credit for mobile phones and flight tickets were commonly bought online as this was more convenient and cheap than doing it at service offices. One mentioned that she bought Christmas presents online. Reasons for shopping online were a broader selection and the possibility to buy special items. It was further cheap. Some also said that the goods were delivered directly at the door and that it was convenient as journeys could be saved. Some interviewees were concerned with that ICTs created worse service and replaced human contact. One who did not have a profile on Facebook though that it would deprive her of her time and another who neither was on Facebook was not found of the concept.
About tele commuting	Interviewees who would like to telecommute desired more flexibility and the possibility to better manage personal time. Those who would not want to telecommute would not like to be without the real contact and the social environment at the workplace. "*Face-to-face interaction important*". "*It is important for the others in the workplace that I am present*". One thought that she would be less effective if she was working from home.

Table 3 Reasons behind behaviour for both interviewees with car and interviewees without car

Chapter 6

Analysis

In the following chapter the results from the survey and the interviews will be analysed. I will use earlier research, information obtained from personal correspondence and publicly available material to interpret the results and to put them into context.

6.1 Travel behaviour

Public transportation

While very few of the respondents who answered my survey used public transportation as their main transportation mode, an other study found that 7% of the population in Tórshavn over 18 years used the bus a typical weekday.[81] Thus, people living in the Hoyvík area might use the bus less frequently than the average population. Also the types of the questions differ and it is not certain that 7% use public transportation as their preferred transportation mode. The interviews showed that many frequently made different errands such as grocery shopping and picked up children at the kindergarten as an extension to the work journey. Using public transportation for all these supplementary journeys was perceived inconvenient, and interviewees were neither eager to carry around with shopping bags. Main reasons for not using public transportation for leisure related journeys were that the bus service was poor in the evenings and at weekends.

In other cities high levels of congestion and subways may make public transportation quicker than car use. However, the bus, which is the only mode of public transportation in the Faroe Islands, is a slower way to get around compared to car, and might mainly be preferred to car as it is a cheaper and more social way to get around.[82] This does, nevertheless, not seem to stop people from using car, as even though the municipality of Tórshavn in 2006 made it free to ride with the buses and in 2007 increased departures during typical working hours, there has only been a small increase in people using bus.[83] People using the buses are mainly young people in the age group 14-18 and

81 Joensen and á Rógvi 2009
82 Magelund 1997
83 Joensen og á Rogvi 2009

women.[84]

The bus was however viewed positively by most respondents, and some admitted that routine is partly the reason why they do not use the bus more often. The only critique mentioned at the interviews was that there were too few departure times early mornings, evenings and weekends. Similarly, other studies of user satisfaction show that users are generally content with the bus.[85] It is interesting that 47% of the respondents said that they would be likely or very likely to use the bus more often if the service was better. It can be assumed that respondents would mainly like more departures at weekends and in the evenings, as that was a main desire amongst interviewees. Also other reasons such as concerns about punctuality and uncertainty about departure times due to poor information could make some people use car instead of bus.[86] The high share of people that demand a better bus service could indicate that some may be willing to have fewer cars if they experience a high mobility by alternative transportation modes. However, an improved bus service might not be enough to get most people to use car less. My results revealed that people who used alternative transportation modes had a lower access to car compared to people that used much car, and this relationship is also found in another study of bus use.[87] This indicates that the bus and other alternatives to the car are not chosen when people have easy access to car. As young under 18 do not hold driving licences, they must be expected to have a low access to car, which is likely the reason why people under 18 are the most frequent bus users. The complementing relationship between car access and car use is important to note, because it means that strategies to promote sustainable mobility should seek to reduce private car ownership.

Biking

Very few of the respondents biked, which also is supported by other studies.[88] In Norway, where the topography resembles the Faroe Islands, 22% never bike and 30% bike weekly, compared to 70% who never bike and 4% who bike weekly in the Faroe Islands.[89] This is a large difference, and may reflect a low emphasis on biking in land use planning in the Faroe Islands.

Interestingly, many of the interviewees either biked, used to bike or had plans to bike. Reasons for

84 Joensen and á Rógvi 2009
85 Joensen and á Rógvi 2008, Joensen and á Rógvi 2009
86 Joensen and á Rógvi 2009
87 Joensen and á Rógvi 2009
88 Nordiska Trafiksäkerhetsrådet 2010, Joensen and á Rógvi 2009
89 Nordiska Trafiksäkerhetsrådet 2010

not biking were mainly that it was not as easy as using car, some considered it too tough and some were held back because the risk that it might rain. Similar arguments were also presented by participants in focus group interviews in a study about commuters.[90] However, interviewees who biked did not perceive it to be hard, and asserted that once people got started biking would quickly get easy. This also seems to be the opinion among other people who bike.[91]

43% of the respondents would be likely or very likely to bike more often if there were better biking lanes. This reflects a substantial interest in biking, which according to the police and the largest bike retailer in Tórshavn, UNO, has been growing the latest years.[92] It is likely that the recent interest to bike is sparked from sustainable mobility trends in neighbouring countries, and may have accelerated because of a focus on biking by diverse personalities, amongst them the Faroese prime minister.[93] The desire for improved biking infrastructure indicates that respondents perceive it hazardous to bike under current conditions. This is also expressed in a debate in Facebook group "Safety on food and by bike". An internal report by the municipality of Tórshavn further shows that parents are concerned with unsafe conditions for children travelling on their own.[94] Two of the interviewees with children of school age said that their children were too young to travel alone to the school. They did, however, not directly mention safety as a concern. 58% of the respondents who had children said that their children would bike more often if biking lanes were better. Thus, one reason why many parents escort their children to school and leisure activities is likely due to hazardous circumstances for people who bike and walk.

Walking and urban design

Walking was the preferred way to get around next to the car, and respondents who lived close to a supermarket and a school walked more than respondents who did not live close to such facilities. Therefore, access in the local site encouraged people to walk. Most of the 13 non car owners, which I found in relation to my research, also lived close to a supermarket, and popularly in the inner city, centrally to shopping, service and leisure. The importance of access in the local area to reduce car use is well-documented and principles of proximity are also fundamental in sustainable mobility.[95] Therefore, policies that encouraged access to services, goods, leisure and work would likely reduce

90 Jákupsdóttir 2013
91 Kringvarp Føroya 2013, Jákupsdóttir 2013
92 Personal correspondence with UNO 2013, Kringvarp Føroya 2012
93 Lindenskov 2014
94 Tórshavnar Kommuna 2002
95 Banister 2008, Cervero and Duncan 2003, Handy et al. 2002, Ewing et al. 2008

car use. However, it should not be assumed that increasing population density necessarily would change travel behaviour, as there is also research which points to that people choose residential location due to other factors than proximity to different facilities.[96] In Tórshavn few households with children live in the inner city. This might reflect a family-oriented lifestyle, which displays preferences for car ownership and sub urban living.[97] Emphasising the natural environment when trying to attract families with children has also been the strategy of commuter-villages surrounding Tórshavn.[98]

It is in the central city where most work places, services, cafés, restaurants, entertainment and shops are located, and the pronounced separation between residential areas and zones of commercial and production activity likely underpins the extensive car use. A such separation has not been common in some of the more traditional settlements, where the home and local sphere were closely related to production and leisure.[99] Increased specialisation has resulted in a centralisation of work places, with the broadest range of workplaces available in Tórshavn. Thus, the city has been adapted to car use. More recent planning principles, which take account to sustainable mobility, have, however, reintroduced a focus on mixed used developments in urban design in Tórshavn and there are plans to create smaller centres and increase population density in the various city parts.[100]

As it only takes around half an hour to walk to the central city from the residential areas in the outer city, distances are for most people possible to overcome without using car. Walking was also a popular leisure activity amongst interviewees, and is encouraged by an extensive network of footpaths, which in many cases make walking distances even shorter than driving distances. However, because of the many different journeys that interviewees daily made, time did not allow for walking. Also the weather was a commonly used argument for why interviewees used car when going to work or out.

Journeys with and without car ownership

The interviews did not suggest that people without car make fewer journeys for work and leisure than people with car. The major difference was that people without car walk more and make more

96 Van Acker et al. 2014, Westford 2010
97 Van Acker et al. 2014, Westford 2010
98 Holm 2004
99 Finnsson and Kristiansen 2006
100Rambøll 2006, Tórshavnar Kommuna and Arkitektar99 2012

use of public transportation. Some interviewees without car further made use of their network to get access to car, but also used ICTs to reduce travel demand.

Compared to many other cities around the world Tórshavn is small, but the short distances do rarely encourage people to walk. One reason for the high car use is presumed to be the weather.[101] A negative attitude towards the weather was in the interviews also displayed both from car owners and non car owners. However, even the weather is a matter of perception[102] and does not restrain some people from voluntarily not having car. As noted by some interviewees without car they did not use rain clothes, as it very rarely rained very much. Neither is the weather a problem for the growing number of people spending leisure time outside either walking or biking. Even though the weather to some extent has shaped Faroese culture, it does not alone determine behaviour.

