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Department of Economics

Are we there yet?

- A case study on SLU carpark management policy

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Abstract

With the technological advances that has come up since the industrial revolution our standard of living has gone up. With these advances a line of environmental and social problems has emerged. The United Nations has come up with a wide range of sustainable development goals to help combat these problems. Swedish Agriculture of Science, SLU are in line with the goal “Climate Action” and has made changes to their environmental policies to achieve their vision of becoming climate neutral by the year 2027. One proposal to these environmental policies is to introduce a carpark management policy that would install a fee on their three main campuses Alnarp, Ultuna and Umeå and with the hope of leading their employees looking for other alternatives for workplace travel.

The aim of this study is to investigate if the considered carpark management policy on SLU campus in Ultuna, Alnarp and Umeå is a possible way of action to create a behavioural change in the employees workplace travel. More specifically the study will investigate how synergies between soft- and hard transport polices influence the SLU employees. This study will apply a qualitative method with an inductive approach. To investigate how these synergies influence the SLU employees, this study has used focus group interviews located at Alnarp, Ultuna and Umeå.

The results from this study indicate that if SLU wants to create a behavioural change in the employees workplace travel, then they need to introduce positive incentives to compliment the proposed carpark fee.

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1 Introduction

The purpose of the introduction chapter is to present the study's background, the primary factors for the problem, the aim and the delimitations. An outline of the study's structure will also be presented.

1.1 Problem background

There is no doubt that we owe the industrial revolution for the high standard of living and the technological advances that has been developed in the last century such as affordable energy, high production, free available information systems and fast transportation. There are also few leaders in the world who would deny that the advances we have achieved did not come with a line of environmental and social problems (Doppelt, 2017). Some of the environmental problems we face today are the increase in greenhouse gas emissions, pollution from toxic waste and declining biodiversity from the use of natural resources (Tietenberg & Lewis, 2016; Doppelt, 2017). All of these problems are interlinked and will lead to cascading effects with time. Human health will become more and more affected by the pollutions such as smog that are exacerbated by the warmer temperatures (Tietenberg & Lewis, 2016).

The world's economic activity has steadily increased, with it the environmental problems triggered by these activities have also increased (Tietenberg & Lewis, 2016). Many of today's businesses are seeing these challenges as opportunities and are working towards making industries and work places strive for a more sustainable development (Doppelt, 2017).

It can be hard to find one common definition for sustainability, but "Our Common Future", also well known as, "the Brundtland Report" is the most frequent definition that's used for sustainable development (IISD, 2018). In "Our Common Future" (1987) they define it as "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs". The importance of sustainability has led the United Nations (UN) to create 17 sustainable development goals that is to be met universally by all countries by the year of 2030 (IISD, 2018).

Number 13 in UN:s sustainable development goals is called "Climate Action" which focuses on combating climate change and its impacts (UN, 2018). Climate change is something that affects every country in the world and it affects the human population through lives and national economies (Sustainable development, 2018). Greenhouse gas emissions from human activity are one of the main drives of climate change and are now at their highest levels in history. With the increase of greenhouse gas emission the world's average temperature is expected to increase with more than three degrees Celsius by the end of this century (UN, 2018). Climate change is somethings that affects everyone on a global scale, meaning that emissions anywhere affect people everywhere. These problems lead to UN:s climate change conference COP21 in Paris December 2015, where 175 states agreed to adopt the Paris Agreement.

The Paris Agreement was created to combat climate change and to help build up the necessary activities for a sustainable low carbon future. The aim of the Paris Agreement is to bolster the world's response to climate change by making sure that the global temperature for this century does not rise more than two degrees Celsius above pre-industrial levels. The agreement also aims to make it more accessible for countries to handle the impacts of climate

change. To make these aims possible provisions of financial resources, new technology and improved capacity-building is needed to support developing countries, to be able to, reach their own national objectives. All parties that signed the Paris Agreement are required to make their best effort through nationally determined contributions and follow a broad array of guidelines (UNFCCC, 2018).

Swedish University of Agricultural Sciences (SLU) are constantly working on making their development more sustainable. In the year 2011 SLU got a new environmental policy, which all employees shall follow (Swedish University of Agricultural Sciences, 2015). These are the following:

- SLU shall contribute to an environmental, socially and financially sustainable development.
- Environmental thinking and environmental aspects are to be integrated in all decision-making and be a part of all the operations within SLU
- SLU:s environmental work is a long-term process that is built upon constant improvements with environmental laws as its foundation.

This environmental policy has led to SLU creating environmental goals to help them in this process. SLU:s vision is to be climate neutral by the year of 2027. To be able to achieve this vision they have identified six main focus areas (SLU, 2018a):

- 1) All of the electricity that SLU purchase or consume shall come from fossil-free sources
- 2) All heating/cooling system that SLU purchase or consume shall come from fossil-free sources
- 3) All SLU owned vehicles, machines and equipment shall be run on fossil-free fuel
- 4) The procurement of goods and services shall be characterised by climate awareness
- 5) Emissions from business travel within SLU shall be reduced according to existing action plan
- 6) Climate compensation

SLU created a climate fund in the year of 2014 to help as compensation for their business travels. Every flight travel gets an extra fee of 120 SEK (150 SEK for Uppsala employees) and the fee is the same on domestic flight travel as well as overseas flight travel. This fee is placed in the climate fund which is then used by SLU for environmental friendly purposes. The funding is then to be used to support and encourage IT-travel and it can also be used to fund a climate project that is run by SLU employees (SLU, 2018b).

The criteria to be able to apply for the climate fund are;

- The project shall have a positive effect on SLU:s climate impact, calculated in reduction of the number of carbon dioxide equivalents.

Travel is a big part of people's lives, for example travel to work or other activities. When we travel we can experience some of the environmental challenges with our transport system. A transport system should both support the movement of people and the goods in the economy, but at the same time it should ensure that the impacts on the environment are within acceptable limits (Taylor, 2007).

A workplace travel plan is a strategy used by companies, corporations and governments alike for managing the travel caused by their business. The aim of a workplace travel plan is to reduce the environmental impact, congestion and at the same time promote a healthier lifestyle (Taylor, 2007). This is typically achieved by creating different measures that supports public transportation, cycling and car sharing. These measures are reinforced with economic incentives and disincentives (Petrunoff et al., 2015).

1.2 Problem statement

Employers have for many years helped their staff with traveling to work, either by giving access to company cars or providing free car parks. To help address public policy objectives, schools, employers and organisations has started to adopt the travel plan concept which helps them with the management of how their students, staff and costumers travel to their location (Roby et al., 2011). There are different motivations to start with a travel plan, but according to the study by Roby (2011) the main motivations to conduct a travel plan is cost- and carbon reduction.

As a part of SLU: s environmental policy and goals, they have started to manage business travels in hopes of reducing their overall effect on the environment. Furthermore, they want to extend their policy and goals to include management of workplace travel. SLU: s infrastructure department have given the task to the environmental unit to investigate if there is a valid cause to introduce a carpark fee on SLU: s campus locations in Alnarp, Ultuna and Umeå and if there is a suitable infrastructure in place to support it. Their hope is that this change will help lead to a reduction in personal car use when driving to work and by doing so, it will help with congestion and to fulfil their vision for the year of 2027, which is to be climate neutral.

Workplace travel plan can be built in different ways. The plan can be built on soft or hard transport policy measures (Cairns et al., 2008). Jones (2003) says that a hard transport policy measure such as the car park fee combined with soft transport policies might increase both the effectiveness and the public acceptance of the measures. There are conflicting studies when it comes to the synergies between soft and hard policy measures. Cairns et al. (2008) shows in his studies that the combination of policies have a positive correlation, while Fuji & Ktamura (2003) and Jakobsson et al. (2002) has failed to show any lasting effects in their studies. With these contradicting results from previous research it could be asked if soft transport policy measures together with hard policies would make the effects of economic incentives and disincentives last in the long-term (Richter et al., 2011).

Further research is needed in this field to investigate the possible effects of hard transport policy measures with the effectiveness of soft transport policy measures (Richter et al., 2011.)

1.3 Aim and delimitations

The aim of this study is to investigate if the considered carpark management policy on SLU campus in Ultuna, Alnarp and Umeå is a possible way of action to create a behavioural change in the employees workplace travel. This study will take a closer look at the synergies between soft- and hard transport policies and how they influence the SLU employees.

To achieve the aim of this study the following research questions will be addressed:

- *How is SLU:s geographical location and public transport infrastructure perceived by their employees?*
- *How do the employees perceive SLU:S soft measured transport policies and are they sufficient to support the new carpark management policy?*

Empirically this study is delimited to a case study of SLU campus. SLU campus is an interesting case to study when it comes to workplace travel plan, because they have three campuses spread out in different locations in Sweden, Umeå campus has already implemented the new environmental policy with carpark management. The lack of research regarding carpark management at a university setting motivates the choice of this case study. This study is delimited to study if SLU has the necessary conditions for a workplace travel plan and will not cover the entire process of making a full plan. The data has been collected through interviews with the employees of SLU and with key people involved with the carparks and environmental policies. The focus has been to gain an overall picture of opinions regarding the policy and infrastructure hence the main body of data has been collected within the university. The theoretical delimitations are restricted by the theoretical framework in chapter two.

1.4 Structure of the report

The rest of the study is organized as shown in figure 1 and shows a brief description of the content in each chapter. Figure 1 is shown to make it easier for the reader to follow the structure and to create a better understanding of the study.

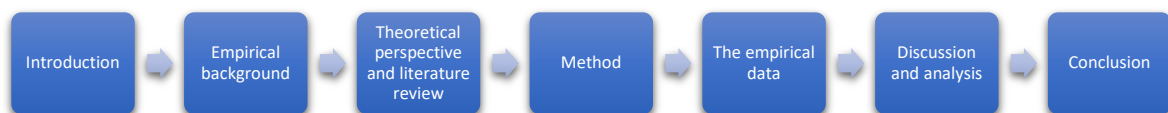


Figure 1, The outline of the study

Chapter 1, Introduction: Contains the study's problem background, problem statement, aim and delimitations.

Chapter 2, Empirical background: Contains previous studies done in this field to help create a better understanding for the reader.

Chapter 3, Theoretical perspective and literature review: Contains relevant theories and the theoretical framework and presents a literature review.

Chapter 4, Method: Presents the research design and methods together with the ethical considerations.

Chapter 5, The empirical data: Gives an overview of the case and its background together with the results.

Chapter 6, Discussion and analysis: Presents a discussion and analysis between the gathered data and theories.

Chapter 7, Conclusion: Presents the conclusions from the case study.

2 Empirical background

The purpose of the empirical background is to present previous studies within this field to help the reader create a greater understanding of the research subject.

2.1 Workplace travel plan

Travel plan models are a package of actions that are implemented to help manage travel generated by day-to-day activities. Travel plans primarily seek to encourage people to use lower impact alternatives and to reduce car travel. Individual travel plans can cover a range of different organisations, a single organisation as well as a collection of organisations. Travel plans are usually implemented by government agencies, hospitals, universities and different sized businesses (Wake et al., 2010). There are different kinds of measures that can be used within the travel plan models (Cairns et al., 2008) for example:

- Workplace travel plans – a package of actions are introduced by the employers aimed at encouraging their employees to travel more sustainably to work.
- School travel plans – a package of actions introduced to individual schools to encourage children and their parents to travel more sustainable to school.
- Teleworking – employers encourage their employees to remote working practices such as working from home.
- Teleconferencing – encouraging the use of telecommunication as an alternative for business meetings instead of business travel.

This study will focus on workplace travel plan and the measures that can be used within this to help encourage the employees for a more sustainable workplace travel.

A workplace travel plan is a strategy for companies to help reduce their transportation impacts and to help create a modal shift with their employees, visitors and customers from driving to work in a more sustainable mean of transport (Rye, 2002). Workplace travel plan also aims to help improve a range of site specific problems, for example parking difficulties, accessibility and congestion (Rye, 2002). The literature on workplace travel plan suggest that a well-executed plan can typically reduce car use by 15-20 % and up to as much as 25 % if parking management and bus subsidies are included (Cairns et al., 2008).

To successfully install a workplace travel plan that will sustain itself over a long period of time, it is important that the travel plan offer benefits to the organization (Roby, 2010). These benefits often evolve around improving an organizations environmental image and expanding their “environmental market” (Rye, 2002). When creating a workplace travel plan a company can choose to use both “soft” and “hard” measures to encourage change. The differences between “soft” and “hard” measures are that the “hard” measures can be described as physical improvements to transport infrastructure or operations, whereas, the “soft” measures are seen as initiatives that encourages alternatives for driving alone to work such as raising awareness and creating transport access guides (Cairns et al., 2008; Petrunoff et al., 2015).

Within the workplace travel plan there are three major implementation mechanisms for actions which work on organizational level. These actions are: policy (parking management policy and public transportation subsidies), infrastructure (public transport availability and

bicycle lanes) and behavioural change programs (walking and bicycle programs) (Petrunoff et al., 2015).

