# GREEN ON THE ROAD
## AN ANALYSIS OF SUSTAINABLE COMMUTING

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## Colophon

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## Summary

The problem of global warming due to excess greenhouse gas emissions has been a major concern in the past decades, in which transport plays a crucial role. A significant amount of greenhouse gas emissions comes from commuting; employees travelling from their house to their work location. Since organisations are a central actor in any societal transition towards a sustainable society, they could play a crucial role in becoming more sustainable as a society. However, organisations need more guidance in this process. This research will explore to what extent the management of an organisation considers it necessary that commuting takes place in a sustainable way and whether the management takes any action upon this. The research also examines sustainable commuting when it comes to determining a new workplace location for an organisation. Therefore, the following research question is formulated: *"To what extent does the management of an organisation consider it necessary that commuting takes place in a sustainable way and how does the management act upon this?"*

The theoretical foundation of this research is Discourse Analysis and the concept of Corporate Social Responsibility. To answer the research question, six qualitative interviews with managers from different organisations were held, and internal documents from these organisations were studied. The results show all managers interviewed in this research are concerned in a certain way about the CO2 emissions of commuting. These concerns are dominated by two discourses: the individualistic and the systemic. This study showed an interplay between these two discourses.

Next, the results show a wide range of actions managers take to commute sustainably. To capture the actions managers perform, three forms of capital were linked, the business case, the natural case, and the societal case. The concepts of eco-efficiency, eco-effectiveness, socio-efficiency, and socio-effectiveness were used to explore corporate sustainability. The results demonstrate that all three forms of capital are considered important in becoming truly sustainable as an organisation.

The last aspect that is studied in this research is the (re)locating process of the workplace location. The results show that (re)locating the workplace location to a location nearby a train station is a trend in the mobility field and can be interpreted as a movement towards sustainable commuting since it makes it easier for employees to travel by public transport. It can be explained that managers take sustainable commuting into account since the accessibility by public transport is a deciding factor in the (re)locating process and, therefore, consider sustainable commuting necessary.

## Preface

Before you lies the final product of the master thesis *Green on the road: An analysis on sustainable commuting*. It was a process of months of writing, rewriting, and fine-tuning, which kept me busy from March till December 2021. I would like to thank the following people for their involvement and support in this research process.

The research is commissioned by Syndesmo, where I executed an internship during the whole period of writing the thesis. The Covid-19 situation made it not always easy to fulfil a full-fledged internship, but I would like my supervisor Jos Hollestelle for the support and weekly meetings to answer all my questions. Besides, I would like to thank all the interviewees for their effort, time, and valuable knowledge. Without them, I would not have been able to conduct this research. Also, speaking with these organisations gave me a good insight into the sustainability ambitions of organisations. I am grateful for this because it has given me a better idea of how organisations deal with sustainability, which inspires me for my future.

Secondly, I would like to thank my thesis supervisor Duncan Liefferink. I appreciate the close guidance and support during the whole process. The feedback was always valuable and taught me a lot through the writing process. The trust, quick answers via e-mail, and always being open for an online meeting have helped me a lot during the process.

Lastly, I would like to thank my family and friends. My family has always motivated me during the process, and I could always discuss my research with them. I would like to thank my friends who have become study buddies, since we have motivated each other in the writing process and going to the university library together has helped me a lot.

I hope you enjoy reading my thesis.

Lisa Bialoskorski

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### Internship

The internship for this research took place at Syndesmo from April until December 2021. Syndesmo is a mobility consultancy agency based in Utrecht. Syndesmo advises their customers about trends and developments in the field of mobility and focus on sustainable solutions. At this moment Syndesmo is developing a mobility tool to calculate the CO2 emissions of commuting. This tool provides insight into how much CO2 employees emit when commuting. The elements of the tool are the form of mobility (car, public transport, bike), the location of the organisation, and the postal addresses of their employees. The outcome of the tool can help new organisations to consider where they would like to locate their offices, from a sustainability point of view. The current customers can use the outcome of the tool when relocating their offices. In general, the tool can help organisations to gather information about their ecological footprint.