People living in Tórshavn who work usual working hours already have the possibility to use a good bus service as an alternative to car. However, the interviews showed that it was common to do grocery shopping and deliver and collect children at the kindergarten as a extension to the journey to work. Therefore, it was not feasible to use bus for the work journey. An other hindarance for people to let go of their car was the few bus departures evenings and weekends, which meant that people would have a reduced mobility with regards to leisure activities. These are concrete examples on how the car sustains modern requirements for mobility.

The car is in a Faroese context generally perceived as the most natual mode of transportation and interviewees who not deliberately had chosen not to have a car, were very dependant on relatives with a car. They viewd their car less situation as undesirable, as they were not able to be as independent as they would like to be. The high need to own a car means that low income households are willing to use a large share of their income on a car, and expenses to car use are included in the national poverty threshold.[103] Especially households with only one adult have a high access to car. But an alternative to owning a car would be sharing a car and by having access to a shared car, which might be used by 10 or 20 people, most people would have a lower car access, compared with having a private car. There is one company that offers car sharing in Tórshavn. This company, which started in 2014, has yet only one car situated in the inner city.[104] In other countries car share companies generally experience high growth rates,[105] and the success might partly be due

101Gaini 2009: 40, Jákupsdóttir 2013
102Jákupsdóttir 2013
103Arbeiðsbólkur um fátækramark 2014
104Personal correspondence Drós í Ólavstovu, LetsGo Tórshavn 2014
105Shaheen and Cohen 2013

to an extensive focus on simplicity and convenience in marketing, which displays car sharing as modern and smart.[106] Thus, car sharing might be perceived more appealing than car ownership and reverse aspirations related to owning a car. As only 12% of the respondents were willing to replace their car or one of their cars with a shared car, car sharing may still be considered bold to some.

6.2 Access through ICTs and in the local area

Telecommuting

The survey showed that 12% of the respondents were working from home at least one day per week, which compared to Sweden, where the percentage in 2009 was 7%, can be considered to be quite high.[107] In Great Britain where policies have encouraged more flexible working patterns the percentage is 15,3% (2010)[108]. In Sweden, telecommuting is most profound in larger companies and in sectors such as IT, communication and the financial sector, and in the US 36% of those with a university education work from home.[109] According to my results 36% of the respondents who were able to telecommute, would like to work more from home, and the interviews indicated that reasons behind a desire to telecommute were a higher flexibility.

A media review shows that only marginal focus has been on telecommuting in the media. In the two articles about the topic, telecommuting is mainly presented as an opportunity for people living remotely from the work place.[110] According to a range of employers, telecommuting is not directly encouraged or promoted.[111] Thus, it may be likely that telecommuters frequently are self-employed. At some work places telecommuting is, however, possible, for example, at the largest Faroese telecompany, Føroya Tele, the public employment agency, ALS, and the national accountancy and financial department, Gjaldstovan.[112] According to Gjaldstovan, most people prefer to work at the physical work place with the distinct professional and social environment, even if technology makes telecommuting possible.[113] Policies that encourage telecommuting are used in other countries, and for example in the US there has been issued a Telework Enhancement Act, which has greatly

106www.zipcar.com, www.getaround.com, www.relayrides.com
107Arnfalk and Johansson 2013
108Felstead 2012
109Arnfalk and Johansson 2013
110Smith 2007: 6, Mikkelsen 2004
111Correspondence with Vinnuhúsið, Marita Rasmussen 2014
112Correspondence with Vinnuhúsið, Marita Rasmussen 2014, Føroya Tele, Beinta Wilhelm Fossabrúgv, 2014 ALS, Magni á Deild 2014
113Smith 2007: 6

increased distance working.[114] In Sweden official workplaces have set up goals to reduce the number of meetings that require physical travel,and online service is being encouraged,[115] and in the UK British Telecom has a history for actively promoting distance working and 71% of the employees have flexible working hours.[116]

Many jobs are not limited to a particular place, and as the traditional office has been transformed into data, a local café can be just as convenient as any office building centralised in a large city. Legal barriers have, however, restrained alternative work locations, as home offices are required to have equal standards as regular offices.[117] Strategies to encourage telecommuting must therefore confront fundamental perceptions of work, and might have to reconsider the sharp distinction between work and leisure. A currently highly debated topic in the Danish media is the opportunity for people with children and old parents to have flexible working conditions.[118] Such flexible working conditions could be achieved partly by telecommuting. In the Faroe Islands typical jobs that women occupy are part time jobs, which may be a result of a compromise for women to both be on the labour market and being the one that traditionally takes care of the home.[119]

My results showed that many telecommuters used car for journeys to the supermarket, Thus, may travel demand only be marginally reduced by telecommuting if other journeys are not also targeted.

Online shopping and services

In urban areas with a high population density it is easy to access products and services within walking distance, as there will be a customer base for local shops. This is however not the case in less dense places, which makes in necessary to access goods differently. My results showed that many regularly buy online, and common examples were clothes, flight tickets, theatre tickets, household items and mobile phone credit. Most sites are foreign retailers, such as sites offering a broad selection of different brands in children's clothes. However, generally e-shopping did only add up to in-store shopping, and thus the effect of e-shopping on total travel demand may be limited. But it is interesting that one interviewee, who lived remotely and did not own a car, always bought clothes online because it would be inconvenient to make journeys to look for clothes.

114Arnfalk and Johansson 2013
115Näringsdepartementet 2010
116Arnfalk and Johansson 2013
117Arnfalk and Johansson 2013
118Bagge 2014, Lumholt 2014
119Dalsgaard 2014

Therefore, the possibility to buy credit, clothes, food and take care of other matters online is likely to be of importance for people who have a low mobility. This is further implied by a study of e-shopping in island communities.[120]

Buying groceries online is not an opportunity in the Faroe Islands, as no supermarkets or similar trade can be found online. It is however possible to buy specialised food wares such as fish and seafood from company Norðfra, and typically sheep or fish from private dealers through C2C platforms on Facebook or the site Dals, but only few of the interviewees knew about these possibilities. There was, nevertheless, a significant interest to buy groceries online, and interviewees generally said that regular deliveries of food would make the everyday easier. Most did not visualize that online grocery shopping would substitute in-store grocery shopping, but perceived it more as a complementary service. The CEO in the national postal company, Posta, believes that it is only a question of time until supermarkets will offer online grocery shopping, as they are forced to react to the growing demand among consumers.[121] Because of the low population density many people living in Tórshavn do not have the convenience of a supermarket in the proximity of where they live. Therefore, one main reason to have a car is likely access to groceries. However, the high car ownership by people living close to a supermarket clearly indicates that good shopping possibilities will not alone ensure fewer cars. Especially households with children had a high car access, which could indicate inflexible working conditions for parents with smaller children and that children are escorted to leisure activities by their parents.

The most popular C2C platform, Dals, has a share of users, which make up a quarter of the entire population. However, as few Faroese online C2C platforms are place specific and it is not possible to only look for items within a short range from one's address, as it is in e.g. Danish C2C site Den Blå Avis, long journeys to either deliver or collect items are encouraged. Reasons for the little use of ICTs with the purpose of local trade, could be the low population density. However, as especially younger inhabitants through Facebook have started to organise micro flee markets in connection with that they are moving, there are signs of local trade events encouraged by ICTs.

With possibilities to purchase goods online there has both domestically and across the border been a growing number of packages going through the postal system.[122] Because of the increase in transportation of goods and only few transactions that actually substitute journeys, there might only

120Freathy and Calderwood 2013
121Personal correspondence with Joel undir Leitinum 2014
122Posta 2014

be a neutral impact on transportation due to e-shopping. An increase could also be expected, as people who are not at home when packages are delivered, have to travel to the post office to collect it, which generates extra journeys. Posta does not have plans to make it possible to collect packages at local pick-up points, which are common in cities such as Copenhagen and make people more prone to walk when collecting packages.[123]

Using ICTs to interact with authorities and companies can save journeys to physical offices and thus assist car free lifestyles. A study of the Nordic countries shows that online interaction with authorities is mostly done with the purpose to obtain information, but also as a means to obtain forms and returning filled in forms.[124] 62% of the respondents wanted to be able to send more forms to authorities online, which indicates that using ICTs for such services is yet not very developed in Tórshavn. While the vast majority of the respondents to the survey stated that they were using net bank, the share of users of Mínboks was significantly lower. The fact that only 26% of all the population over 15 years has Mínboks[125] must, however, been seen in the light of that net banks have existed longer than the official e-mail box, which was only launched in 2013. Also has the strategy of banks to apply charges on non online bank services has most likely encouraged a high use of internet bank. Such methods could however have a negative effect on how online services are received by the public, as people who prefer face to face interaction will experience a worse service.