According to Cairns et al (2008) parking management can be seen as the most important factor which will determine the degree of success within the workplace travel plan. There are many ways to address parking management that has been proved to be effective, on-site parking charges, permit system which determines who is entitled to park and increased salary for not taking the car to work. In previous studies organizations that address parking had achieved more than double in car use reduction compared to organizations that did not.

In order for parking management to work it is important to incorporate it with “soft” measures to help raise awareness within in organization to why this change is important. Support from both the senior and middle management is critical (Petrunoff et al., 2015). Marketing and communication with staff should be conducted throughout the entire process of the workplace travel plan. Meetings with staff is a key factor in order to gain feedback and suggestions on further changes (Petrunoff et al., 2015; Cairns et al., 2008). Another important factor for parking management is the availability of public transport and bicycle lanes. To help achieve high level of public transport it is important to have relatively cheap fares which the organizations should help provide to encourage a modal shift (Cairns et al., 2008). Good infrastructure for off-site bus stops and bicycle lanes around the facilities is, as well as, access to showers, changing and lockers seen as important factors (Cairns et al., 2008).

There are issues for consideration when working with workplace travel plan. One of these issues is induced traffic, meaning that people who chooses to reduce their car use might be replaced by other individuals who are attracted by the more available spaces in for example carparks. Therefore, it is important to keep the soft policy measures that have been put in place and the benefits that they provide. This “lock-in” of soft policy measures is important for achieving overall reduction in traffic (Cairns et al., 2008).

Synergy between soft policy measures and between soft and hard policy measures can also be an issue in the sense that it does not have to be positive. The main reasons to use both soft and hard policies are assumed to be; strengthen awareness, enabling larger behavioural change and reaching thresholds. However, there are concerns that when you have reached a certain level of car reduction that it could lower the enthusiasm for introducing new or responding to old measures which can lead to a negative effect (Cairns et al., 2008).

3 Theoretical perspective and literature review

The purpose of this chapter is to present a literature review on workplace travel plan and a description of relevant theories used to investigate workplace travel plan in this context. The main theories in this study are; nudging, social practice theory and dual process theory.

3.1 Social Practice Theory

The social practice theory, in contrast to, other traditional theories within behavioural change focuses more on the practice itself, rather than the individuals and the social structure that surrounds them (Hargreaves, 2011). Warde (2005) describes it as an individual's action should not be seen as the result of their values, attitudes and beliefs constrained by a contextual barrier. It is rather seen as occurring and embedded within the social practice. Social practices can be seen as various performances of routines that people see as “normal” ways of life (Shove, 2004). Social practice theory diverts the attention of individual decision making and focuses on the “doing” of various social practices (Shove & Warde, 2002). The center-stage is no longer the individuals themselves but they are seen as “carriers” of social practices, carrying out various tasks and activities that is required for the practice (Reckwitz, 2002).

Throughout an individual's life they come in contact with a wide variety of different practices and it is through these engagements with practices that individuals gain an understanding of the world around them (Warde, 2005). Bringing a change in behavioural patterns does not depend upon educating and persuading individuals, but instead, it focuses on changing the practices around them to reach the desirable goals (Southerton et al., 2004). Warde (2005:140) puts it as, “the principal implication of a theory of practice is that the sources of change behaviour lie in the development of practices themselves”.

Reckwitz (2002) model of social practice theory shows how the theory can be used to analyse and gain a better understanding of practices. The model is based upon three components; 1) competence, 2) meanings and 3) materials (Hargreaves, 2011).

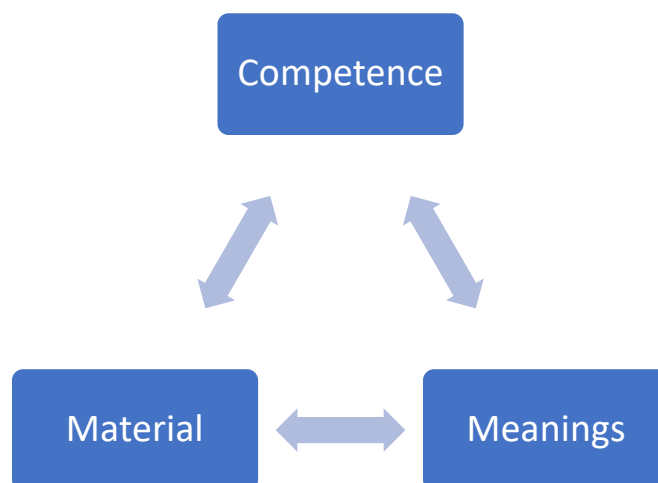


Figure 2, Social practice theory structure (Reckwitz, 2002).

Competence stands for the practical knowledge of the practice and procedure skill to execute the practice. Steg (2005) explained meanings by using three categorisations to include all the

relevant meanings; symbolic and affective meanings, instrumental meanings and independence. The symbolic and affective meanings include feelings of sensation, power, status and superiority. Instrumental meanings view the choices that provide the highest utility or relative advantage, while independence includes factors such as individual freedom. Materials include infrastructure, objects such as different kinds of hardware and the human body. The three components are integrated in to each other by skilled practitioners through regular and repeated performance (Hargreaves, 2011). Hargreaves (2011, pp.83) gives an example to better explain this, “football involves a specific set of images (e.g. about the rules and aim of the game and the appropriate level of emotional engagement), skills (e.g. of dribbling and kicking a ball), and stuff (e.g. a ball and a goal). The links between these elements are then (re)produced and maintained by skilled practitioners in the course of a game of football”. The changes happen in the links between these components, where the practitioners “carries” the required information to make a change happen (Reckwitz, 2002). Practices emerge, stabilize and disappears as the links between these components are made and broken (Hargreaves, 2011).

Social practice theory is suitable to use in situations where you want to achieve a sustainable behaviour. According to Warde (2005) to be able to achieve long-term results in sustainable behaviour it is not enough to persuade the individuals to change, instead the aim is to change the practice to a more sustainable option. When the aim is to change a behaviour to be more sustainable the focus often shifts to the problems that it causes instead of the behaviour itself. Social practice theory focuses more on the activities that leads up to the problem and how to change them. If the environmental problem is the release of carbon emissions, then the focus should be on changing the activities that it associated with carbon emission (Shakian & Wilhite, 2014).

3.2 Nudging

People tend to make decisions that are bad for the individual and the society as a whole and should, because of this, get help to make better decisions (Thaler & Sunstein, 2003). There are many reasons why people make bad choices, for example they might not give full attention to their options. People also tends to follow their previous patterns and choosing options that will give them the “least resistance”, meaning that they will take the option that is the easiest for them (Vallgård, 2012). Apart from people following their previous patterns they might also have a lack of complete information, meaning that they do not have enough information to know about all their options and all their preferences (Vallgård, 2012). Because people sometimes cannot take the best decision for themselves, they should be help by “choice architects” that will nudge them towards better decisions (Vallgård, 2012).

Nudging is a new method which tries to carefully leading people towards a desirable outcome, without not necessarily trying to change people’s own values and opinions (Mont et al., 2014). Nudging is trying to lead people to a desirable outcome, but people can still make their own way and is not forced upon any direction (Mont et al., 2014). The problem with nudging is trying to address that people sometimes makes decisions that are bad for their own wellbeing and nudging is a way to help those people make better choices (Vallgård, 2012; Thaler & Sunstein, 2003). The goal with nudging is to help affect the individuals’ automatic responses by changing their choice architecture (Mont et al., 2014). The choice architecture should be constructed in such a way to change the physical and social environment. The way the choices are presented will increase the chances to change people’s behaviour (Vallgård,

2012). To help individuals make better decisions often comes down to helping them make more sustainable or healthier alternatives (Mont et al., 2014). Nudging is used to help people make better decisions for the environment and their health, what “better” presumes to be is subjective and in the end is up to the individual themselves (Thalen & Sunstein, 2003).

Both big and small changes in the social environment can have big effects on people’s behaviour, nudges can be found everywhere, even if they are not seen (Thalen & Sunstein, 2009). The choice architecture that we have built up for ourselves affects our decisions, by creating user friendly options in our choice architecture people can be nudged towards directions to improve their lives at the same time as they get freedom of choice (Thalen & Sunstein, 2009). There are many methods to nudge people; options might be arranged so as the more environmental friendly option is the default one and the individual will have to make an active decision to opt out of it. An example of this is to establish more attractive bicycle lanes which will make it easier accessible than for instance cars (Vallgård, 2012).

Today nudging is a common tool in both the private and public section to help people make better environmental and health decisions (Vallgård, 2012). It can be used to both decrease an unfavourable behaviour and to promote a favourable behaviour, for example taking the bus or bicycle to work (Thaler & Sunstein, 2009). Corporations have used similar strategies to nudging to attract customers, but there is a distinct difference between these. These strategies belong mainly to the traditional marketing that gives advantages to the corporations. Nudging on the other hand, is there to help people make decisions that are better for the individual and the society as a whole (Mont et al., 2014).

According to Sugden (2009) it is important to be aware of who or whom is nudging the individuals behaviour and that there are risks with trusting that nudges is always better for the individual. Abuse of this method can lead to an unethical behavioural change. It is up to the choice architect to make sure that the options that an individual has are ethical correct with making the environment and the individual’s health better (Vallgård, 2012).

3.3 Theory of planned behaviour and habit

To be able to predict and explain behavioural patterns is a key issue in attitude theory (Verplanken et al., 1998). In the literature the focus is on psychological behaviour theory specifically in modal shift/choice research, the theory of planned behaviour (TPB) has been widely used for explaining and understanding intended behaviour (Chen & Chao, 2009). TPB is an extension on the previous theory by Ajzen & Fishbein theory of reasoned action (TRA) which is based on people having complete volitional control of their actions. Ajzen later realized that TRA is too limited of a theory since the theory is designed to predict and explain all manners of social behaviour, even if a behaviour in principle has volitional control it can still pose difficulties in execution (Ajzen, 1991).

The main components of TPB are attitudes, subjective norms and perceived behavioural control (Chen & Chao, 2009). When it comes to behavioural control there are both external and internal factors that can weaken the performance of a specific behaviour. The factors include knowledge extent of which information a person possesses, physical and mental capabilities, social support, emotions, compulsions and the presence of external barriers (Ajzen, 2005). In order for people to have control over their behaviour it is required that they can act on their intentions to the extent that they have the required information, skills and

abilities as well as other internal factors to overcome any external factor that might interfere with said behaviour (Ajzen, 2012). When a person has a high level of behavioural control then intentions alone should be able to predict behaviour, but when the level of behavioural control is low then intentions and control needs to interact to help predict behavioural performance (Ajzen, 2012).

TPB is based on that an individual's behaviour can be predicted on their behavioural intention and their perceived behavioural control. The intentions themselves are shaped by attitudes, subjective norms and perceived behavioural control (Chen & Chao, 2009). People generally have a different amount of behavioural beliefs to any specific behaviour and each of these beliefs that an individual has, is linked to an outcome where each of these outcomes has a subjective value. These beliefs and outcomes combine will produce a positive or negative attitude towards a specific behaviour (Ajzen, 2012).

The subjective norm is a combination of several normative beliefs which is based on a belief that a referent other (for example a society) wants us to perform a specific behaviour. Beliefs can be formed around what is expected of a certain individual by being told what to do (injunctive norms) or based on observed actions of important social referents (descriptive norms). Subjective norms are independent of attitudes toward the specific behaviour, meaning that people can have a favourable attitude for a specific behaviour and still remark social pressure not to perform it and vice-versa (Ajzen, 2012).

Perceived behavioural control is the extent to which an individual believe they can perform a behaviour if they wish to do so (Ajzen, 2012). Perceived behavioural control is largely based on Albert Bandura's previous work on self-efficacy, Bandura says that self-efficacy refers to people's beliefs in their capabilities to organise and execute the required actions to perform a specific behaviour. The way self-efficacy can influence performance is by perseverance, the more people believe they can perform a specific intended behaviour the more likely they are to persevere and therefore succeed (Bandura, 1997). In TPB the role of perceived behavioural control takes a step further than perseverance. TPB is designed to be applicable to all types of behaviour and not only behaviours that people are motivated to perform. In TPB perceived behavioural control is seen as the third determinant of behavioural intentions. The more favourable an individual's attitude, subjective norms and their belief in their own capabilities, the stronger their behaviour intentions are. Perceived behavioural control can indirectly influence behavioural performance by the effect on its intention to engage in a behaviour (Ajzen, 2012).

These three determinants are each based on a belief structure: behavioural, normative and control (Chen & Chao, 2009). The behavioural beliefs structure helps produce an attitude that is either favourable or unfavourable toward to specific behaviour. The normative belief structure is the results from the perceived pressure created by the subjective norms and the control belief structure is where the perceived behavioural control comes in regard to the performance of a specific behaviour (Ajzen, 2012). All these beliefs taken together creates the formation of a behavioural intention which determines the actual behaviour (Chen & Chao, 2009).