Leisure

The interviews indicated that some were active in sports, others in more cultural activities and others again were much at home. Seeing friends and relatives in the spare time was also popular. 58% of the respondents, however, desired more leisure opportunities within the local area. It is not clear what effect more local leisure opportunities would have on travel demand, but they would perhaps get more people out of their homes, where much spare time commonly was spent. Local leisure activities could, however, reduce travel distances to more remote leisure activities, and also in the case of leisure activities for children it would be practical that leisure activities did not take place too far from home. In villages with few local leisure opportunities for young and children there is an especially high demand for having car.[126] However, not all remote leisure activities can be replaced by local leisure activities, as some of the leisure activities are place specific, such as

123Personal correspondence with Joel undir Leitinum 2014
124Nordic Council of Ministers 2013: 141
125Mínboks 2014
126Gaini 2009: 26

visiting friends and leisure activities with high profile instructors. There are some leisure activities that already take place in typical residential sites. Apart from spending time in the local outdoor areas, the most popular may be knitting clubs, where women meet regularly in private homes. Somewhere neighbours also meet around football. Some organisations use schools and sports halls for different activities and there are in Tórshavn two club houses for teenagers, where one is in Hoyvík. Also religious communities organise different events for children, teenagers and adults typically in churches, schools and some also have their own building. My results showed that respondents more often spent leisure time in the local outdoor areas compared to meeting with neighbours or attending organised spare time activities in the local area. Studies of leisure habits among teenagers show that most leisure time is spent within the home, and second in remote places.[127] This could be the same for adults, as little indication is that much activity takes place within the local site.

For young people it is important to share spaces and meet with other young people.[128] Studies of teenagers in Tórshavn show that this group is unsatisfied with leisure possibilities in Tórshavn and many desire local leisure possibilities.[129] A study made of the village, Hósvík, which is 20 minutes from Tórshavn, similarly show that people who newly had moved to the village would like more leisure opportunities for their children, and because of few opportunities it was common travel to Tórshavn or the other municipalities for leisure.[130] In another village, Kvívík, which also is 20 minutes from Tórshavn, there were more local leisure activities, but it was still easy to go to Tórshavn for other leisure activities, which resulted in that some people would rather go to Tórshavn than engage in local leisure activities.[131] Thus, a limiting factor for the extent of local leisure activities is a low population density. The interviews interestingly show that people without car were just as outgoing as car owners and did not spend less time on leisure activities outside the home. This is likely much influenced by that people without car tended to live more centrally, thus it can not be generalised that access to leisure is independent of car, but it suggests that access to leisure in the local site might encourage less car use. As the norm is either to stay in the house or to leave the neighbourhood in the spare time, non car owners not living centrally could become isolated, as they are not as flexible as car owners and it is not common practice to use spare time in the neighbourhood.

127Gaini 2008, Jensen and Vesterager 2003
128Jensen and Vesterager 2003
129Tórshavnar Býráð 2005, Gaini 2008
130Holm 2004
131Holm 2004

The potential of ICTs to mobilise people can also be used in a local context. Local online platforms can be useful to inform about arrangements and other leisure possibilities in the local site. Some people are members of highly active neighbourhood groups on Facebook, which have increased interaction within the neighbourhood. The purpose of such groups is commonly stated to be to improve interaction within the neighbourhood or to "*make the neighbourhood more sparkling*". On one neighbourhood Facebook page a person got several replies to an inquiry about if anyone was interested in cleaning his home. Online platforms may thus lead to an increase in informal and more formal interaction, and by making it easy to reach out to a large number of people, it will be easy to access goods and services in the local site, which might create local work and leisure. Examples of developments, which might have been encouraged by ICTs, are Løkjakontór, in the city part Argir, where self employed and telecommuters can rent an office in an "*atmosphere that will stimulate synergy effects and creativeness*".[132] An other is F'ljóð, which are musical events that weekly takes place in a typical residential area. Both initiatives are on Facebook.

A more lively local site would most likely only have a limited effect on travel behaviour, and people would still travel to meet with friends and relatives living farther away. In the Faroe Islands social relationships are cultivated very carefully, and friends and family members meet more often compared with other OECD countries.[133] Having this in mind, it was interesting that some non car owners said that they would likely travel more to see friends if they had a car. Without car they mainly kept in contact through ICTs, which to some extent had replaced face-to-face encounters. This indicates that people who are not able to meet as frequently as they would like, keep in touch through ICTs. However, also some interviewees also expressed concern about the lack of real human contact that new technologies contributed to, and did not like the idea that ICTs was substituting travelling. Some interviewees who had car said that they expected to meet relatives who lived in other parts of the city or other villages less if they did not have car, and because of this, the car was very important to them. Thus ICTs may only have limited effect on travel demand in relation to leisure related journeys.

Reductions in travel demand

People were divided and undetermined in how the internet had influenced their travel demand. However, there were more who estimated that it has reduced their travel demand than who

132Løkjakontór 2014
133Fólkaheilsuráðið 2013: 26

estimated that it had increased their travel demand. It is interesting that more respondents thought that their travel demand had been reduced as a result of ICTs. This could suggest that journeys to see friends and family, as well as journeys with the purpose of shopping, service and work may have become fewer. It can, however, also have something to do with the subjective impression of saved transportation when people access stuff and services online, and also interact with work, friends and family. People may forget that online platforms are very much used for marketing of products and events that in many cases result in increased travel demand.[134] They might neither be aware of potential rebound effects due to money or time saved on transport. Even though most interviewees did not think that their travel behaviour had been altered due to uses of the internet, some car owners said that they might buy more holiday travels and be aware of more different leisure possibilities due to the internet. On the contrary the possibility to use ICTs for shopping and leisure had reduced travel demand for non car owners.

People who have access to shopping and leisure in their local site tend to use less car than people that that do not have such access. However, with a low population density such facilities may not always be in the local area and concentration strategies may not be successful to achieve sustainable mobility as people may prefer a certain living area because of different values than proximity. Here, ICTs could reduce travel demand by e-shopping, online interaction and locally embedded platforms, where activities in the local site can be found.

Addressed separately neither telecommuting, e-shopping nor other initiatives to decrease car use will manage to substitute physical journeys. The work journey could either be replaced by telecommuting or bus could be used instead of car. But the need to do grocery shopping makes people use car. If it would be possible to buy groceries online, people would still need a car for to get to leisure activities being afraid to bike. Chores such as picking up packages and bringing forms to authorities are very inconvenient for those who do not have a car. It is thus clear that transportation behaviour will only become sustainable if multiple reasons for making trips are addressed. Strategies must therefore focus both on sustainable transportation alternatives and access through ICTs. In order to reduce car use it must be easy to use alternatives and there must be high access from home or the local site.

134Carrasco 2011, Boschma and Weltevreden 2005, Currah 2002, Steinfield et al. 2001

Chapter 7

Discussion and Conclusion

7.1 Discussion

Marginalisation of non car owners

From being viewed as exclusive, the car is today expected to be in every household. The car is a human right, empowers the poor, the women and makes it feasible to live in the middle of nature while at the same time harness the benefits from urban culture. But while car ownership has become the norm and everything has been planned around car use, usage of public and non-motorised transportation has become rare. In a ”car nation”, which the Faroe Islands have become,[135] being car less is not appealing as it very likely would mean social exclusion.

My results showed that non car owners were not necessarily excluded from social activities. If people live centrally they are able to use non motorised transportation modes for most journeys, while public tranportation and access through ICTs further supplement participation in cultural and social activities. Nevertheless, public opinion related to car use restricts people without car, which may be excluded from the job market.[136] Thus, non car owners might be exposed to a certain bias as they deviate from what is considered as normal and accepted behaviour. This perception is reinforced by the strong political focus on infrastructural improvements and the poverty threshold, which reconstruct the role of the car as a vital household item.

The strong car culture in the Faroe Islands is a crucial hindrance for sustainable mobility. There are, however, signs of a changing perception of car ownership which not in all circles is synonymous with the good life. Anthropologist Firouz Gaini notes that the car is loosing its grip on the younger generation, and especially in Tórshavn the youth does not exhibit a particular desire to have cars.[137] However, even though some people resist social expectations related to car use by voluntarily not having car, and even though the municipality of Tórshavn has had a campaign where people were

135Gaini and Jacobsen 2008
136Gaini 2009
137Gaini 2009, Gaini and Jacobsen 2008

confronted with their costly car use, an explicit focus on sustainable mobility in transport planning is still missing and there has been little public debate about sustainable mobility.

Sustainable mobility and structural change

It is important for the inhabitants in the small villages around the Faroe Islands that the villages are able to sustain. This has become a national priority and policies, thus, aim to encourage commuting by subsidising fuel and reducing commuting times through improvements in infrastructure. However, by depending on car in order to take part in society people are being locked into unsustainable mobility patterns. Transport related climate policies focus one sidedly on fuel efficiency and technological innovation and have neglected to reduce car use. Below is how Útoyggjafelagið, an organisation for remote islands, has expressed the importance of local services:

"*The people and families that choose to live on a remote island, do it because they experience some quality of life in such living. But if the foundation to arrange a normal daily life on a remote island is taken away, because, among other things, the whole family has to leave the island in order to work, go to school, shop, to get health services and other things, then the foundation for residing on the islands has vanished.*"[138]

School children living on the isolated island, Stóra Dímun, get educational lectures and music lessons through Skype.[139] This illustrates that it is possible for national policies to make more use of ICTs in order to get the smaller villages to thrive. However, a focus on other values than economic growth would challenge the foundations of a capitalistic society. That is why ecological modernisation, which is underpinning Faroese efforts to reduce environmental effects from transportation, offers a convenient escape for governments and the market alike. A reliance on technological progress and a promotion of growth is, nevertheless, insufficient to ensure ecological sustainability.

The municipality of Tórshavn has tried to get more people to use public transportation. In the campaign focus was on the economic savings people would make by using bus instead of car. However, the campaign did not manage to reduce car use remarkably. This is not unexpected as people are unlikely to give up car ownership and long as alternatives are not feasible, and the bus

138Útoyggjafelagið 2009
139Dímunargarður 2012

service can not alone replace car use. The campaign was however an important milestone as it sought to confront the perception that car use represents the good life. Such strategies are needed in order to break down prevailing social structures related to car use.

My survey showed that low income households prioritize car ownership and an other study on attitudes towards use of public transportation also suggests that people tend to accept the high cost related to car ownership as a mandatory expense.[140] Car use has thus become a threat to the economy. However, as all cars and fuels are imported, a development towards sustainable mobility is not in direct conflict with national economic interests. Therefore, it should be feasible for policies to change the current focus on transport with a new focus on sustainable mobility. Such policies must be careful to account for that rebound effects do not take place. When urban design takes account to proximity, ICTs complements mobility and improved public transportation and biking conditions lead to that people sell their cars, they will have surplus money and time, which will be used on other consumption. People must not expect to get more available financial means even as lifestyles become more economic. To avoid that technological development and changes in travel behaviour stimulate transport, costs related to unsustainable effects must equally increase.

6.2 Conclusion

For journeys in all three categories (work, shopping, leisure) car was clearly the preferred transportation mode. Use of non-motorised transportation modes and public transportation was related to a low car access and access in the local area.

As a low population density limits the extent to which facilities can be sustained in some local sites, policies that promote sustainable mobility should encourage usage of ICTs. Results indicated that if people did not have access to car, ICTs substituted journeys with the purpose of shopping and leisure. This was in particular relevant for people who did not live close to shopping and leisure facilities. People who did not have access to car also desired flexible working conditions and were positive with regards to telecommuting.

A strong political focus on car ownership contributes to reproducing car use as the most accepted form of transportation. Thus, non car owners risk social exclusion and patterns of unsustainable

140Joensen and á Rógvi 2009

mobility are maintained. A high focus on improvements in infrastructure has encouraged car use and neglected public and non-motorised transportation. Due to the strong cultural significance of car ownership, people are likely to persist using car even if costs related to car use increase. For a transition to sustainable mobility to take place it is necessary that the current focus on car use is moved to a focus on mobility, access and proximity. It must be recognised by public authorities that individual car ownership will not increase welfare, as it marginalises public and non-motorised transportation modes. ICTs can facilitate use of public and non-motorised transportation by substituting or complementing journeys to shopping, services, leisure and work.

List of Literature

Aguiléra, A. (2008) “Business travel and mobile workers”, Transportation Research Part A – Policy and Practice, 42(8), 1109-1116

Andersen, H. and Kaspersen, L. B. (ed.) (2000) “Classical and Modern Social Theory”, Blackwell Publishing, Oxford

Anderson, W.P., Chatterjee, L., and Lakshmanan, T. R. (2003) “E-commerce, transportation, and economic geography”, Growth and Change, 34(4), 415-432.

Arbeiðsbólkur um fátækramark (2014) “Álit um Eitt føroyskt fátækramark”

Arnfalk, P. and Johansson, T. B. (2013) “Arbete, studier och möten på distans: hur påverkas resandet? Delrapport 1: Distansarbete & flexibla arbetsformer”

Banister, D. (2008) “The sustainable mobility paradigm”, Transport Policy 15 73-80

Balepur, P.N., Varma, K. V. and Mokhtarian, P. L. (1998) “The transportation impacts of center-based telecommuting: interim findings from the Neighborhood Telecenters Project”, Transportation 25(3), 287-306

van den Berg, P., Arentze, T. and Timmermans H. (2013) “A path analysis of social networks, telecommunication and social activity–travel patterns”, Transportation Research Part C – Emerging Technologies 26 256-268

van den Bergh, J. C. J. M. (2011) “Energy Conservation More Effective With Rebound Policy”, Environ Resource Econ 48:43-58

van den Bergh, J. C. J. M. (2001) “Ecological economics: themes, approaches, and differences with economics”, Reg Environ Change 2:13-23, Springer-Verlag

Bertholdsen, Á. (2014) “Ein plága fyri øll sum koma til Havnar við bili” In.fo 13.03.2014

Bertholdsen, Á. (2009) “Bíligari vegskatt og dýrari bensin”, Sosialurin 30.01.09, Tórshavn

Boschma, R.A. and Weltevreden, J. W. J. (2005) “B2c e-commerce adoption in inner cities: Downloaded an evolutionary perspective”, Utrecht University, Utrecht

Botsman, R. and Rogers, R. (2011) “What's mine is yours – How collaborative consumption is changing the way we live”, Harpercollings Publishers

Burns, R. B. (2000) “Introduction to research methods”, Pearson Education Australia Pty Limited, Fourth Edition 2000, SAGE Publications Ltd. Londone

Carle, J. (2000) ”Opinion och Aktion. En sociologisk studie av ungdomar och miljö”, Department of Sociology, Göteborg University, Göteborg

Carrasco, J. A. (2011) “Personal network maintenance, face-to-face interaction, and distance. Role

of availability and use of information and communication technologies", Transportation Research Record 2231, 120-128

Cervero, R., and Duncan, M. (2003) "Walking, bicycling, and urban landscapes: evidence from San Francisco Bay Area", American Journal of Public Health 93 (9), 1478–1483

Cohen-Blankshtain, G. and Rotem-Mindali, O. (2013) "Key Research Themes on ICT and Sustainable Urban Mobility", International Journal of Sustainable Transportation, Taylor & Francis, London

Currah, A. (2002) "Behind the web store: the organisational and spatial evolution of multichannel retailing in Toronto", Environment and Planning A, 34(8), 1411-1441.

Dalsgaard, M. (2014) "Fleiri forðingar fyri at kvinnur arbeiða fulla tíð"

Daly, H. (2009) "Ecological Economics and Sustainable Development – Selected Essays of Herman Daly", Edward Elgar Publishing

Danmarks Meterologiske Institut (2014) "The Faroe Islands", DMI, http://www.dmi.dk/en/klima/climate-changes-over-time/the-faroe-islands/ accessed 23.06.14

Danmarks Statistik (2014) "Gennemsnitlig pendlingsafstand efter køn, arbejdsområde og tid", www.statistikbanken.dk/AFSTA2 accessed 23.04.24

Danmarks Statistik (2012) "Danskerne pendler længere og længere", NYT nr. 281,

Danmarks Statistik, "BIL90: Familiernes bilrådighed (faktiske tal) efter bestand, socio-økonomisk status og rådighedsmønster)" www.dst.dk, http://www.statistikbanken.dk/BIL90 heinta 07.06.13

Davidson, S. (2012) "The insuperable imperative: A critiques of the ecologically modernizing state", Capitalism Nature Socialism, 23:2, 31-50, Routledge, London

De Graaff, T. (2004) "On the substitution between telework and travel: a review and application", Research Memorandum 2004-16, Free University Amsterdam.

Dieleman, F. M., Dijst, G. and Burghouwt, G. (2002) "Urban form and travel behaviour: micro-level household attributes and residential context", Urban Stud., 39 (3) (2002), pp. 507-527

Dímunargarður (2012) "Børn úr kommunuskúlanum á vitjan", www.storadímum.fo

Ettema, D. and Schwanen, T. (2012) "A relational approach to analysing leisure travel", Journal of Transport Geography 24 (2012), pp. 173-181

European Commission (2011) "Roadmap to a single European Transport Area", White Paper

Ewing, R., Bartholomew, K., Winkelman, S., Walters, J. and Chen, D. (2008) "Growing Cooler: The Evidence on Urban Development and Climate Change" Urban Land Institute, Washington, DC

Fang, S. (2009) "Governing Environment: Governmentality in Global Climate Politics", The International Journal of the Humanities, Volume 7 Number 10 2009

Farag, S., Weltevreden, J., van Rietbergen, T., Dijst, M. T., & van Oort, F.,2006, E-shopping in the Netherlands: does geography matter? Environment And Planning B – Planning & Design, 33(1), 59-74.