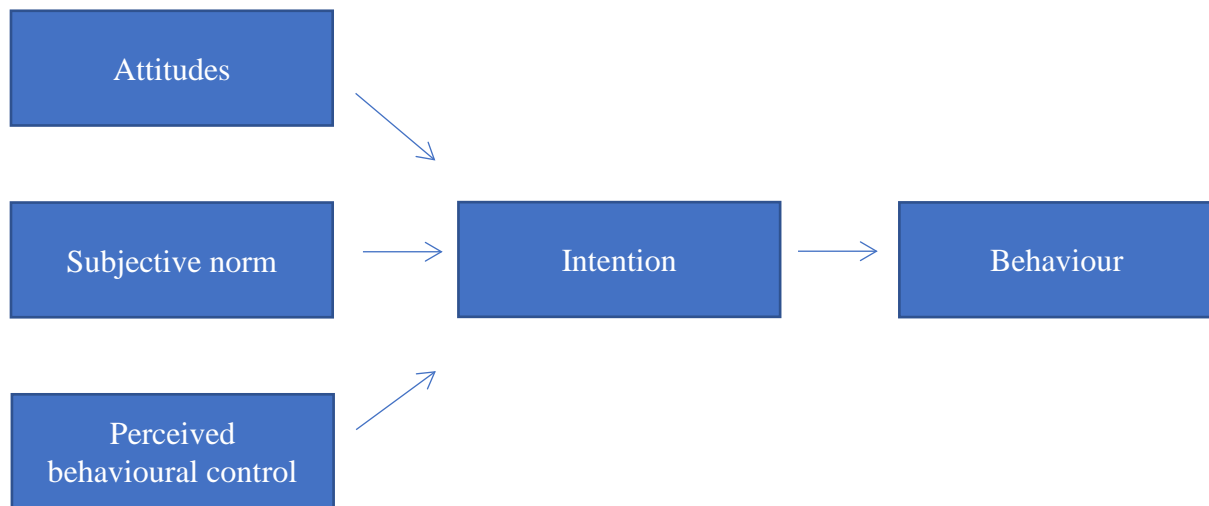


Figure 3, Human decision process (Ajzen, 1991)

In the case of travel mode the behavioural construct could be described as an individual considering the pros and cons of the available travel options and from those attitudes are created towards using the different ways of travel based on those circumstances. The individual could also perceive social pressure not to take the car to work, and then the individual has its own perceptions on how feasible it is to be able to perform these options. Here attitude, subjective norm and perceived behavioural control together and creating a behavioural intention from which behavioural predictions can be made (Verplanken et al., 1998) see figure 3.

The concept of habit is a learned act over time and become an automatic response in different situations. TPB focuses on the reason based on qualification of behaviour, but when behaviour is repeated with satisfactory results and becomes habitual it may lead to the loss of its reasoned characteristics. Behaviour in this case is guided by the automaticity of stimulus-response rather than by attitudes and intentions (Verplanken et al., 1998). According to Chen & Chao (2009) travel mode choice can be seen as more than a deliberate process as in TBP but also as a behavioural habit. Chen & Chao (2009) also says that it can be argued that past behaviour can be a better indicator to future behaviour. Habitual behaviour only requires a small amount of attention, when an individual's control on behavioural intentions weakens and as long as circumstances around the behaviour is relatively stable past choices can affect future behaviours. Therefore behaviour can be seen as not completely reasoned and past behaviour can have an important role in predicting future behaviours (Chen & Chao, 2009).

3.4 Dual Process Theory

Dual process theory is just not one theory, but multiple theories on decision making, reasoning, social cognition and other various topics (Evans, 2014). Many of these theories have one part in common which is that the mind has two systems of processing (Evans, 2014). In today's changing environment there are two distinct mental activities that help shape and organize our human behaviour; decision making and action selection (Kitajima & Toyota, 2013). Evans and Frankish (2011) in their book "Two minds" further explains these differences of mental activities and categories them into system 1 and system 2 which can be better described as short-term and long-term.

System 1 which is used for short-term decisions uses an unconscious and automatic process in its decision making (Kitajima & Toyota, 2013). The short-term decisions are fast and automatic and used with high frequency (Evans, 2014). For this system of decision making the effort is low and not taxing, the short-term decision process focuses only on “the present” and only gives direct satisfaction (Evans & Frankish, 2011). System 2 uses a more conscious and deliberate process and focuses more on long-term decisions (Kitajima & Toyota, 2013). In comparison to system 1 the long-term decision process is planned and deliberate, where the decisions are slow, controlled and made in a low frequency (Evans, 2014). The frequencies of long-term decisions are lower because they focus more on the future instead of “the present” and more effort is required.

Kahneman, Nobel Prize winner in economics in 2002 has further described the “two minds” theory and uses the terms slow and fast thinking, which can be seen in figure 4 (Kitajima & Toyota, 2013).

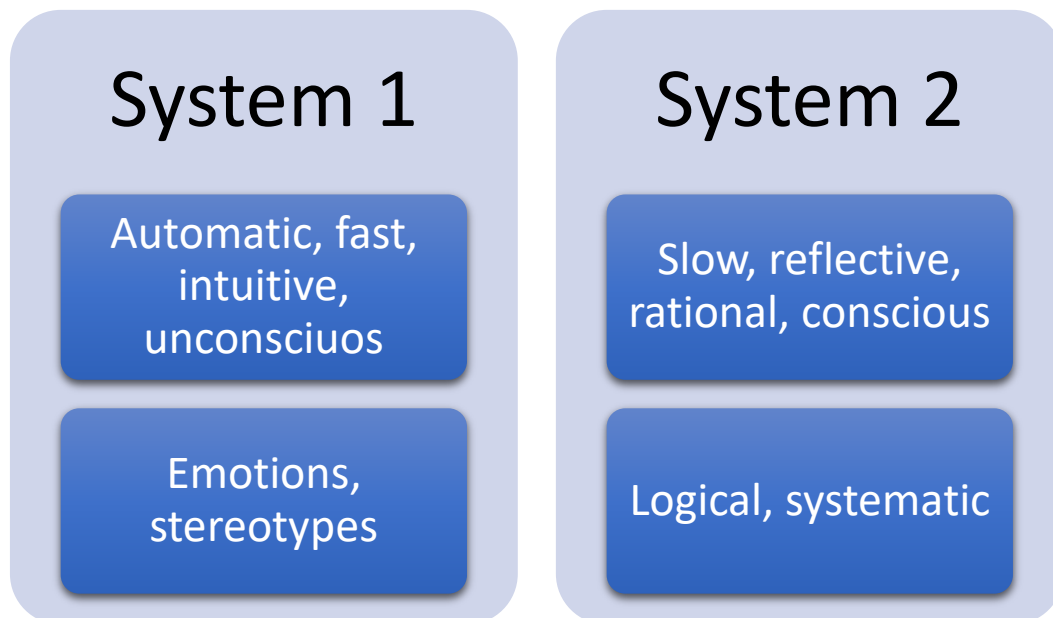


Figure 4, Two systems in dual process theory (Kahneman, 2011).

People have two systems of decision making, where system 1 is automatic, fast, intuitive and based on emotions while system 2 is reflective, slow and rational (Mont et al., 2014). The automatic system handles most of the everyday life decisions, while the reflective system handles the bigger decisions as for example buying a new house (Mont et al., 2014).

The most used system is the automatic, because it is used in our day to day life, which can often lead into situations where people jump to ill-advised conclusions (Kahneman, 2011). People will overtime learn from their experiences with the reflective system and start applying the knowledge they have gathered into their automatic system, which in turn will lead to more efficient decisions.

3.5 Theoretical framework

With the support of the explained theories in chapter 3 it can be proposed that behavioural change requires input from different perspectives and can also be studied from different perspectives. With this in mind the researcher has designed a theoretical framework where the role is to assist the data collection and analysis to identify insights on the case study research.

The first step in this framework is the analysis of the practise of workplace travel and why SLU employees drive their car to work, where social practise theory will be used to help the researcher gain understanding and input in the analysis. The second step is the proposed carpark management tool that SLU is considering and here the theory of nudging will be used to analyse if the tool has the necessary elements to be properly implemented on SLU:s campuses and if the tool itself fulfils the steps to help nudge people to a behavioural change. The third step theory of planned behaviour is used to gain an understanding of the employees' behavioural patterns regarding workplace travel and the different available travel modes they have at their disposal, as well as, gaining an understanding of the habits created around these patterns. The last part of the analysis dual process theory will be used to understand how soft measure policy changes may help the SLU employees to change their workplace travel behaviour.



Figure 5, Theoretical framework

By following this process the researcher will not necessarily develop a new theory, but the researcher will be able to investigate different layers of behavioural change and see if these theories complement each other in being able to analyse the whole picture. The process of bringing these four theories together will help the researcher answer the research questions and ultimately the purpose of this study.

4 Method

This chapter presents and motivates the methodological approach and design that will contribute to reaching the study's purpose. It will also aim to present how the data has been collected and analysed. The chapter will bring up questions regarding critical factors that may impact the study.

4.1 Research approach, strategy and design

There are mainly two different research approaches for how the researcher collects data; quantitative or qualitative (Bryman & Bell, 2013). In quantitative research a deductive logic is adopted, where theoretical concepts or ideas are tested by examining the relationship between different variables (Robson, 2011). From these theoretical concepts the researcher deducts hypothesis that will be examined empirically (Bryman & Bell, 2013). The method for collecting data is often fixed before it begins. Therefore a study based upon quantitative research is not suitable when the focus is on individuals and their behaviour (Robson, 2011).

In qualitative research an inductive logic is adopted, where instead of testing theoretical concepts and ideas, the researcher starts with collecting data from where theoretical concepts and ideas may emerge (Robson, 2011). The aim is to create a better understanding of phenomenon by interpret and describe the data with words instead of numbers. Where deductive logic makes hypothesis from theory and then examines it. The inductive logic studies a social phenomenon to find empirical patterns that will lead to a beginning of a theory (Bryman & Bell, 2013).

This study will be using a qualitative research strategy with an inductive logic approach. The reasoning for using an inductive approach is that it gives the researcher an opportunity to collect data and modify theories within the research process. The inductive approach gives the researcher room for their own interpretation of the empirical data collected which is favourable when the field of study is limited in knowledge (Bryman & Bell, 2013).

In this study a flexible design will be used. A flexible research design is typically used in real world studies, for example case studies and grounded theory studies (Robson, 2011). Flexible design is framed within qualitative research, meaning that it is design to use methods that collect qualitative data that will evolve during the process (Robson, 2011). A flexible design is chosen in this study with a phenomenon that the researcher seeks to understand. In Swedish Agriculture of Science, SLU campus represent a part of the future generation of people mainly the students of the university. This study wants to see how synergies between soft and hard transport policies might affect the employees of the university. This is not quantitatively measurable, but could rather be understood by qualitative means.

4.2 Case study

A case study is a design which focuses on understanding the different phenomenon within a single context (Eisenhardt, 1989). Case study can be interpreted in many different ways. It could be, for example a study of an individual person, an organization or a group of people (Robson, 2011). In a case study the researcher collects information about the case by typically

using multiple methods of data collected over a certain period of time (Robson, 2011; Yin, 2009). Case studies can involve either one or multiple cases and they can be analysed in several levels. This leads to a possibility to compare result in between them (Eisenhardt, 1989). A single case can help bring a more depth and understanding of the phenomenon in the context, then if multiple cases were used (Yin, 2013). Case studies can accomplish many different aims, for example it can be used to test theories, generate theories or to provide descriptions (Eisenhardt, 1989). A case study should be considered to be used when the focus of the study is to answer “how” and “why” questions and when the boundaries are not clear between phenomenon and context (Baxter & Jack, 2008).

"Workplace Travel Plan" is an organizational phenomenon that works within a specific context. Because of this, for this study a case study approach was suitable. A gap has been identified by the researcher in the recent literature and has tried to identify how synergies between soft and hard transport policies influence different groups when it comes to workplace travel. In this study these factors will be investigated in the context of SLU campus. Case study is appropriate to use when research fields are unexplored, because it helps reveal how different aspects relate to each other (Eisenhardt, 1989) which is why case study is appropriate for this study. In accordance with Yin's (2013) argument this study will only focus on one case to help bring a greater understanding of the studied phenomenon.

4.2.1 Unit of analysis and choice of case

Miles and Huberman (1994) defines a case as, “a phenomenon of some sort occurring in a bounded context, where the case is in effect your unit of analysis” (p.25). Asking what the study is trying to analyse will help determine and delineate the case (Baxter & Jack, 2008). According to Yin (2013) a well-defined unit of analysis is a critical factor to help the researcher answer the research questions. This study's unit of analysis is workplace travel plan on SLU campus and how the employees of the SLU campus gets influenced by soft- and hard transport policies. The choice of SLU campus as the unit of analysis is because of their forward thinking and because the University specialises in sustainable development and the environment. Since SLU helps represent the future generation of people that will be affected by the ever-occurring environmental change it makes them an interesting unit of analysis. SLU is in the process of extending their environmental policies for carpark management by incorporating a daily fee for parking and it will be interesting how the knowledge of this change will affect the University's employees.