Felstead, A. (2012) "Rapid change or slow evolution? Changing places of work and their consequences in the UK", Social Impacts and Equity Issues in Transport, 21(0), 31-38

Finnsson, B. and Kristiansen, S. M. (2006) "Fyrr, nú og í framtíðini", Granskingardepilin fyri økismenning, Námsrit 7/2006

Fólkaheilsuráðið (2013) "Føroyar besta land í heiminum – Ein kanning hjá Fólkaheilsuráðnum grundað á OECD Better Life Initiative og Gallup World Poll"

Freathy, P. and Calderwood, E. (2013) "The impact of internet adoption upon the shopping behaviour of island residents", Journal of Retailing and Consumer Services 20 2013, pp. 111-119

Gaini, F. (2009) "Bilmentan – Ung, ferðsla og trygd", Tórshavn

Gaini, F. (2008) "Barna- og ungdómskanning – mentan, frítíð og trivnaður", Fróðskaparsetur Føroya

Gaini, F. and Jacobsen, H. (2008) "Mynstur broytast – Landsverk bygd land í 60 ár", Landsverk

Gansky, L. (2010) "The Mesh – Why the future of business is sharing", Penguin Group, USA

Golob, T. F. and Regan, A. (2001) "Impacts of information technology on personal travel and commercial vehicle operation: research challenges and opportunities", Transportation Research Part C – Emerging Technologies, 9(2), 87-121

Hagstova Føroya (2013) "Faroe Islands in figures 2013", Statistics Faroe Islands, Argir

Hagstova Føroya (2013) "Øll telja við", Argir

Hamer, R., Kroes E. and Ooststroom H.V., (1991) "Teleworking in the Netherlands: an evaluation of changes in travel behaviour", Transportation 18(4): 365-382

Handy, S.L., Boarnet, M.G., Ewing, R. and Killingsworth, R.E. (2002) "How the built environment affects physical activity. Views from urban planning", American Journal of Preventive Medicine 23 (2), 64–73

Harper, C. (2013) "On Facebook discourse grows ever more ani-social", Special to the Washington Times, The (DC), Apr 04 2013

Holm, D. (2004) "Fjarferðing í Føroyum", Arbeiðsrit nr. 8, Granskingardepilin fyri Økismenning

IEA/OECD (2009) "Transport, Energy and CO2 – Moving Toward Sustainability", International Energy Agency, France

Jacobsen, B., Jacobsen, E. S., Jákupsstovu, B. and Kjersem, E. (2010) "Í triðja aldri ráða vit yvir

degnum – ein kanning av livikorum hjá fólkapensionistum", Almannaráðið, Søgu- og Samfelagsdeildin, Fróðskaparsetur Føroya

Jákupsdóttir, T. (2013) "Færri bilar – Fleiri møguleikar", Hugskotskapping hjá Landsverk 2013

Jensen, D. H. and Vesterager, M. (2003) "Ungdomskulturen i Torshavn – et RUC projekt om de unges brug af det offentlige rum", Geografi, Roskilde Universitetscenter

Joensen, H. and á Rógvi, H. (2009) "Bussleiðin Tórshavnar kommuna – Teljing, tørvur og vakstrarmøguleikar", Lóður

Joensen, H. and á Rógvi, H. (2008) "Nøgdsemi í Tórshavnar Kommunu 2008", Lóður

Karathodorou, N.; Graham, J. D. and Noland, R. B. (2009) "Estimating the effect of urban density on fuel demand", Energy Economics 32 (2010) 86-92, Elsevier B.V.

Keskinen, A., Delache, X., Cruddas, J., Lindjord, J. E., and Iglesias, C. (2002) "A Purchase and a Chain. Impacts of E-commerce on Transport and the Environment", OECD/ECMT, Paris

Kraut, R., Lundmark, V., Patterson, M., Kiesler, S., Mukopadhyaya, T., and Scherlis, W., (1998) "Internet paradox: A social technology that reduces social involvement and psychological well-being?", American Psychologist 53(1017–1031).

Kringvarp Føroya (2014a) "Nýggjar kanningar vísa at luftin í Havn er rein", www.kvf.fo

Kringvarp Føroya (2013) "Annar Sofía súkklar hvønn dag", Hentze, B. D. http://kvf.fo/netvarp/uv/2013/05/08/anna-sofa-skklar-hvnn-dag accessed 24.04.14

Kringvarp Føroya (2012) "Umstøðurnar at súkka í Føroyum frægari", http://kvf.fo/netvarp/uv/2012/10/18/umsturnar-skkla-froyum-frgari accessed 02.06.14

Laksá, U. (2013) "Media Coverage of International Climate Negotiations: Assessing the Ethical Dimension of the Global Debate"

Landsverk (2012) "Føroyar sum ein býur – Samferðsluætlan 2012-2024 Strategi og mál 1. partur"

Landsverk (2008) "Samferðsluætlan 2008-2020 – 1. partur: Strategiskjal"

Lawson, A. R., McMorrow, K., Ghosh, B. (2013) "Analysis of the non-motorized commuter journeys in major Irish cities", Transport Policy, vol. 27, May 2013, pp. 179-188

Lee, D., Paswan, A., Ganesh, G., Xavier, M. (2009) "Outshopping through the internet a multicountry investigation", Journal of Global Marketing 22 (1), 53-66

Lidskog, R. and Elander, I. (2012) "Ecological Modernization in Practice? The Case of Sustainable Development in Sweden", Journal of Environmental Policy & Planning, Routledge, London

Lim, M. (2014) "Seeing spatially: people, networks and movements in digital and urban spaces", International Development Planning Review 36 (1) 2014, Liverpool University Press

Lindenskov, E. (2014) “Løgmaður súkklar til Viðareiðis og aftur”, In.fo 16.04.14

Løgmansskrivstovan (2009) “Røða løgmans á almenna fundinum um eina nýggja altjóða veðurlagsavtalu í Norðurlandshúsinum 19. mai 2009, http://www.vmr.fo/Default.aspx?cyear=2014&cmonth=6&ID=10768&Action=1&NewsId=2075&currentPage=37 accessed 19.02.14

Løkjakontór (2014) “Okkara tænasta – Hugskotið”, www.lokjakontor.com

Magelund, L. (1997) “Valg af transportmiddel i storbyen: Bil og kollektiv transport i bolig-arbejdsrejsen”, Transportrådet 01.01.1997

Melamed, S., Meir, E.I., Samson, A. (1995) “The benefits of personality-leisure congruence: evidence and implications”, Journal of Leisure Research, 27 (1) (1995), pp. 25-40

Mikkelsen, H. K. (2004) “Andras Róin: Føroya Tele eigur at ganga fremst”, Sosialurin 15.04.04

Ministry of the Interior (2009) “Climate Policy of the Faroes – Reducing emissions of greenhouse gasses”

Mínboks (2014) “Yvir 10.000 brúka nú mínboks”, www.mínboks.fo, 28.04.14

Mokhtarian, P. L. (2004) “A conceptual analysis of the transportation impacts of B2C e-commerce”, Transportation, 31(3), 257-284

Mokhtarian, P.L. and Salomon, I. (2002) “Emerging travel patterns: Do telecommunications make a difference?” Chapter 7 in H.S. Mahmassani, (ed), In Perpetual Motion: Travel Behaviour Research Opportunities and Application Challenges. Pergamon Press/Elsevier, pp. 143–182, Oxford, UK,

Mokhtarian, P. L., Salomon, I. and Redmond, L. S. (2001) “Understanding the Demand for Travel: It's Not Purely 'Derived'”, Innovation, Vol. 14, No. 4

Nielsen, O. K., Plejdrup, M. S., Winther, M., Nielsen, M., Gyldenkærne, S., Mikkelsen, M. H., Albrektsen, R., Thomsen, M., Hjelgaard, K., Hoffmann, L., Fauser, P., Bruun, H. G., Johannsen, V. K., Nord-Larsen, T., Vesterdal, L., Møller, I. S., Caspersen, O. H., Rasmussen, E., Petersen, S. B., Baunbæk, L. and Hansen, M. G. (2014) “Denmark's National Inventory Report 2014. Emission Inventories 1990-2012 - Submitted under the United Nations Framework Convention on Climate Change and the Kyoto Protocol”, Aarhus University, DCE – Danish Centre for Environment and Energy, 1214pp. Scientific Report from DCE – Danish Centre for Environment and Energy. http://www.dce2.au.dk/pub/SR101.pdf

Nordic Council of Ministers (2013) “Nordic Statistical Yearbook 2013” Volume 51, ed. Klaus Munch Haagensen, Statistics Denmark, Copenhagen

Nordic Council of Ministers (2013), “The Nordic countries in figures”, Ed. Haagensen, K. M., Copenhagen

Nordiska Trafiksäkerhetsrådet (2010) ”Nordiska invånares syn på trafiksäkerhet”

van Nunen, J. A. E. E., Huijbregts, P. and Rietveld, P. (2011) “Transitions Towards Sustainable

Mobility – New solutions and approaches for sustainable transport systems", Springer, Heidelberg

Pendyala, R.M., Goulias, K.G. and Kitamura R. (1991) "Impact of telecommuting on spatial and temporal patterns of household travel", Transportation 18(4): 383-409.