4.3 Data collection

In case study, researchers use multiple data sources with a known feature, which also helps with data credibility (Baxter & Jack, 2008). Collecting data for a case study might be time consuming because of the share volume of it, but there is also an opportunity to gather a greater understanding (Saunders et al., 2007). Primary data sources may include: interviews, direct observation or questionnaires (Baxter & Jack, 2008). Secondary data sources may be collected through articles, e-mail and documentations (Yin, 2013).

4.3.1 Focus groups

In this study focus group meetings will be used to help gather the necessary empirical material to help answer the research questions.

Interviews are a useful tool to gather information for a case study (Yin, 2013). An interview also gives the opportunity to receive interesting and unique answers (Bryman & Bell, 2013). Focus groups are a well-established method which in the past was primarily used for market research to help test products. The growing interest of focus groups as a method to collect data has opened it up to be used more widely in academia, for example research regarding politics and their image (Bryman & Bell, 2013). Robson (2002) explains focus groups as a type of group interview where there are several participants and a moderator to lead the discussions. The discussions are based on a defined topic where the interest lies in the interaction between the group participants. There are two parts to a focus group 1) is the group interview itself where the participants discussed a specific topic and 2) is that the participants are selected due to their involvement with the topic (Wibeck, 2000). Unlike individual interviews where the focus lies between the interviewer and the respondent, focus groups focus on the interaction between the participants of the group (Bryman & Bell, 2013).

Focus groups are distinct compared to traditional interviews in the sense that they focus on exploring a specific theme and that the interest lies in the interactions and how the participants in the group conduct the discussion (Robson, 2002). In qualitative research focus groups are often used to reveal how the participants in the group view the topic. In focus groups there is a moderator who helps steer the discussion so it does not go off topic. The discussion in the focus groups is usually documented by recording, documentation and observation. One of the core strengths with focus groups is its ability to gather broad and in-depth knowledge about a certain topic and provide thoughts and influences (Krueger & Casey, 2000).

The moderator in a focus group builds up the meeting based on an interview guide which can be structured or unstructured. The moderator should have a number of specific questions for when he wishes to steer the interview a certain way. There are five types of questions that should be included in a structured interview guide that regards the opening, introduction, transition, key questions and closure. All these types of questions will help provide data on group dynamics and individual reflection (Krueger, 1998).

The number of focus groups needed for a study depends upon the complexity of the phenomena and the time and resources available (Bryman & Bell, 2013). According to Wibeck (2000) the researcher should stop when they have reached theoretical saturation. In this study five focus groups were used to contribute to the empirical data. Every focus group discussion was recorded and summarized by transcribing.

The desired number of participants in focus groups has been discussed in several theories (Morgan, 2004; Verner & Gilbert, 2006). Groups that have a smaller amount of participants can increase the involvement and belongingness while a larger group makes it easier for the participant to not take part of a discussion. In larger groups it can be harder for the participants to connect with each other which can result in un-personal discussions. A focus group should be in the range of four to six participants which is supported by the theory that with three people one can be secluded and with more than six there is a risk that people don't get to express themselves (Wibeck, 2000).

The data collected through focus groups are dependent on having a well-functioning group in order to achieve this it is required to have a suitable mix of participants, but at the same time it is important that all the participants have the topic in common. There are different factors affecting this, for example demographics such as age, gender and education. The moderator needs to keep this in mind to ensure that the entire group has the chance to express their thoughts (Krueger, 1998).

In order to conduct a focus group, the researcher needs to consider the possibility to recruit the desired participant and if the research problem is suitable for this method (Morgan, 2004). According to Bryman & Bell (2013) there are several strategies for recruiting participants, which include existing list, referrals, random sampling and open solicitations. Robson (2002) says that in focus groups the researcher should avoid recruiting participants through randomized selection and rather choose from a small and broad target group. For this reason the focus group participants were collected through a purposive sampling to help gather the empirical material. Purposive sampling is used when the researcher is not looking for choosing respondents based on randomized sampling, but wants to choose respondents in a strategic way of relevance to the research questions (Bryman & Bell, 2013). This includes both existing list and open solicitation, which was used in this study. The disadvantage of using purposive sampling is that it is not a randomized sampling and it is harder to generalize the results on the entire population (Bryman & Bell, 2013).

In this study two different types of respondents were used for the interviews. The first group of respondents were from Akademiska hus and SLU environmental group to create a picture of how the extension of environmental policy would come together and which of the factors that would change the day to day life at SLU campus. The primary participants for the focus groups were the SLU employees. They were included to give insight on how this extension of environmental policy would affect SLU campus. The participants for the focus groups were chosen from all three SLU campus; Ultuna, Alnarp and Umeå to help represent the entire body of the university and not a single work-department. Different work locations can help deliver different perspectives and together they can give an overall picture of the phenomenon. In order to reach a greater understanding of the synergies between soft and hard transport policy measures the researcher chose to have five focus groups with six participants in each group which follows Wibeck (2000) suggestion on creating a well-functioning group. Three of the five focus groups were held at Ultuna campus and was conducted face-to-face. The last two focus groups were held at both Alnarp and Umeå campus, where Alnarp's focus group was conducted face-to-face with the moderator as with Ultuna but Umeå was conducted through a video-conference where the participants were in Umeå and the moderator in Ultuna. The reason for conducting three focus groups in Ultuna was because it's the largest campus of the three and to be able to get a more accurate representation of the whole university.

4.3.2 Conducting focus group interviews

The first step for collecting the necessary data for this study was to invite SLU employees to participate in the focus groups. In Alnarp and Umeå the head of the environmental units sent out emails to the employees on their respective campus, while in Ultuna the researcher himself sent out the emails to the employees in different institutes. On the emails there were set dates and times that the recipients had to agree with. There were 13 employees who applied to participate in the focus groups, where eight of the participants were woman and five men. The focus groups were split to three different locations, where one was being held

on each campus. In both the Alnarp and Ultuna focus group there were five participants each while there were three participants in the Umeå focus group. Having three participants in a focus group is not ideal and it may have given a different discussion if it had been a larger group. It is also easier for one of the members to be excluded in a group of three. The Alnarp and Ultuna focus groups were done in person while the Umeå focus group was done by teleconferencing with the group sitting in Umeå and the moderator in Ultuna. The focus groups took between 45 minutes to one hour to conduct and all the discussions were recorded and transcribed.

Tabell. The constellation of focus groups

Focus groups	Group Alnarp 2018-04-16 11.15-12.15 am Employees	Group Ultuna 2018-04-27 11-11.45 am Employees	Group Umeå 2018-04-20 10-10.45 am Employees
Women	3	4	1
Men	2	1	2
Total	5	5	3

Table 1 helps illustrate the constellations of the focus groups with the number of participants in each group, as well as, gender and the date it was conducted. SLU has three main campuses and it was decided to have one focus group on each campus to be able to gather data on from each of their perspectives.

4.3.3 Documents

According to Baxter & Jack (2008), the hallmark of case study research is the opportunity to use multiple data sources where each data source is another piece of understanding in a bigger puzzle. In case studies, documentation is one of the more commonly used methods to gather empirical data (Yin, 2009). Documents are used in this study to increase the validity and reliability of the case study and the documents are not affected by the researchers own values and opinions (Bryman & Bell, 2013). In this case study documents have been collected through the internet and e-mail correspondents. The reasoning of using documents is to help support and confirm data collected from other sources.

4.4 Data analysis

One of the problems with qualitative research is the vast amount of unhandy data that is collected through interviews and documents (Bryman & Bells, 2013). When analysing qualitative data it is important to get familiar with the content. There is no substitute for knowing the data (Robson, 2011). Braun & Clarke (2006) argues that thematic coding is a suitable and accessible method to analyse qualitative data, where its strength lies in its flexibility. Thematic analysis is a method where you first analyse, then code and lastly label the data into different groups or themes (Braun & Clarke, 2006). This helps the researcher to organize and describe the data in detail (Braun & Clarke, 2006). Thematic can increase the validity of the research by making it easier to communicate and understand the collected data (Robson & McCartan, 2016).

Thematic coding will be adopted in this case study in order to gain a deeper understanding of the case and to find appropriate theories for interpretation of the collected data. The data gathered from the interviews was first recorded and later transcribed in order to minimize the risk of missing information useful to the study and to gain a familiarity with the data. After the interviews different keywords and sentences were identified and then categorized into different groups and themes. From these themes the researcher was able to link the empirical results to the chosen theories.

4.5 Literature review

Literature review is used to identify and critical analyse relevant available research literature that has information related to the topic being studied (Cronin et al., 2008). The goal is to make sure that the reader is up to date with the latest literature on the topic and help build the groundwork for the justification of additional research in the area (Cronin et al., 2008). It also gives the researcher a starting point on which methods and theories that has been used on previous studies (Bryman & Bell, 2013). Furthermore, give an insight on the analytical approach that is most suited for this field of research (Bryman & Bell, 2013).

For this purpose databases such as Google scholar, Primo, SAGE and Web of Sciences where used to gather literature for the theoretical base. The literature consists of peer-reviewed articles and books, where the base of the study is from peer-reviewed articles.

There are generally two methods of literature reviews, systematic and narrative (Bryman & Bell, 2013). The goal of a systematic literature review is to help the researcher reduce skewedness and bias by adopting explicit procedures (Bryman & Bell, 2013). Narrative literature review is more interpretive in design and used by the researcher to generate understanding of the topic (Bryman & Bell, 2013). In this case study a narrative literature review will be used to generate an understanding of previous work in the field and the methods used.

4.6 Quality assurance

Trustworthiness is an important criterion when it comes to the validity and credibility of quantitative research (Bryman & Bell, 2013). There has been much debate regarding trustworthiness when using flexible design in research (Robson, 2011). With flexible design there is a risk that the research questions will influence the empirical data and the aim of the study (Bryman & Bell, 2013). Guba and Lincoln (1994) argue that there are two terms that are used to access qualitative research; 1) trustworthiness and 2) authenticity, while other researchers such as Bryman & Bell (2013) discusses validity and reliability as two acceptable terms. While terms of trustworthiness are an important factor in qualitative research, Robson (2011) argue that the focus should lie in the explanation and motivation to ensure the quality, rather than the terms used.

4.6.1 Internal and external validity

The means of measuring validity in fixed design is that it can be directly replicated by an independent researcher; this approach is not feasible for a flexible design since they interpret

result by words (Robson, 2011). Validity is a term used to assess the results of the conclusion and if they are logically related (Bryman & Bell, 2013).

Internal validity means that the empirical results should correlate to the theoretical framework (Bryman & Bell, 2013). Triangulation is a method where the researcher combines data from different sources of evidence such as different theoretical perspectives and methodologies to be able to approach the data from multiple perspectives. This in turn will help with increasing the validity of the study (Flick et al., 2004). This study gathered empirical data through semi-structured interviews which were transcribed. Data was also collected through correspondents, e-mail, documents and articles. Several theories were also used, for example, nudging, dual process theory and social practice theory to help increase the validity of the study.

External validity concerns the generalization of the results and how they can be applied to other social contexts and situations. Unlike the internal validity the external can be hard to reach for qualitative research since it is usually based on case studies and small sample size. In order to reach external validity it is important to structure and explain the social context which will help an uninformed person to understand and judge how transferable the content of the study is. It is also important to choose a representative sample to collect the data from in order to improve the generalisation to other context (Bryman & Bell, 2013). This study is built upon a single case study which according to Bryman & Bell (2013) makes it hard to generalise because the case take place in a special context. Flyvbjerg (2006) says that it is possible to reach a certain level of generalisation by being able to apply the theoretical background to other cases.

4.6.2 Reliability

Reliability can be defined as how the results are consistent over time and if the sample size is representative of the entire population (Golafshani, 2003). Drost (2011) says that in order to reach reliability it must be possible to replicate the observations with the same outcome, regardless of whom or in which environment it is done. To insure that the data is reliable it's the researchers responsibility to make sure that it's consistent and accurate (Golafshani, 2003). The researcher in this study has with consideration and carefulness described and explained each steps in the process to help show transparency and to minimize biases. In order to achieve reliability the researcher needs to take an active role sense it is their analytical skills and words that is a part of the results (Bryman & Bell, 2013).

4.7 Ethical considerations

Ethical considerations are a topic that is frequently discussed in research and how it involves the role of informed consent and confidentiality (Kvale & Brinkmann, 2009). When a study includes interview as a way of gathering data it is important to respect and accommodate the respondents. When creating an interview guide the researcher should consider the ethical issues concerning the respondents as well as other possible consequences that could affect the respondent (Bryman & Bell, 2013; Kvale & Brinkmann, 2009). Because this study's empirical data was based on interviews with key informants ethical consideration was extra important.

In awareness to the ethical considerations the researcher of this study started each interview by explaining the reason and purpose of the interview and the study as a whole. The structure and how the data would be used were also explained. All respondents were asked if they accepted to be recorded for the interview and if they wanted to be anonymous. This was done to help minimize the risk of misunderstandings and it is also a way for the researcher to show honesty towards the respondents (Bryman & Bell, 2013).