Posta (2014) "2013 Ársfrágeriðing – Annual Report", Tórshavn

Rambøll (2006) "Forslag til opdateret helhedsplan for Tórshavn Kommune 2022"

Sandqvist, K. (2005) "Car-related attitutes of adolescents and their parents. A comparison between car-owning and car-less households in suburban and inner city Stockholm", Stockholm Institute of Education, Stockholm

Sandqvist, K. (2002) "Growing up with and without a family car", Social Change and Sustainable Transport, W.R. Black & P. Nijkamp, Indiana Univ. Press, Indianapolis

Shaheen, S. A. and Cohen, A. P. (2013) "Carsharing and Personal Vehicle Services: Worldwide Market Developments and Emerging Trends", International Journal of Sustainable Transportation, 7:1, 5-34

SIFO (1997) "Svenskarna om bilen i samhället" Dokument # 3271910, Sifo Research and Consulting AB, Stockholm

SIKA Statistics (2006) "KOM – The national communications survey", Swedish Institute for Transport and Communications Analyses, 2006:32

Smith, T. (2007) "Gott arbeiðsumhvørvi og framkomna tøkni er tað vit kunnu bjóða", Starvsmannafelagið, Starvsblaðið nr. 4 oktober 2007, Tórshavn

Stead, D. and Banister, D. (2001), "Influencing Mobility Outside Transport Policy", Innovation, Vol. 14, No. 4, 2001

Steinfield, de Wit, D., Adelaar, T., Bruins, A., Fielt, E. and Hoefsloot, M. (2001) "Pillars of virtual enterprise: leveraging physical assets in the new economy", Info 3(3), 203-213.

Steinhólm, A. (2007) "Færøerne – en by i verdenssamfundet – Trafikplan for Færøerne 2008-2020", Dansk Vejtidsskrift 2007 august

TAKS (2014) "Mileage allowance (Ferðastuðul)", www.taks.fo, http://taks.fo/01436/01452/01487/ accessed 05.05.14

Tórshavnar Býráð (2010) "2006-3419 (sí eisini mál nr 2007-2041) – GHM, Ferðslupolitikkur og ferðslutrygdarætlan í Tórshavnar kommunu", 80/10 gerðabók 20. mai 2010

Tórshavnar Býráð (2005) "Álit um ung", Tórshavn

Tórshavnar Kommuna (2014) "Tórshavnar ungdómsráð 2014-16", www.torshavn.fo, http://www.torshavn.fo/Default.aspx?pageid=1314 accessed 23.05.14

Tórshavnar Kommuna (2013a) “Miðbýurin í tølum”, Tórshavnar Kommuna

Tórshavnar Kommuna (2013) “Almenna byggisamtyktin seinast broytt 31. oktober 2013”

Tórshavnar Kommuna (2007) “Tórshavnar býaratlas – Hús og býarumhvøvi í Tórshavn 2007”

Tórshavnar Kommuna (2002) “Ferðslubólkurin settur av teknisku nevnd”

Tripathi, N. (2013) “Where the road is without congestion & environment is pollution free: Trip to sustainable urban mobility”, OIDA International Journal of Sustainable Development

Umhvørvisstovan (2011) “Útlát av vakstrarhúsgassi, býtt millum brúkarar”, www.us.fo, http://us.fo/Default.aspx?ID=7081 accessed 06.05.14

Umhvørvisstovan “Útleiða føroyingar meira CO2 enn onnur?”, www.us.fo, http://us.fo/Default.aspx?ID=8827 accessed 06.05.14

Urry, J. (2004) “The system of automobility”, Theory, Culture and Society, 21 (4-5)

Útoyggjafelagið (2009) ”At flyta út, meðan alt verður flutt inn” http://utoyggj.fo/pages/posts/at-flyta-ut-medan-alt-verdur-flutt-inn-58.php?p=90 accessed 06.03.14

Van Acker, V., Mokhtarian, P. L. and Witlox, F. (2014) “Car availability explained by the structural relationships between lifestyles, residential location, and underlying residential and travel attitudes”, Transport Policy vol. 35, september 2014, pages 88-99

Van Acker, V. and Wiltox, F. (2010) “Car ownership as a mediating variable in car travel behaviour research using a structural equation modelling approach to identify its dual relationship”, J. Transp. Geogr., 18 (1) (2010), pp. 65-74

Visser, E. J. and Lanzendorf, M. (2004) “Mobility and accessibility effects of b2c e-commerce: A literature review”, Tijdschrift voor Economische en Sociale Geografie, 95(2), 189-205.

Westford, P. (2010) “Neighbourhood design and travel – A study of residential quality, child leisure activity and trips to school”, Doctoral Thesis in Infrastructure, Stockholm

Wiegmans, B. W., Beekman, N., Boschker, A., van Dam, Wim and Nijhof, N. (2003) “ICT and Sustainable Mobility: From Impacts to Policy”, Growth and Change Vol. 34 No. 4 (Fall 2003) pp. 473-489

The World Bank Group (2014a) “Passenger cars (per 1,000 people)”, http://data.worldbank.org/indicator/IS.VEH.PCAR.P3 accessed 17.04.14

The World Bank Group (2014b) “CO2 emissions (metric tons per capita)”, http://data.worldbank.org/indicator/EN.ATM.CO2E.PC accessed 04.06.14

Appendix I: Survey in English

1. Gender?
   Male
   Female
   Other

2. Age? 19-29 years 50-59 years
   30-39 years 60-69 years
   40-49 years 70 years or more

3. What is you the highest education that you have completed?
   I do not have any education
   Primary school 1-7th class
   Upper secondary 8-9(10) class, real, or similar
   Shorter educations and courses (up to one year)
   High school, HF, HH or similar
   1-2 year university, exam and other diplom educations
   Shorter university education, bachelor or similar
   Longer university education, cand. mag.art, master or similar
   Doctorate, PhD, lic or similar

4. How many adults aged 18 and up are in the household?
   1
   2
   3
   4 or more

5. How many children and youths below 18 are in the household?
   1
   2
   3
   4 or more

6. What is the annual household income before tax?
   0-250.000 kr
   251.000-600.000 kr
   More than 601.000 kr
   I don't know

7. How many cars are available to the household? (include also business cars that are used privately)
   0
   1
   2
   3
   4 or more

8. Do you have a drivers license?

Yes
No

9. How long have you been living at your current address?
   Less than 2 years
   More than 2 years

Travel habits

10. Last week, how did you most often travel to and from the work place/education?
    By car
    By bus
    By bike
    On foot
    I did not go to any work place/education
    Other _____

11. Last week, how did you most often get to the supermarket?
    By car
    By bus
    By bike
    On foot
    Other _____

12. Last week, how did the children in the household most often get to kindergarten or similar?
    By car
    By bus
    By bike
    On foot
    No children that are in kindergarten or similar are in the h ousehold
    Other _____

13. Last week, how did the children in the household most often get to school?
    By car
    By bus
    By bike
    On foot
    No children in school age are in the household
    Other _____

14. Last week, how did you most often get to spare time activities, which were not in the neighbourhood (less than 500m from the home)?
    By car
    By bus
    By bike
    On foot
    I do not attend any spare time activities farther away than 500m from the home
    Other _____

15. Last week, how did the children in the household most often get to spare time activities that

were not in the neighbourhood (less than 500m from the home)?

By car
By bus
By bike
On foot
There are no children in the household who attend spare time activities farther away than 500m from the home
Other _____

Conditions to walk, bike and use bus

16. Would you bike more often if there were better biking lanes?
    Very likely Likely Unlikely Very unlikely

17. Would the children in the household bike more often in biking lanes were better?
    Very likely Likely Unlikely Very unlikely Not relevant

18. Would you use the bus more often if the bus service was better?
    Very likely Likely Unlikely Very unlikely

20. Would the children in the household use more often bus if the bus service was better?
    Very likely Likely Unlikely Very unlikely Not relevant

21. Would you consider having one car less if a shared car was within 100m from your home?
    Very likely Likely Unlikely Very unlikely I don't have a car

The internet

22. How often are you usually online?
    Daily
    At least once a week
    Less than one a week

23. Do you usually work from your home?
    Yes, more than 3 days per week
    Yes, 1-2 days per week
    Yes, less than 1 day per week
    No, but it would be possible
    No, it is not possible with my kind of job
    I don't have a job

24. Do you use the internet in your work?
    Yes
    No
    I don't have a job

25. Approximately how often do you use Skype?
    Daily
    At least once a week
    Less than once a week

I don't use Skype

26. Approximately how often are you on Facebook
    Daily
    At least once a week
    Less than once a week
    I don't have a Facebook profile

27. Are you a member of a neighbourhood related group on Facebook?
    Yes
    No

28. Do you use net bank for money transfers?
    Yes
    No

29. Do you have Mínboks (personal online mailbox, where it possible to receive post from companies and institutions)
    Yes
    No
    I don't know

30. How do you most often get items purchased online?
    I pick them up at the post office or at the salesman
    I get then sent home
    I have never bought anything on the internet
    Other _____

31. Have you ever bought food online?
    Yes, more than 2 times
    Yes, 1-2 times
    No

The local area

32. Do the children in the household play with other children in the neighbourhood?
    Yes
    No
    There are no children in the household

33. Do the children in the household attend spare time activities in the neighbourhood?
    Yes
    No
    There are no children in the household

34. Do you meet with neighbours and/or attend spare time activities in the neighbourhood?
    Yes, at least once a week
    Yes, 1-3 times per month
    Yes, less than once a month
    No

35. Have you ever been to an neighbourhood event such as new years bonfire or cleaning day?
    Yes, at least 2 times the last year
    Yes, 1 time the last year
    No