5 Empirical data

This chapter contains the empirical data of this study and is divided into two parts. The first part begins with a presentation of the case subject SLU. In the second part the case data from the focus groups with the SLU employees will be presented and convey their views on the considered carpark management policy. Correspondents with Akademiska hus will also be presented in this chapter.

5.1 Overview of SLU

SLU is a University in Sweden that is broad based both in its geographical location, sciences and has been active since the year 1977. The university is located in over 30 different places in Sweden where they conduct education, research and environmental analysis. SLU:s main research and education evolves around the development of knowledge about natural, biological land and water resources in a sustainable manner (SLU, 2018c). The slogan of SLU and their brand promise is “*With sustainability in focus – Science and education for sustainable life*” (SLU, 2018d). The latest numbers from the year 2016 shows that SLU has 7123 people within their organisation, where 2774 are full-time employees and 3745 are full-time students (SLU, 2018e).

SLU largest campuses are in Uppsala, Alnarp and Umeå, where the main research and education takes place. Uppsala campus which is located in the middle part of Sweden is the largest out of the three campuses.

Uppsala campus (represented by the green marker in figure 5) is spread out on two location Ultuna and Lövsta. Ultuna which lies in the southern part of Uppsala houses the university management and two of the faculties as well as a large part of the university administration. Most of SLU: s degree programs are given at Ultuna. Sweden’s only University animal hospital is also located here. On the east side of Uppsala lies Lövsta livestock research centre (SLU, 2018f). Ultuna is approximately 6.5 kilometres from the city centre, while Lövsta is approximately 10 kilometres from the city centre.

Alnarp campus (represented by the blue marker in figure 5) is located in the southern part of Sweden and is the only campus out of the three that is not located within a city. Alnarp houses two of SLU:s faculties as well as other connected organisations. SLU Alnarp has approximately 900 students and 430 employees. The main activities in Alnarp are landscape architecture, agriculture, horticulture and plant production. Alnarp is located north of Malmö

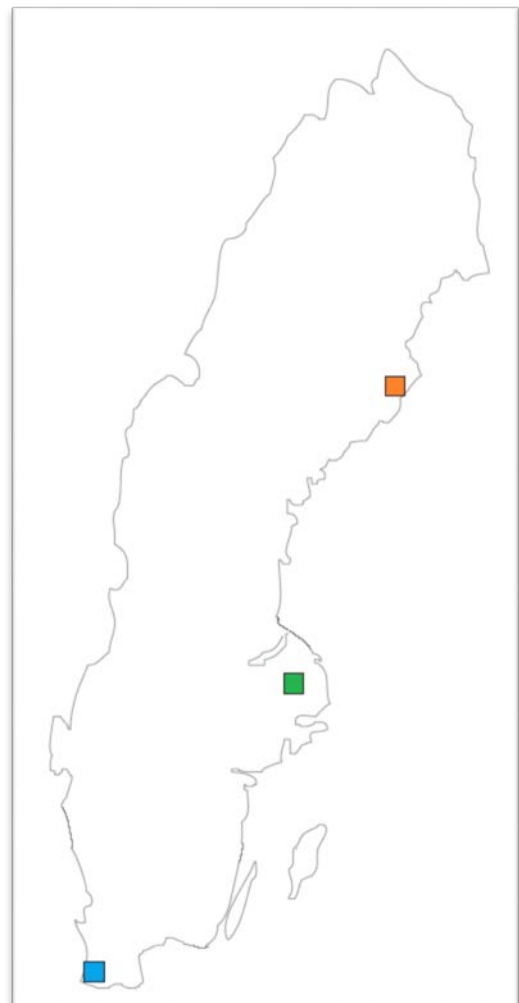


Figure 6, Uppsala, Alnarp and Umeå location

and west of Lund (SLU, 2018g). From the city centre of Malmö it is approximately 11 kilometres to Alnarp and from Lund it is 14 kilometres.

SLU Umeå campus (represented by the orange marker in figure 5) is located in the northern part of Sweden. SLU Umeå shares campus with Umeå University, Norrlands University hospital, IKSU and Uminova. SLU Umeå campus is also spread out on two locations both located in Umeå. Umeå campus houses two faculties where the main research is forest sciences and natural resources (SLU, 2018h). Both locations of SLU Umeå campus is located approximately 3 kilometres from the city centre.

The three/four focus group discussions with SLU employees in Ultuna, Alnarp and Umeå that was conducted contributed with a large amount of data. The empirical data that has been collected are structured and presented by themes which summarize the discussions in the different focus groups. Since the focus groups were located in three different locations with different perspectives of the subject; the data from the focus groups will be presented separately.

5.2 Carpark management in Umeå

Due to the large size of SLU and the different locations of the campuses they have different policies regarding their carparks. Out of the three main SLU campuses Umeå is the only one that has carpark management policy which includes a carpark fee. The carpark management for SLU is conducted and maintained by Akademiska Hus (pers. com., Svensson, 2018).

Akademiska Hus is a government owned real estate company which purpose is to own, develop and manage real estate for universities that has focus on education and research. At SLU Umeå campus they have had a carpark fee for 20 plus years. Akademiska Hus offers a wide range of deals depending on the employees and students needs for parking their cars. SLU employees and students pay the same price for their parking permits (pers. com., Holmström, 2018).

The different parking fees at SLU Umeå campus include:

Annual card parking permits for employees and students;

- Parking permit without block heater – 1490 SEK/year
- Parking permit with block heater – 1890 SEK/year
- Parking permit for electric cars – 2540 SEK/year

Institutions also have access to rent reserved car slots for 3580 SEK/year.

There is also a range of different daily carpark fees for people without a parking permit between 8 - 25 SEK/hour depending on the area of the campus. For SLU employees and students that do not want to buy an annual card there are special parking permits that can be applied for to be allowed to park your car for 18 SEK/day.

Motorcycles are allowed to park for no charge at designated parking slots.

Disabled people are allowed to park for no charge on designated handicapped spots and if all of them are occupied they can park for no charge for up to three hours on regular parking spots as well.

According to Lars Holmström the pricing for the carparks are set from competitive pricing. Akademiska Hus has done an evaluation of the surrounding real estates' pricing and from that created their prices adjusted to conditions on the market and alternative use of the land. When they adjusted their prices it was important to make sure that they did not have a price that was much lower than their surrounding competitors because that would increase the risk of that their tenants would start using Akademiska Hus carparks instead of their own. To stop this from happening Akademiska Hus has a relatively high price on their hourly rate. Because the hourly rate is relatively high Akademiska Hus offers Parking permits both for day parking and annual parking permits for their employees and students at a lower price range.

Akademiska Hus rent out their parking lots to companies that manage the surveillance and day to day business of keeping it functioning. All the earnings generated from the carparks goes directly to Akademiska Hus with a percentage of the earnings going to the surveillance companies. The rest of the earnings goes to maintaining the carparks and making sure that the roads keep its quality. Since Umeå is far up north in Sweden and that they have heavy and long winters, large sums of the earnings go to block heaters and snow clearing.

When discussing the subject of a potential percentage of the carpark fee going to SLU: s climate fond Holmström did not think it would be possible with the current model they have. Umeå campus is shared between more than one university and having a part of the earnings only going to SLU would be problematic. To make it work there would need be another form of lease agreements for the carparks. Holmström (2018) did not think that adding a fee to the current pricing would be fair to the people driving to work; they are already getting punished enough from taxes and carpark fees. Many of the employees and students that take their car to work do so out of necessity because they might live outside of central Umeå and he believes that adding an extra fee to the price will be damaging in the long run.

Holmström think that the wisest course of action would be to focus on finding a suitable reward or support function for people that have the means to use public transport, bicycle or walk to their workplace.

5.3 Focus group Alnarp

5.3.1 Means of travel and the most important aspects

The participants in the Alnarp focus group had varied means of travel for getting to work. Out of the five participants two people travelled by car, one by bicycle, one by train and the last one travelled by electric car. The participants that was traveling by electric car was met by surprise and awe from some of the members in the group. The other car users was trying to chime in and justify their choice of car in a humorous manner.

“I would like to say that I have a very tiny car”

“I have a big car, but it is mostly made out of plastic”

The reasons and aspect for why the participants used their choice of travel for getting to work was different. For one of the participants in the group it was largely about quality of life. Family and having two kids that needed to be picked up from school and day-care made it too time consuming to make it work by using other means than car. The participant was also quick to point out:

“When I get older the idea is to switch to bicycle”

The reason why the participant had not made the change was because of the difficulty with the children and their needs. For another participant it was more a location issue, living on the countryside which has a poor to almost non-existent connection to public transport made car the only possible choice.

“Then I realized how it is to drive your car back and forward everywhere and decided to buy myself an electric car instead”

“Since I am an environment idealist and feel like I do not have a choice but to use a car I decided to buy an electric car to make up for it even though they came with their own problems.”

The participant that took their bicycle to work did so because it was faster than using the car. The participant also had to move around a lot at work which made the bicycle the perfect tool to use. One of the participants that used their car to get to work was very regretful for doing so and said on multiple occasions that he/she got bad conscience from doing so. The participant was also quick with pointing out that it was also a question of logistics and time. Living on the other side of Malmö it would take around 1,5 hours to get to work by bus because there are minimum three bus changes, while it only takes 20 minutes by car. That including having children that needs to be driven to and from practice made it hard to justify taking the bus. The participant was also quick to point out his/her car choice and that he/she was moving by the end of summer to a location with good connection to public transport in justification.

“I have chosen a very tiny fuel-efficient car to deafen my environmental print”

One of the participants does not have a car and travels to work by train. When he/she moved out to the countryside one of the conditions was that it was close to a train station.

“When traveling by public transport it is very important that you do not have to make any changes, because changes always make it more difficult”

The participant also has a job that makes it possible to work on the train which helps with saving time. When one of the other participants questioned why he/she did not have a car, he/she answered in a humorous matter that he/she did not want to be a chauffeur to his/her partner. In this part of the focus group interview the group was in a good mood and continually made jokes with each other.

5.3.2 Public transport connection in Alnarp

When the participants got the question regarding their thoughts on the public transport connections in Alnarp all of them were in agreement that it was in poor quality. Alnarp is in

between two big cities and if you take the bus then there are a lot of stops that you have to go through to get to Alnarp. One of the participants pointed out that if you take the bus from Lund there are not only regular bus stops but also train stops that you will have to wait for. All of the participants were in a general agreement that public transport from Lund or other locations on the east side of Alnarp would take much longer than if you are traveling from Malmö. The Buses did not go as often as necessary to make it a viable choice.

“For those that have regular work hours public transport works okay, but there are a lot of employees here that work on irregular hours which makes it more difficult”

One of the participants mention that if you live in Malmö or Lund there are good bicycle lanes but everyone in my work group for instance lives on the countryside which makes it more difficult. Even if people take the bus to Alnarp they will then have to walk for 15 minutes before they get to the centre of campus. Many people that takes the bus or train has bicycle parked by the bus stop and train station. Where there was on participant that was quick to point out that the bicycle is not always there when they show up and that his/her bicycle had been stolen.

“I would have liked if the buses went through Alnarp and did not stop outside”

5.3.3 Fairness

From the subject of public transport the focus group transitioned in to a discussion about fairness which had been mentioned in emails they had received. One of the participants felt like all this came from the top of the university and had heard that it was a matter of fairness since the employees in Umeå has to pay for their carparks. This was something the participant reacted strongly on.

“Fairness from who’s perspective, is it not fairness that you should be able to get to work in a reasonable time? Or is fairness that everyone has to pay?”

This definition was something that the group thought was problematic and should not be used as a reason to make this change. One of the participants thought that this definition made it feel like the employers was intruding on their private life. As a counter argument to this aspect he/she brought up the public transport and how it is much easier to get to Ultuna and Umeå campus then it is to Alnarp and was wondering if that is fair. The subject of who was going to receive earnings from the parking fee was also brought up and they did not like the idea to bring in a carpark fee if the earnings only went to Akademiska Hus and not SLU.

It is important to note that all participants were not in agreement on this statement.

“Had you worked anywhere else then you would have had to pay for your parking, it is only a coincidence that you work here”

Meaning that if they had worked anywhere else then this would not even have been a subject to discuss. The participant also thought this was a great way to get people to actually think about how they travel to work from an environmental perspective. One of the participants mentioned that if you want to create a change that they should not only use the stick and make people pay but also have some kind of carrot as well.

“I have been working for Region Skåne for 1,5 year and we are allowed to buy a monthly public transport card for half the cost and I think that would had been a good incentive for SLU to use”

5.3.4 SLU incentives for leaving your car at home

When it came to SLU incentives the participants thought that this was only up for discussion and no decision was made. One thing that was brought up was that if SLU wanted to change the way their employees travel to work then they must be tough and make sure that the public transport in Alnarp gets better. Talking with Region Skåne and the government to make changes to bus lines and train stops.