36. Have you ever borrowed, gotten, rented or bought anything, e.g. a drilling machine or a cup of sugar from anyone in the neighbourhood?
    Yes, within the last half year
    Yes, within the last year
    Yes, but it is more than a year ago
    No

38. Have you ever attended a flea market in the neighbourhood (less than 500m your home)?
    Yes, within the last year
    Yes, but it is more than a year ago
    No

39. How often do you use the common outdoor areas in the neighbourhood, e.g. for walks or sports?
    Daily
    At least once a week
    Less than once a week
    Never

40. How often do the children in the household use the common outdoor areas in the neighbourhood?
    Daily
    At least once a week
    Less than once a week
    There are no children in the household

Agree/Disagree

41. I would like to work more from home!
    Agree Disagree I don't know

42. The internet has increased interaction in the neighbourhood!
    Agree Disagree I don't know

43. I wish there were more leisure activities in my neighbourhood (less than 500m from the home)!
    Agree Disagree I don't know

44. I wish that it was possible to buy more groceries online and had them delivered to the door!
    Agree Disagree I don't know

45. I wish that it was possible to handle more issues, like filling out and sending forms, online!
    Agree Disagree I don't know

46. The internet has increased my travel demand!
Agree Disagree I don't know

47. The internet has decreased my travel demand!
Agree Disagree I don't know

Appendix II: Interview guide in English

How many cars are there is the household/how long have you not had a car? How do you travel to work? Why? Why not walk/bus/bike/car to work? (How far is it between your home and your workplace? What times a day do you work?) Do you sometimes work from home? (How often?) (Have you considered working from home, e.g. a few days per week?)(Would you like to work from your home?)

Do you have children in kindergarten or school? How far is it to the kindergarten/school from your home? (If they do not go to the closest school from where you live, is there any particular reason for this?) How do they travel to kindergarten/school? Why? Why not walking/biking/taking the bus/using car?

Where do you do grocery shopping? Why? How far is it to your closest grocery store from your home? When do you usually shop groceries? Hví? How do you travel when you buy groceries? Why? Why not walk/bike/use bus/use car? Have you tried to buy food online? (Do you do it regularly?)(Why?) Would you like to be able to buy more food online? Why/why not? Do you buy other things online? Why/why not?

How often weekly do leave your home in your spare time? (to do anything: visit friends, events, leisure, walks,...) How do you usually get to the activities? How far from your home are the activities? Why? Why nor walk/bike/bus/car? How often do your children leave your home in their spare time? How do they usually get to the activities? How far from your home are the activities? Why? Why not walk/bike/bus/car?

Does you neighbourhood have a group on Facebook? (Are you a member of the group? How is the group used, what is posted on the wall?) Do you think that the internet has made it easier to communicate with people in the area where you live? How? Do you have Mínboks? Do you use internet bank? Do you communicate with authorities online if possible, e.g. online applications? Do you think that the internet has changed you travel demand? How?

For those with car: Why do you have car? If there was one car less/no car in your household, how would you imagine that your travel behaviour would change? Do you think that you would have less contact to friends, relatives and colleagues? Why/why not? Do you think that you would have less time for work, your family, friends and relatives? Why/why not? Do you think you would use the area where you live more? How? Do you think that you would interact more through the internet (e.g. with authorities, neighbours, friends, family, shops, work)? How?

For those without car: Why do you not have a car? (Do you have a drivers license? why/why not?) If you had a car, how would you imagine that your travel behaviour would be different? (Do you think that you would walk/bike/bus less) (Why?) Do you think that you would use the area where you live less? Why/why not? What would make it easier for you, now when you do not have a car? (what could be different, e.g. would you like to interact with authorities online, shop online, more facilities in your living area, better bus service,...) When or to what purposes do you feel that you miss having a car? Are you dependant on other people who have car?

Spurnakanning um internet, nærumhvørvið og ferðavanar

Kanningin er liður í master-ritgerð, ið verður skrivað á Centrum för Miljö- och Klimatforskning á Lunds Universitet, og snýr seg um ferðavanar, internetsamskifti og virksemi í nærumhvørvinum. Kannað verður m.a. hvussu fatur fæst á gerandisvørum, hvussu nógv arbeiða heimanifrá umvegis internetið, og í hvønn mun nærumhvørvið verður brúkt í frítíðini.

Kanningin er dulnevnd, og tað tekur uml. 10 min at svara spurningunum. Øll, sum eru yvir 18 ár, kunnu svara spurnablaðnum.

Kanningin verður gjørd í samstarvi við felagið Býtisbilar Tórshavn, ið rekur býtisbilaskipanina LetsGo Tórshavn.

Samandráttur av niðurstøðum frá kanningini verður sendur Eigarafelagsbólkinum á Facebook, tá ritgerðin er liðug í mai/juni.

Spurnakanning um internet, nærumhvørvið og ferðavanar

1. Hvat kyn ert tú?

- ◯ Maður
- ◯ Kvinna
- ◯ Annað

2. Hvønn aldur hevur tú?

- ◯ 18-29 ár
- ◯ 30-39 ár
- ◯ 40-49 ár
- ◯ 50-59 ár
- ◯ 60-69 ár
- ◯ 70 ár ella eldri

3. Hvør er tann hægsta útbúgvingin, tú er liðug/ur við?

- ◯ Havi ikki útbúgving
- ◯ Grundskúlin 1-7. flokk
- ◯ Framhaldsskúlin 8-9(10). flokk, real, millumskúli o.t.
- ◯ Styttri útbúgvingar og skeið, t.d. kokkaskeið, háskúlaskeið ella húsarhaldsskeið (upp í eitt ár)
- ◯ Miðnámsskúli, skudentaskúli, HF, HH, fiskivinnuskúli o.t.
- ◯ Handverkara- ella aðra yrkisútbúgving innan t.d. handil, prent ella bygging
- ◯ 1-2 ár á hægri lærustovni, exam og aðrar diplomútbúgvingar
- ◯ Styttri útbúgving frá hægri lærustovni, bachelor o.t.
- ◯ Longri útbúgving frá hægri lærustovni, cand.mag.art, master o.t.
- ◯ Doktaraheiti, PhD, lic, o.t.

4. Hvussu nógv vaksin yvir 18 ár eru í húskinum?

- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4 ella fleiri

5. Hvussu nógv børn og ung undir 18 ár eru í húskinum?

- ◯ 0
- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4 ella fleiri

6. Hvat er ársinntøkan hjá húskinum áðrenn skatt?

- ◯ 0-250.000 kr
- ◯ 251.000 – 600.000 kr
- ◯ Yvir 601.000 kr
- ◯ Veit ikki

7. Hvussu nógvir bilar eru til taks í húskinum (tel eisini arbeiðsbilar við, sum eru tøkir til privata nýtslu)?

- ◯ 0
- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4 ella fleiri

8. Hevur tú koyrikort?

- ◯ Ja
- ◯ Nei

9. Hvussu leingi hevur tú búð á tínum núverandi bústaði?

- ◯ Minni enn 2 ár
- ◯ 2 ár ella longri

Spurnakanning um internet, nærumhvørvið og ferðavanar

Ferðavanar

10. Í síðstu viku, hvussu fór tú oftast til og frá arbeiðsplássinum/útbúgvingarstaðnum?

- ◯ Við bili
- ◯ Við bussi
- ◯ Við súkklu
- ◯ Til gongu
- ◯ Eg fór ikki til nakað arbeiðspláss/útbúgvingarstað

Annað

11. Í síðstu viku, hvussu fór tú oftast til handils?

- ◯ Við bili
- ◯ Við bussi
- ◯ Við súkklu
- ◯ Til gongu

Annað

12. Í síðstu viku, hvussu fóru børnini í húskinum oftast í vøggustovu, barnagarð ella líknandi?

- ◯ Við bili
- ◯ Við bussi
- ◯ Við súkklu
- ◯ Til gongu
- ◯ Eingi børn, sum verða ansað í vøggustovu, barnagarði, eru í húskinum

Annað

13. Í síðstu viku, hvussu fóru børnini í húskinum vanliga í skúla?

- ◯ Við bili
- ◯ Við bussi
- ◯ Við súkklu
- ◯ Til gongu
- ◯ Eingi børn í skúlaaldri eru í húskinum

Annað

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14. Í síðstu viku, hvussu kom tú oftast til frítíðarítriv, sum ikki vóru í grannalagnum (tvs. minni enn 500 m frá bústaðinum)?

- ◯ Við bili
- ◯ Við bussi
- ◯ Við súkklu
- ◯ Til gongu
- ◯ Eg gangi ikki til nakað frítíðarítriv, ið er longri enn 500 m frá bústaðinum

Annað

15. Í síðstu viku, hvussu komu børnini í húskinum oftast til frítíðarítriv, sum ikki vóru í grannalagnum (tvs. minni enn 500 m frá bústaðinum)?

- ◯ Við bili
- ◯ Við bussi
- ◯ Við súkklu
- ◯ Til gongu
- ◯ Tað eru eingi børn í húskinum, sum ganga til frítíðarítriv, ið er longri enn 500 m frá bústaðinum

Annað

Spurnakanning um internet, nærumhvørvið og ferðavanar

Umstøður at ganga, súkka og at nýta buss

16. Hevði tú súkklað oftari, um betri súkklubreytir vóru?

Ógvuliga sannlíkt	Sannlíkt	Ósannlíkt	Ógvuliga ósannlíkt
◯	◯	◯	◯

17. Høvdu børnini í húskinum súkklað oftari, um betri súkklubreytir vóru?

Ógvuliga sannlíkt	Sannlíkt	Ósannlíkt	Ógvuliga ósannlíkt	Ikki viðkomandi
◯	◯	◯	◯	◯

18. Hevði tú brúkt oftari buss, um busstænastan var betri?

Ógvuliga sannlíkt	Sannlíkt	Ósannlíkt	Ógvuliga ósannlíkt
◯	◯	◯	◯

19. Høvdu børnini í húskinum brúkt oftari buss, um busstænastan var betri?

Ógvuliga sannlíkt	Sannlíkt	Ósannlíkt	Ógvuliga ósannlíkt	Ikki viðkomandi
◯	◯	◯	◯	◯

20. Hevði tú oftari fari til gongu til handils, um matvøruhandilin var í grannalagnum (minni enn 500 m frá bústaði tínum)?

Ógvuliga sannlíkt	Sannlíkt	Ósannlíkt	Ógvuliga ósannlíkt	Matvøruhandil er í grannalagnum
◯	◯	◯	◯	◯

21. Hevði tú umhugsað at sloppi tær av við ein bil, um býtis/deilibilur var innanfyri 100 metrar frá tínum bústaði?

Ógvuliga sannlíkt	Sannlíkt	Ósannlíkt	Ógvuliga ósannlíkt	Havi ongan bil
◯	◯	◯	◯	◯

Spurnakanning um internet, nærumhvørvið og ferðavanar

Internetið

22. Hvussu ofta ert tú vanliga á internetinum?

- ◯ Dagliga
- ◯ Minst eina ferð um vikuna
- ◯ Minni enn eina ferð um vikuna

23. Arbeiðir tú vanliga heimanifrá?

- ◯ Ja, fleiri enn 3 dagar um vikuna
- ◯ Ja, 1-2 dagar um vikuna
- ◯ Ja, minni enn 1 dag um vikuna
- ◯ Nei, men tað hevði borið til
- ◯ Nei, eg fái ikki arbeitt heimanifrá í mínum arbeiði
- ◯ Eg havi einki arbeiði

24. Brúkar tú internetið í arbeiði tínum?

- ◯ Ja
- ◯ Nei
- ◯ Eg havi einki arbeiði

25. Áleið hvussu ofta brúkar tú Skype?

- ◯ Dagliga
- ◯ Minst eina ferð um vikuna
- ◯ Minni enn eina ferð um vikuna
- ◯ Eg brúki ikki Skype

26. Áleið hvussu ofta ert tú inni á Facebook?

- ◯ Dagliga
- ◯ Minst eina ferð um vikuna
- ◯ Minni enn eina ferð um vikuna
- ◯ Eg havi ikki vangamynd á Facebook

27. Ert tú við í bólki á Facebook, sum hevur samband við grannalagið, sum t.d. bólkurin hjá eigarafelagnum?

- ◯ Ja
- ◯ Nei

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28. Brúkar tú netbanka til flytingar og gjøld?

- ◯ Ja
- ◯ Nei

29. Hevur tú Mínboks (persónligur postkassi á internetinum, har til ber at fáa post frá virkjum og stovnum)?

- ◯ Ja
- ◯ Nei
- ◯ Veit ikki

30. Hvussu fært tú oftast hendur á vørum, sum tú keypir á internetinum?

- ◯ Eg avheinti tær á posthúsinum ella frá sølufólki
- ◯ Eg fái tær sendar til hús
- ◯ Eg havi ongantíð keypt nakað á internetinum

Annað

31. Hevur tú nakrantíð keypt mat á internetinum?

- ◯ Ja, fleiri enn 2 ferðir
- ◯ Ja, 1-2 ferðir
- ◯ Nei

Spurnakanning um internet, nærumhvørvið og ferðavanar

Nærumhvørvið

Orðið "grannalag" verður brúkt fleiri ferður í næstu spurningunum. "Grannalagið" skal skiljast sum nærumhvørvið, upp til áleið 500 metrar frá tínum bústaði.

32. Spæla børnini í húskinum javnan við onnur børn í grannalagnum?

- ◯ Ja
- ◯ Nei
- ◯ Eingi børn eru í húskinum

33. Ganga børnini í húskinum til nakað frítíðarítriv í grannalagnum?

- ◯ Ja
- ◯ Nei
- ◯ Eingin børn eru í húskinum

34. Møtist tú við grannum, og/ella gongur tú til nakað frítíðarítriv í grannalagnum?

- ◯ Ja, minst eina ferð um vikuna
- ◯ Ja, 1-3 ferðir um mánaðin
- ◯ Ja, minni enn eina ferð um mánaðin
- ◯ Nei

35. Hevur tú nakrantíð verið til felagstiltak í grannalagnum, eitt nú nýggjársbál ella ruddingardag?

- ◯ Ja, minst 2 ferðir hetta seinasta árið
- ◯ Ja, 1 ferð hetta seinasta árið
- ◯ Ja, men tað er meiri enn eitt ár síðani
- ◯ Nei

36. Fært tú ella keypir tú regluliga mat, t.d. grønmeti, frukt, fisk ella egg, frá fólkum í grannalagnum?

- ◯ Ja
- ◯ Nei

37. Hevur tú nakrantíð lænt, fingið, leiga ella keypt eitthvørt, t.d. borimaskinu ella ein kopp av sukri, frá fólki í grannalagnum?

- ◯ Ja, innanfyri seinasta hálva árið
- ◯ Ja, innanfyri seinasta árið
- ◯ Ja, men tað er meiri enn eitt ár síðani
- ◯ Nei

38. Hevur tú nakrantíð verið til ein loppumarknað í grannalagnum (minni enn 500 m frá tínum bústaði)?

- ◯ Ja, innanfyri seinasta árið
- ◯ Ja, men tað er meiri enn eitt ár síðani
- ◯ Nei

39. Hvussu ofta brúkar tú felags uttanduraøkini í grannalagnum, t.d. til túrar ella ítrótt?

- ◉ Dagliga
- ◯ Minst eina ferð um vikuna
- ◯ Minni enn eina ferð um vikuna
- ◯ Ongantíð

40. Hvussu oftan brúka børnini í tínum húski felags uttanduraøkini í grannalagnum?

- ◯ Dagliga
- ◯ Minst eina ferð um vikuna
- ◯ Minni enn eina ferð um vikuna
- ◯ Eingin børn eru í húskinum

Spurnakanning um internet, nærumhvørvið og ferðavanar

Pástandir

Nú koma nakrir pástandir, sum flestir hava við internet og tænastu at gera. Tú skalt svara, um tú ert samd/ur ella ósamd/ur, við teir einstøku pástandirnar.

41. Eg hevði viljað arbeitt oftari heimanifrá!

◯ Samd/ur ◯ Ósamd/ur ◯ Veit ikki

42. Internetið hevur økt um samskiftið í grannalagnum!

◯ Samd/ur ◯ Ósamd/ur ◯ Veit ikki

43. Eg hevði viljað, at tað vóru fleiri frítíðarmøguleikar í mínum grannalagi (minni enn 500 metrar frá tínum bústaði)!

◯ Samd/ur ◯ Ósamd/ur ◯ Veit ikki

44. Eg hevði viljað, at tað í størri mun enn nú, var gjørligt at keypa mat og gerandisvørur umvegis internetið og fingið vørurnar koyrdar heim!

◯ Samd/ur ◯ Ósamd/ur ◯ Veit ikki

45. Eg hevði viljað, at tað var gjørligt at avgreitt fleiri mál, so sum at fylla oyðubløð út, umvegis internetið!

◯ Samd/ur ◯ Ósamd/ur ◯ Veit ikki

46. Internetið hevur økt um mín flutningstørv!

◯ Samd/ur ◯ Ósamd/ur ◯ Veit ikki

47. Internetið hevur minkað um mín flutningstørv!

◯ Samd/ur ◯ Ósamd/ur ◯ Veit ikki

Spurnakanning um internet, nærumhvørvið og ferðavanar

Takk fyri at tú svaraði spurnablaðnum!

Tá tú trýstur á knøttin "Færdig" niðanfyri, váttar tú, at svør tíni kunnu brúkast sum grundarlag í ritgerðini.

Um tú vilt vera við í dráttinum um eitt gávukort frá FK, skrivað so t-post adressu í teigin niðanfyri.

48. T-postur:

49. Í samband við kanning av ferðavanum skulu 10-20 samrøður við einstaklingar gerast. Samrøður fara at vara uml. ½ tíma, og verða hildnar umvegis Skype.

Hevði tú viljað verið við í samrøðu um ferðavanar?

- ◯ Ja
- ◯ Nei

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