“If SLU creates incentives then they need to make sure that it is not only a bus card or three electric bicycles that you can rent. It needs to be something more”

At this moment of time the discussions started to get more passionate between the participants in the focus group. The discussion started to shift towards a work environment issue because they were getting the feeling that the discussion of carpark fees was just a way for the upper management to say that what you are doing is wrong. Here the opinions were divided between the participants, whereas the subject of being a good role model for the students and the science that being done was brought up.

“I believe that we have a responsibility to be good role models”

The discussion between the participants got even more passionate at this point. It was brought up that SLU is an environmental friendly University and that we should lead by example, but it needs to be manageable and be seen from multiple perspectives. If you have adult children this might be easier to deal with but if they are young you are stuck. Some participants thought that when it comes to the environment people needs to be more open minded and that having young children is only a temporary thing and a not making a new policy because of that is a bad reason not to implement it. Another participant thought that the most important aspect was to make sure that the public transport system in Alnarp gets better. Alnarp lies in a bad location in the middle of nowhere and to get people to change way of travel to work it is not enough to put in a carpark fee. There needs to be a carrot as well.

SLU: s electric car spots on campus was also brought up on this subject and people thought it was weird that people with electric cars had to pay for their fuel. You can park your car anywhere else and get your electricity for free but you have to pay on campus. They thought that was a step in the wrong direction. If you want SLU to lower the carbon emission given by cars they should encourage it instead of making it more expensive. One of the participants brings up the fairness in a humorous way and then mood in the focus group becomes more cheery again.

5.3.5 Habit and SLU image

On the subject of incentives from SLU, habit was brought up. The participants thought that habit played a big role in why people take their car to work and because of this they thought that the suggested carpark policy would not work on its own. Something else would be needed on the side as well. They thought that it was habit that made the carpark policy such a

debated subject. One of the participants gave the suggestion that bringing down the number of available car slots might make a bigger difference.

“If you take away the closest car slots, because there is always an outcry when they have to clean the roads, because then people need to go all the way. When does people not think it is worth it anymore?”

Meaning that if you lower the available car slot and people still have to walk to get to their office they might think that it makes no difference if they take the car or the bus. The subject quickly changed from habit and went to conferences and public transport. There is a lot of conferences in Alnarp campus which makes it hard to find parking spots and the focus group believes that if the public transport was better that more of the people who attends the conferences would opt for the bus or train.

When the subject of SLU's image was brought up the focus group started joking about the fairness aspect again.

“We don't live as we teach that's for sure”

They think that SLU should encourage people to buy different types of cars and public transport since as they think that SLU does not do that at the moment. The electric cars were brought up again and how silly it is that they charge for the use of the electric poles.

“I think that we can put more demands on ourselves”

One of the participants thought that both SLU and its employees should put more demands on themselves even though people have different conditions to live by. Some of the participants who had studied on SLU many years ago and then come back later to work here were a bit disappointed that SLU had not come further with their implementation on making SLU a more environmental friendly workplace. They also pointed out that there are plenty of other universities that are miles ahead of SLU on environmental changes within the organisation.

5.3.6 Parking fee on its own

According to the participants they think it would be hard to find a proper price that would make the switch from car to public transport. If the price point is low then they will probably just pay the price and if the price point is too high then it will lead to a bad work environment, where the employees would be unhappy. The participants quickly switch the subject back to having other incentives on the side to make it work.

“SLU has to show that they are serious about this and do concrete things that makes a real difference, because as it is now, it does not”

They went on to speak about how they would not be peeved if SLU went in and payed half the price on the bus card for the employees even if they would not use it themselves. One of the participants brought up how they thought it might be a good change to make and it could have a potential symbol value for the employees to think of their travel method.

“I think it is a really good change, the question needs to be raised!”

Meaning that the parking price does not need to be high just act like a symbol for the employees that there are other alternatives. It was also quickly pointed out that all of the employees working there might not be doing it because they feel a higher calling to improve the environment. Some of the employees just have regular administration positions.

“If you want something to change, you have to give the necessary conditions”

In this case they were referring to the public transport system and how it is lacking in Alnarp.

5.4 Focus group Umeå

5.4.1 Means of travel and the most important aspects

In Umeå the participants travelled to work either by car or bicycle. Out of the three participants' one travel by car, one by bicycle and one by car or bicycle depending on his/her schedule for the day. When it comes to the choice of travel mode the most important aspect was flexibility and simplicity.

“For me it supposed to be simple, that is the reason why I usually travel by bicycle”

The participant went on explaining how he/she is lazy by nature and the bicycle makes it much easier to come and go as you please. If you travel by bus then you have a schedule you need to keep track of. The same applies to cars. With bicycle you will not get stuck in traffic. The participant also went on explaining that taking the bicycle to campus takes about the same amount of time as it would with car and public transportation. Umeå campus is split in two and if he/she needed to travel to Röbbäcksdalen then he/she took the car.

“For me it is a matter of logistics if I take the car or not”

The other participant who took both the car and bicycle to work explained that it was faster and simpler to take the bicycle to campus then taking the car, but that it sometimes comes down to a logistic issue. The participants have two dogs which sometimes needs to come with him/her to work. Another reason was the work schedule sometimes forced him/her to take the car. The participant also went on to talk about the health aspect of taking the bicycle instead of the car.

“When the snow is ploughed, now that it is spring and the fresh air you get in the morning from bicycling to work is also a reason for traveling with the bicycle”

For the third participant flexibility was the most important aspect and also the reason for using the car to travel to work.

5.4.2 Public transport connection in Umeå

According to the participants Umeå has good public transport if you live in the city. They also pointed out that it might not be as good as it is in Uppsala. Depending on which time you have to take the bus it might be more comfortable taking the buses during rush hour then if you have to take it in the middle of the day.

“You will take yourself from A to B but it might not be comfortable”

The participant also thought that Umeå lately had worked more on the bicycling in Umeå and making it more approachable for the population to take the bicycle during winter time. The participants also thought that the public transport system from close lying regions had good connections in to Umeå and all the busses that goes in to Umeå stops at the hospital which is a four minute walk from campus. Public transport to Röbäcksdalen is not as good as to the main campus area. It still lies in the city, but there is only one buss that goes there since it is not a main hub area.

“As long as you live in the city and the bigger surrounding regions the public transport system works okay”

The participants also mentioned that if you live in the backcountry the buses do not go as often and it might be harder to travel into the city. According to the participants commuting with train is something that has been done for a long time and generally works fine.

“This winter has been especially hard and has caused quite some hassle for the trains”

With hard winters they sometimes get problem with the trains, which can make it a bit more unreliable. People end up taking their car to another region and then takes the train from there instead, which helps circumvent this problem.

5.4.3 Fairness and eye-opener

According to the participants they thought that this came down to a fairness issue as well. Right now they are the only people who needs to pay a carpark fee when they drive to work while all the other campuses does it for free.

“It becomes an employee benefit on the other SLU campuses”

They have had discussion about this outside of this focus group and they think that the bigger part of their co-workers agrees with this statement.

When talking about fairness the discussion transitioned into the subject about if they thought that the carpark fee was working. They mentioned that they thought that the employees that are using the day-to-day parking permit were getting an eye-opener from in the later years because of the increased prices. One of the other participants said that it was the same for the annual parking permits and for the employees that wants block heaters. If you want to drive your car during winter time then it is almost a given that you want a block heater to keep the frosting away from your car. They also thought that parking had become easier now that you no longer have to use a parking meter but you can use an app instead to pay with.

“You never have to think about where the parking meters are located or having the coin needed all you have to do is open your app on the phone and you are done”

They thought that making it easier to park removes one of the barriers that might have lead people to taking public transportation or the bicycle instead.

5.4.4 SLU incentives for leaving your car at home

According to the participants SLU has been working on various project to try making it easier to choose other methods of travelling to work than car. They have in-service bicycle that the employees can use and they are working on a project to build a bicycle garage that will help during winter time. This is a project that the employees have been asking for and is going to be funded by the SLU climate fond. There are a lot of employees and students who bike to the University, but in winter time if you leave your bicycle outside it might freeze which makes it harder to get home. But at the same time that they are trying to make it easier to choose other alternatives SLU has not gone out and said that people should not drive to work like they have done with flying.

“SLU has gone in and said that employees should not fly but not made it easier to take the train. In this case it is the other way around, SLU has made it easier not to take the car but not gone in and said not to take the car”

When broaching the subject about the climate fond the participants thought that the carpark fee would be immensely more accepted if a part of the fee could go directly to SLU and their climate fond instead of all the earnings going to Akademiska Hus.

“If some of the earnings from the carpark had gone to the climate fond then it could help fond initiatives like that bicycle garage which opens up more alternatives”

The participants also thought that only having a carpark fee was not enough for people to change their behaviour, but something else is required on the side to actually make a change.

Bus cards were also mentioned in the discussion and how it might help people that live further away from SLU campus. The participants thought that it could be a good idea to use bus cards for conferences where you can send bus cards with them to for instance Uppsala so they could take the bus to Ultuna instead of taking a taxi and how this could be like a symbolic change.

5.4.5 Habit and SLU image

“I believe it all comes down to habit”

One of the participants mentioned how he/she used to travel more by bicycle before and how quickly his/her habits changed when he/she had to start using the car more because of logistics issues. Because of this habit change it is hard to switch back to bicycle again. It was also mentioned how they know people who have children who still manage to use the bicycle to travel and how it is manageable as long as you live in the city. The participants believe that it might be out of habit why other people do not make the same change to their travels.

“There are those that make it work even though they have children”

There was one participant in the focus group who said that he would always take the car to work no matter what. The participant would not even reflect on the decision to take a bicycle or bus to work.

“I drive my car everywhere and in every situation, I would never even reflect on taking something else”

The others in the group thought this might have to do with his/her habit of always taking the car.

“It is all in your head and people lack the ability to see what they actually would be able to handle”

The participants also got into the subject of how the a carpark fee is good for SLU:s image.

“I think it is an important symbolic question that needs to be raised to help strengthen SLU:s sustainability work”

Meaning that there are always people that will always take the car to work no matter how good the alternatives are. The participant thought it was wrong that SLU should adapt to them because they choose to be in that situation. Implying that living in a location that was far away from work is an active choice that you make. According to the participant it is symbolically important to push this question about carpark fees to make sure that people who live close to work choose other alternatives then the car.

“There is always someone who is going to look for other alternatives if they have to pay”

Other participants were in agreement and also thought that if basically was a fairness issue as well. The participants also brought up that no matter where you park now a day you will have to pay for your parking and they are usually quite high priced. Employees on SLU should not just expect it to be free because they have chosen to live on the countryside.

“There is a system for employees where you can get a mark for your car so you have to pay less”

The participant thought it was astonishing that people think that free parking is a right you should have just for working on SLU. The participant went on to explain that it is very unusual that big campuses like SLU:s have free parking.

5.5 Focus group Ultuna

5.5.1 Means of travel and the most important aspects

In the Ultuna focus group the participants either travelled by car or bicycle. Out of the five participants there were two who only travelled by car and the other three participants travelled by bicycle when the weather and schedule allowed otherwise they as well took the car to work.

“Getting to work clean and tidy is the most important aspect, so the weather is in charge”

The participant went on to say that taking the bicycle to work was freeing and refreshing and allowed to make errands in town to and from work without the hassle of having a car. The exercise from taking the bicycle to work was also appreciated, but it is the weather that decided if the participant took the bicycle or car to work especially during the winter.

“The time aspect is also important when you travel to work, especially if you have a family to take care of”

This was something that was generally agreed upon from the entire focus group that time was the one of the most important aspect when they chose their travel mode. The participants that travelled by bicycle all said that they would love to travel by bicycle all the time but because of family and logistics reason plus the winter weather it was not possible to do it all the time. The other two participants that travelled by car did so mainly because of the time. One of them lived far out of town and felt that travelling by car to work was the only viable option and the other participant had the same issue from living on the wrong side of town.

5.5.2 Public transport connection in Ultuna

According to the participants the public transportation system in Uppsala had poor connections to Ultuna depending on where you live and could be worked upon.

“I have really tried taking the bus to work and it does not work. I have not been able to make it work”

This participant lives outside of Uppsala and has tried on multiple occasions to travel by public transportation instead of car but was not able to make it work. The train connections into Uppsala works but then switching to the buses from the central station out to Ultuna makes the travelling take double the time compared to travelling by car. Travelling into the city was fine but then travelling to Ultuna was a bigger problem.

“Travelling by bus takes one hour and 20 minutes with the changes you have to make”

This participant lives on the outskirts of the city and went on to explain that it was only 15 kilometres to work which the participant thought was within bicycle distance, but there are no bicycle lanes to work. If the participant wanted to travel by bicycle it would have to be done on a country road which the participant was not comfortable with. The bus would take one hour and 20 minutes and having a family and other activities made the public transport system an unviable option.

One of the participant thought the public transportation system was largely dependent on where you lived in the city. The participant had never had any problems travelling by bus the few times he/she had done it, but preferred travelling by bicycle or car. There was one participant who had two living areas, one on the north side of the city and one on the countryside and thought that the public transportation was lacking from both locations.

“Out on the countryside it takes 55 minutes with car from door to door and roughly 2 hours by bus”

The participant went on to say that there are many employees on SLU campus who lives out on the countryside which the participant thought was good so they get a different perspective in SLU and everyone cannot live in the city. Two hours by bus to work was not a viable option if you have other commitments on the side.

5.5.3 Fairness

The participants started talking about a dispatch that had been sent out by SLU which brought up that the carpark management could be seen as a fairness issue because Umeå had to pay for their parking and not the other campuses. This was not an aspect that was liked by the participants and they thought it was wrong to use it.

One of the participant went on to explain that using fairness will only bring up a lot of other problems for example that the different campuses might have different prices on their restaurants, different institutes might have different amounts of free fruit. Another participant went on to say that they had heard that Alnarp employees had higher salaries and if fairness is brought up as the reason to make this change then it will only lead to more problems for the management to handle.

“It is tricky to use the fairness aspect when you add something that can be considered as a punishment instead of taking something away”

5.5.4 SLU incentives for leaving your car at home

The participants in the Ultuna focus group thought that SLU had not made any incentives for their employees to leave their car at home. They even thought that they had made changes that could be considered as disincentives instead.

“SLU has even taken away the wellness hour that I used to use for taking my bicycle to work”

One of the participant said that the veterinarians themselves had bought bicycles, but they were mainly used for people to drive less inside of the campus instead of taking the bicycles to work.

“We have asked to get a garage for bicycles or even just a roof”

The participant went on to explain that in their department they had asked for a place to store their bicycle during winter time so they are not frozen when you travel home. The winters can be quite cold and the breaks and gears on the bicycles have a tendency to freeze and stop working during the winter period. So far they have had no response on the subject which the participant thought was a shame because it makes people drive to work instead.

Other participants in the group said that they had had similar request in their departments to no avail. They also brought up that having a roof above the bicycle would also help when it rains so it is dry when you travel home. The participants also thought that having access to this would make people feel more comfortable with taking their bicycles to work and they would not have to worry that something would happen to the bicycle.

During the discussion about SLU incentives the potential carpark fee for Ultuna was brought up.

“It feels like a punishment for living out on the countryside or a punishment because that UL (Uppsala public administration) does not have better connections to Ultuna”

The participants believed it was a punishment, because the campus was lying on the outskirts of Uppsala. It was also mentioned that they thought that the effect from the carpark fee would not change anyone's behaviour and it would only lead to a bad workplace environment.

“Most of the employees take the car because there is a need for it. It takes too long with public transportation or that you live on the countryside”

The participants' do not think people take the car because they think it is fun, rather because they have to. Another participant thought that the carpark fee could work depending on what the earnings went to and how high the fee was. If the earnings goes to something good and if it at the same time leads to more parking spaces then it might be more acceptable. The participant also mentioned that from the talks they have had with their department it was still mostly just negative feedback with the carpark fee.

The UL one month free bus card trial was also brought up on the discussion of SLU incentives.

“If employees can get a one month free bus card trial and try it out, then I believe that some employees will notice that it is not too bad and actually switch over to bus instead”

The participants' thoughts on a bus card free trial or even a bus card subsidy was varied. Employees who live in areas where the public transport connection are poor will probably not switch over even if they would get the bus card at a lower price because it would still take too long to travel to work. Furthermore, it was generally agreed upon in the focus group that it could work for people that live closer to work but still takes the car. Bus card subsidy would work as a motivation factor to get employees to try the public transport system and see if it works for them.

“I don't think it will help for the bigger population, only for a few”

The focus group thought that better alternatives might be to reinstall wellness hour that allows employees to use for travelling to work by bicycle, because time is the biggest issue. This way SLU would encourage their employees to start travelling by bicycle instead of car.

“SLU should encourage their employees to travel by bicycle and work with UL to improve the connections to Ultuna”

Meaning that it would be a better solution to incentives bicycle and improving the public transportation connection then disincentives car users by adding a carpark fee.

5.5.5 Habit and SLU image

According to the participants they thought that habit played a large part when it came to workplace travel.

“We are animals of habit, if you have grown used to travel by bicycle then you bike to work and if you are used to travel by car then you will drive to work as well”

The participants also mentioned that they knew people who would be able to travel by other means than car but did not do it because of habit. To be able to change that behaviour they

thought that the individual needs to have a certain drive to carry it out and everyone does not have that energy.

On the subject of SLU: s image and how this could be seen as a way to make it stronger the participants thought it was not a valid argument.

“It is just words and it lacks meaning”

The participants thought that if SLU: s image was going to be used as a reason to implement this change then they need to go all the way out. Meaning that they cannot have researchers that fly everywhere. There needs be bigger restriction on the entire University. The participants also turned back to the discussion about the importance of using positive incentives instead of negative, at least to start with and see how it turns out. One of the participants gave the suggestion that they could create a SLU bus that goes from the city centre out to Ultuna without making all the stops in between.

6 Analysis and discussion

In this chapter the empirical findings will be presented and compared with the theories found in third chapter theoretical perspective and literature review and will be analysed as presented in the theoretical framework. The chapter is structured in the same order as the theories are presented in the theoretical chapter. First social practice theory will be used to analyse the practice of workplace travel plan from the view of the focus groups. Thereafter the proposed carpark fee will be analysed with the theory of nudging. In the third section the theory of planned behaviour will be used to analyse the behavioural patterns regarding workplace travel plan and the fourth section dual process theory will analyse how to change said behaviour. Throughout the discussion the concept of workplace travel plan will be used to help answer both of the research questions; How is SLU: s geographical location and public transport infrastructure perceived by their employees? How do the employees perceive SLU: s soft measured transport policies and are they sufficient to support the new carpark management policy?

6.1 Social practice theory

In this section the practice of workplace travel will be analysed with the help of social practice theory to gain an understanding of the motivations and thought process of travelling by car from the data collected from the participants in the focus groups. To help with the analysis the model by Reckwitz (2002) will be used which is based upon three components; 1) meaning, 2) competence and 3) materials.

6.1.1 Meanings

According to the empirical findings the following motives could be gathered for why some of the participants in the focus groups decided to travel by car to their workplace. The motives that could be distinguished were; effective travel time, feeling of sensation, simplicity, logistics, flexibility and comfort. These motives fit in with Steg (2005) explanation of meanings: symbolic and affective meanings, instrumental meanings and independence.

Symbolic and affective meanings were the feeling that some of the participants had of public transport, which was that public transport is something that was generally frowned upon and unreliable and thus should be avoided as much as possible.

The instrumental meanings' that was gathered was the effective time that went in to the travel. Infrastructure was one of the key aspects that made car the more desirable choice for the participants at Alnarp and Ultuna campus, because the infrastructure did not support the use of the public transport system. Both in Alnarp and Ultuna a large part of the workforce lives on the countryside which has according to the participant a small selection of public transport alternatives. Traveling by public transport therefore gave a negative image because of the increased time and effort that would have to be spent travelling with it compared to travelling by car.

The independence category was dependent on how far the participants had to travel to work. The flexibility and comfort level achieved with car made it the ideal transport mode to travel

with. The reason why the participants did not travel with public transportation was because it did not offer the same level of service.

The meanings of workplace travel, specifically the use of car, varied depending on which campus the participants were located at and how far away from campus they lived. The participants in both Alnarp and Ultuna that lived further away from campus associated cars with flexibility, time saving and comfort. They saw public transport as time consuming, not well developed and only for dedicated people. This view was shared by the participants that lived closer to campus but not close enough for using bicycles. The meanings on public transport were also different depending on which travel mode they had to use. Public transportation with train was seen as quick and smooth in all the focus groups while the public transportation with bus was only seen in a positive light in Umeå. In Ultuna and Alnarp it was seen as clunky and time consuming. The participant at Ultuna and Alnarp thought that the public transportation system needed further development and better connections for it to be useful, while in Umeå the participants thought it was sufficient.

6.1.2 Competence and material

When it comes to the competences “know-how” needed for travelling by car in Sweden all that is needed is a driving license. For public transportation the routes and time schedules of the different travel modes is needed in order to make a functioning travel plan. The large number of participants that was against the use of public transport was so because of its time consuming nature. Competence is the practical knowledge of the practice and procedure skill to execute the practice (Steg, 2005). Learning how to best utilise a certain travel mode both in time-management and personal organisation might open up more alternatives for the employees to make their decisions on.

The materials required include the car itself but also a road network. Besides the car and the necessary infrastructure of road networks there also needs to be storage facilities to park the car both at work and at home. At all of the campuses there is an available carpark for the employee’s cars, but at Umeå campus they have installed a carpark fee to help manage the parking. For public transportation the buses and trains are needed but also the mapping of connections between the different travel modes and an infrastructure.

The links between these components shown here are used by the practitioner to produce and maintain their practice. In order to change the practice of car travel to work there needs to be an understanding of these components and what is needed to be created and replaced to integrate a different set of practices (Hargeaves, 2011).

From the empirical data we the reason employees travel by car is the flexibility, time saving and comfort levels that come with the practice. The reason why public transportation was out of favour by the car practitioners was because it did not offer the same level of service as the car. Meaning they would lose the flexibility, increased travel time and overall lower the comfort level. This can be a cause of lack of “know how” in how to best utilise the public transportation system and it can also be caused by bad public transportation connections to the campuses.

If SLU wants to change the practice of car travel they need to increase the employees’ competence on the public transport system, how to improve time-management and personal organisation to help increase the utility. This is supported by Petrunoff et al (2015) that say

soft measures are needed to help raise awareness and understanding for why this change of practice is needed for parking management to work. Providing the necessary materials for changing travel mode is a key aspect to change the links of this practice. This is in accordance with Cairns et al (2008) that points out facilities and access to showers, changing rooms and lockers are seen as important factors for public transport and bicycle to function.

6.2 Nudging

The results from the empirical data collected from Akademiska Hus and the focus groups on the subject of a carpark fee are in this chapter analysed with the theory of Nudging. The goal with using nudging is to help affect the individuals' automatic responses by changing their choice of architecture (Mont et al., 2014). In this case SLU want to change the behaviour of traveling by car to work and replace it with other alternatives in the public transport system or bicycle. The proposed tool for nudging the employees to change their behaviour is installing a carpark fee at their campuses at Ultuna and Alnarp.

According to the empirical findings Akademiska Hus had done an extensive evaluation of the market prices in the surrounding areas before installing the carpark fee at Umeå campus. It was important for them to make sure that they had a fair price that was not too low but still high enough so that the competing real estate tenants did not start using their carpark. These are in agreement according to Mont et al (2014) where you want the implemented action to lead people towards a desirable outcome, but at the same time not force people upon a direction. If the carpark fee is too high then you affectively remove the choice of traveling by car which is not the goal with nudging.

From the data gathered by the focus group at Umeå campus the results show that the intended carpark fee has missed its mark for nudging people to use other alternatives. The carpark fee on its own is too low to change people's behaviour. The price is around 1500 SEK/year depending on which annual permit that is purchased and from the results of the focus group discussions, it had no apparent effect on the employees. The carpark fee was considered too low to decrease the unfavourable behaviour. This corresponds with the data gathered from the focus group at Alnarp and Ultuna campus where the current prices in Umeå was considered as a minor trifle to some of the employees who takes their car to work, but it was also considered a major trifle for some of the employees that felt that they would not be able to afford it on their current salary. This would go against Mont et al (2014) where the point is not to force people upon a specific direction.

Nudging should be used to both decrease the unfavourable behaviour and at the same time promote a favourable behaviour (Thaler & Sunstein, 2009). The carpark fee opened up the opportunity to decrease an unfavourable behaviour for some participants that was already thinking of switching travel mode, but had no effect on the others. This means that the carpark fee slightly decreased the unfavourable behaviour but did not promote a favourable one. From the results gathered it would require more incentives from SLU to make other alternatives more favourable. It was gathered from the focus groups that by adding a subsidy to employees that use the more favourable alternatives might lead to bigger decrease of the unfavourable one. It was also gathered from the focus group at Umeå campus that the management had not gone out and promoted the favourable behaviours to the employees. According to Cairns et al (2008) in order to have a successful parking management it is important to have marketing and communication with the employees to promote favourable alternatives and to be able to

achieve high level of public transport it needs to have relatively cheap fares which the organisation should help provide.

6.3 Theory of planned behaviour and habit

In this section the data collected from the focus group discussions conducted at Ultuna, Alnarp and Umeå are compared with the theory of planned behaviour and habit. As stated in 3.1 being able to predict and explain behavioural patterns is a key issue in attitude theory and in literature that specifically focuses on modal shift research, where TPB has been widely used for analysing and explaining intended behaviour (Chen & Chao, 2009; Verplanken et al., 1998). In TPB there are three main components attitudes, subjective norms and perceived behavioural control which will be used to analyse the behavioural patterns regarding workplace travel (Chen & Chao, 2009).

6.3.1 Attitudes

In the focus group discussions the attitudes regarding the different alternatives was vastly different depending on which SLU campus the participants were located at. Attitudes are created when individuals consider the pros and cons of the available options in a specific circumstance (Verplanken et al., 1998).

At Alnarp campus in the southern of Sweden the campus itself is according to the participants located in the middle of “nowhere”. Because of this, the public transport system to Alnarp is lacking. Depending on where you live it can take between 45 minutes up to 90 minutes to get to your workplace by bus and train while it would only take 20 minutes with a car. Since Alnarp lies on the outside of two cities the connection to the public transport system is lacking. The time schedule for buses and trains are far apart and if they would miss their bus they might have to wait up to one hour for the next one. Alnarp is a campus that is spread out in its located area and the bus stop is located on the outside which means that it will take around 15 to 20 minutes for the employees to walk to the centre of campus. These beliefs has created an outcome were some of the participants believe that it would become harder for them to manage their day-to-day lives if they had to use public transport. It was also noted by the focus group that it is important when using public transport that the employees do not have to make any bus changes, because that makes it more difficult. These beliefs and attitudes have caused an unfavourable view towards the public transport system and consequently with the car park fee as well, which is in accordance with Ajzen (2012) that attitudes and beliefs are linked towards a specific outcome/meaning that the negative attitudes toward the public transport system has led to a negativity towards carpark fees.

Ultuna campus is in a similar position as Alnarp that it is not in the middle of city, but rather on the outskirts. The public transportation system is dependent on where you live both inside the city and outside the city. The main connection point for the public transportation system is in the middle of the city meaning that travel by public transport from outside of Uppsala or on the countryside would have to travel into the city and then switch public transport mode to travel out to Ultuna campus. This has with accordance to Alnarp created negative attitudes toward the public transportation system.

In order for SLU to change this negative attitude towards the public transport system in Alnarp and Ultuna they would need to take initiatives to encourage the employees to use the

public transport system. This could be done by raising awareness of the available buses and trains which goes directly to Alnarp and Ultuna. According to the model of workplace travel plan, it is also important to have good infrastructure for bus stops (Cairns et al., 2008). This could be achieved by having communications with Region Skåne/UL and create bus lanes that goes through the campuses. Changing the infrastructure to make it more accessible for the employees with public transport would be a vital point to help change the behavioural belief structure and attitudes towards public transport. The participants in the focus groups had in general a positive attitude towards a subsidy for bus cards which would make it more attractive for them to use public transport, which is in accordance with the workplace travel plan model (Cairns et al., 2008).

The Focus group at Umeå campus had a different perspective on the public transport system in comparison of the focus groups at both Ultuna and Alnarp campus. SLU Umeå is located in the city of Umeå and thus according to the participants has good access to all the forms of public transport. One of the main bus hub areas lies four minutes away from campus which means that all the buses in Umeå stops there and also gives the employees a good public transport time schedule. SLU Umeå and Umeå municipality have been working on making bicycling more attractive as well, making it easier to travel by creating a bicycle garage to keep them safe from weather conditions. This has changed the attitude towards public transport to become more favourable with the Umeå focus group.

6.3.2 Subjective norms

The perceived social pressure for not to travel by car was different among all the participants in the focus groups independent of which campus they were working at. Subjective norm is the combination of several perceived social pressures that is created by a referent other that wants us to perform a specific behaviour (Ajzen, 2012).

In the discussion from Alnarps campus the participants felt that there seemed to be a perceived social pressure both from co-workers and the upper management of SLU that driving to work was wrong and the participants reacted differently to the effects of these social pressures. One of the participants felt that the upper management went out and said that driving to work was wrong without them having considered the available options. This has created a rift between the participant's unfavourable attitude towards public transport and the social pressure of leaving your car at home. The participants thought there was a social pressure from SLU about the environment and different travel forms, but that no one was changing their behaviour because of it. The social pressure created by co-workers had a greater effect on the participants, where they started contemplating if their choice of travel was unfavourable, but that they still could not justify the extreme time difference between car and public transport.

In Alnarp there were three groups of people, 1) those who were unfavourable to public transport and carpark fees, yet felt the social pressure to change but did not. 2) People who were favourable to public transport and carpark fee, yet felt the social pressure by the community to change and still did not and 3) those who were favourable and were willing to change their behaviour.

Two of these groups agree with Ajzen (2008) statement that subjective norms are independent of attitudes toward the specific behaviour and people can have unfavourable attitude towards a specific behaviour and still have a social pressure to perform it and vice-versa. But one of

the statements is a group of people that is favourable to the behaviour and feels the social pressure to change but still does not. This means that there is a group of people who wants to change, but do not have the necessary support from the infrastructure and public transport system to make that a viable option. According to Petrunoff et al (2015) the accessibility to public transport is an important factor in order to be able to create a successful carpark management.

In the Ultuna focus group it could be gathered that the perceived social pressure for not driving to work was non-existing outside of this newly considered carpark fee. Travelling by car to work was seen as a necessity for employees living on the countryside which was encourage so the employees could get a different perspective on their work.

In the discussion from Umeå's focus group they had a different perception of the social pressure created by SLU and the co-workers. The participants in the group said that in regards of travelling to work SLU made it easier to choose alternatives like public transport and bicycle instead of taking the car. Furthermore, they did not go out and say that it was wrong to take the car to work like they do with flying and taking the train for business travel. The carpark fee was not enough on its own to create a social pressure for the employees to reflect on their travel mode. In Umeå they had two types of people in the focus group. One that was unfavourable to public transport and where they felt no social pressure despite the installed carpark fee to change their behaviour. The other group were favourable towards public transport and carpark fees, but still not feeling a social pressure from the fee. However, felt it from the society and health reasons, because of this they felt the need to leave their cars at home.

Unlike at Alnarp and Ultuna campus, Umeå has an installed carpark fee on their carparks but it has not created a social pressure to change behaviour. They also feel no pressure from the upper management to change. In Umeå the people who want to change feels that they can do so without too much problem and the people who do not want to change feels no pressure to do so. Cairn et al (2008) states that in order for carpark management to work it is important that the organisation raise the awareness to why this change is needed in order to get the employees to be willing to change their behaviour.

6.3.3 Perceived behavioural control and habit

Perceived behavioural control is the individuals own perception of how feasible it is to perform the different available options (Verplanken et al., 1998). Perceived behavioural control is largely dependent on how much the participants believe that they can perform a specific behaviour.

In Alnarp there was a case were three of the participants had similar obligations to handle outside of work. They were parents to younger kids around the same age which needed to be picked up from kindergarten and school. Despite this they still had different perceptions on public transport and the possibility of using it. One of them had a very unfavourable view on public transportation and could not see a possible solution on how to change the behaviour towards using public transport instead of the car because of time constraints. The second one found possibilities in using the time when traveling with public transportation for something good for example working while sitting on the train. The third person in the group was favourable to public transport but did not believe it was possible to make the behavioural change.

One of the participants in Umeå focus group was also unfavourable towards public transport even though the participant had good connections to public transport plus having no extra obligations that would necessarily require a car.

These thoughts on not willing to change behaviour could be caused by habit, where driving might have become an automatic response for this type of situation. According to Chen & Chao (2009) travel mode choice can be seen as a deliberate process, but also as a behavioural habit. Meaning that in this case the individual has made a reason-based decision in the past and then continued it because of habit even though the situation and alternatives might have changed. It can also be for instances where the individual does not believe they can perform the specific behaviour and therefore do not consider it. This would be in agreement with Bandura (1997) statement that the more an individual believe they can perform a specific behaviour the more likely they are to preserve and therefore succeed.

Perceived control is affected by attitudes and subjective norms, so if the individual has unfavourable attitude towards the specific habit and the subjective norms do not counter it, then it is not likely that the individuals intended behaviour will change.

6.4 Dual process theory

Dual process theory is a collection of multiple theories on decision making, reasoning and social cognition (Evans, 2014). Earlier theories within behaviour has made the assumption that people act rationally. However, people do not always act rationally and sometimes do not choose the alternatives that is best for them (Vallgård, 2012). There are several reasons for why people do not always act rationally. People tend to act alongside the alternative with the least resistance and often end up stuck in an old habit, which is shown in the gathered empirical data.

The participants in the focus groups explained how old habits had changed their transportation mode during their work time. There were participants who had switched to using the bicycle to travel for work, because they thought it was refreshing and faster, but had to switch back to car for logistic reason. Due to habits the participant had not changed back to bicycle again when the opportunity presented itself. There were also participants who would always take the car to work no matter if the other alternatives were better. They were used to taking the car and did not want to switch. The participants also thought that the only reason why the carpark fee was such a debated subject was because of people's habits.

According to Kahneman (2011) people have two systems of decision making. System 1 which is an automatic system used for short-term decisions; they are fast, emotional, reflective and used with high frequency. System 2 is slow, thoughtful and rational.

The introduction of a possible carpark fee at Ultuna and Alnarp campus has caused a disturbance in the employees system 1 decision process, which could be one of the causes for the debate that has been raised from this. In Umeå the carpark fee is already introduced but the participants thought that it had not caused a significant change in people's decision process. According to Mont et al (2014) system 1 handles the day-to-day decisions while system 2 handles the bigger longer impacting decisions. The knowledge and experience

gathered from peoples system 2 will overtime start applying into their automatic system (Kahneman, 2011).

In order for the carpark fee to become more generally accepted by the employees it is important that SLU speaks to the slow and rational part (system 2) of the employees. For the carpark fee to have any lasting effect it will be needed to have soft measures that introduces initiatives and actively encourage the communication between the organisation and the employees. According to Petrunoff et al (2015) organisations should actively work on marketing the reason for the introduction of the carpark fee and have meetings with the employees to help raise the awareness in the organisation. By doing so the reflective part of the decisions making should be more activated and overtime start transferring in to the day-to-day decision process.

7 Conclusions and future research

Chapter 7 of this study addresses the aim of the report, which is to investigate if the considered carpark management policy on SLU campus in Ultuna, Alnarp and Umeå is the appropriate way of action to create a behavioural change in the employees workplace travel. This chapter will present the major findings of this study and will end with reflection on future research on this subject area.

This study is a case study of SLU, a University that aims to become climate neutral by the year 2027. In order to achieve this aim of becoming climate neutral SLU has created environmental policies within the university. SLU has also laid out a proposition to extend their environmental policies to include how people travel to work by installing a carpark fee on their main campuses Alnarp, Ultuna and Umeå to create a behavioural change with their employees to switch from car to public transport. The empirical result from this study shows that this proposition would not create the desired effect.

Two research questions were raised to help answer and clarify the aim of this study. The first question; *How is SLU:s geographical location and public transport infrastructure perceived by their employees?* The results from the focus group discussions revealed that the most valued aspects of workplace travel were flexibility, effective time travel, comfort and simplicity. From the empirical results all of these aspects were achievable by traveling by car but less so with public transportation. Ultuna campus lies on the outskirts of Uppsala and the employees perceived that the public transport connections were lacking in its flexibility and effective time travel. Alnarp campus has a similar situation as Ultuna, the campus lies between two cities and the public transportation system was not perceived to have the development needed to fulfil the desired aspects of workplace travel. Umeå campus lies in the middle of Umeå with a public transport hub five minutes away from campus. The public transport system in Umeå was perceived as sufficient tool for workplace travel because it was well connected and most public transport stopped there.

The second research question; *How do the employees perceive SLU: s soft measured transport policies and are they sufficient to support the new carpark management policy?* In both Alnarp and Ultuna campus the empirical results showed that the employees perceived there to be no soft measured transport policies installed to help support a new carpark management policy. On the contrary they thought that SLU had removed previous policies that might have supported it. In Umeå campus the perception was similar to that of Ultuna and Alnarp, that the carpark fee was introduced, but no other measures had been put in place to encourage the employees to switch to an alternative transportation mode.

The aim of this study was to investigate if the considered carpark management policy on SLU campus in Ultuna, Alnarp and Umeå is the appropriate way of action to create a behavioural change in the employees workplace travel. From the analysis and discussion from the previous chapter it can be gathered that a carpark fee on its own would not change the employees' behaviour towards driving by car to work. This study shows coherence with previous studies in this field indicating the importance of having soft mechanisms around the carpark fee to help support and improve other available workplace travel alternatives, as well as, the employees' perception toward public transportation. The result from this study shows that this could be achieved by increasing the employees' knowledge of the available alternatives and improving the "know-how" on how to best utilise it. It can also be gathered from the result that working with the government to improve the available public

transportation connections to the campuses is going to be a key feature to help change the employees' attitudes toward the public transport system. This study concludes mechanism needed for SLU to support a behavioural change with their employees', which can be useful for the university when embarking on this endeavour.

This study empirical data focuses on focus groups within the three main campuses of SLU. Conducting a study that interviews other stakeholders and employees, surveys that cover a larger part of the SLU population could be an interesting extension to this study to provide a broader perspective. Moreover, if SLU decides to implement the carpark management policy it would give an interesting opportunity to observe the implementation over a longer period of time and see if the policy created the desired effect.

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