Developing the tool is not the hardest part for Syndesmo since the information of the different elements is quite easy to gather. The hardest part for Syndesmo is how to interpret the outcome; what exactly does the outcome mean for an organisation? My task at Syndesmo was to gather formation about sustainable commuting so it will be easier for Syndesmo to interpret the outcome and in the end help their customers. Therefore, my research focused on how important organisations consider sustainability when it comes to commuting and (re)locating their workplace location. The outcome of this research will help Syndesmo to gain more insight into the considerations and thought processes of their customers. This means that in the end, they are able to make mobility tool more relevant and advise their customers in a more valuable way.

## 1. Introduction to the research

### 1.1 Problem statement

The problem of global warming due to excess greenhouse gas emissions has been a major concern in the past decades (Muñiz & Garcia-López, 2018). The transport sector accounts for 14% of global greenhouse gas emissions (Hensher, 2008). During the UN Climate Change Conference 2021 in Glasgow, it became clear that the emissions of the transport sector are rising faster than those of any other sector. CO2 emissions have increased by 13% over the last 10 years, with emissions associated with transport being as high as 25% (Wang & Zen, 2019). Hence transport is one of the environmental issues an organisation has to deal with (Barrett & Scott, 200). A significant part of emissions originates from cities in which commuting to and from work plays a dominant role (Muñiz & Garcia-López, 2018). At this moment commuting can be seen as a polluter since it emits greenhouse gas emissions, of which CO2 makes up the vast majority. Commuting has therefore a significant impact on the ecological footprint of an organisation (Muñiz & Garcia-López, 2018). Organisations are central actors in our societal transition towards a sustainable society (Baumgartner & Rauter, 2017). Therefore, this study gives organisations a prominent role. In this research, organisations are interpreted as service-providing organisations, with or without a profit motive. Since there is a lot to be gained in the mobility plan of an organisation, this facet becomes increasingly relevant for them. Although, organisations have difficulties coping with their mobility plan into a more sustainable plan because it often asks for major changes in the organisational structure. Since organisations are this central actor, and therefore a link in the sustainability debate, it is important to give them more guidance in this process. In the end, if employees are aware of sustainable travel options or have a shorter commute time, they will emit less CO2 which has a positive effect on slowing down global warming.

To slow down this process of global warming, existing literature suggests shifting towards shared modes of transportation, such as, public transport and car-sharing (Iyanna, Bosangit, Lazell & Carrigan, 2019). However, at this moment these mobility possibilities are not used as often since people prefer using a private car (Iyanna et al., 2019). On top of this, convincing commuters to adopt new forms of transport is a hard task, and rarely a question of infrastructure alone. Existing literature expresses that other approaches are needed, understanding the perspective of the management of organisations towards sustainable commute could give them more guidance to adapt new forms of mobility and in the end emit less CO2, which is positive for our future generations.

## 1.2 Research aim

People must travel more sustainably in the future, considering the effect of our travel behaviour on the climate. Commuting is part of our travel behaviour and therefore this research explores how important sustainable commuting is considered. This research gains insight into the sustainability considerations of managers of organisations in terms of commuting. In addition, this research explores how these considerations are reflected in the organisation's discourses and actions. This research first starts with identifying how important the management of an organisation finds sustainable commuting behaviour, which means travelling with low CO2 emissions. This will be followed by analysing the actions that managers take to act more sustainably thus reducing the CO2 emissions. This is of added value because it shows whether managers only have a discourse or also behave following their discourses. Lastly, the research will explore the role of sustainable commuting when it comes to (re)locating the workplace location. This shows the importance of employee travel movement accordingly to managers.

## 1.3 Research question and sub-questions

"To what extent does the management of an organisation consider it necessary that commuting takes place in a sustainable way and how does the management act upon this?"

1. To what extent and how are managers concerned about commuting sustainably with low CO2 emissions?
2. Do managers take any action to reduce the CO2 emissions of commuting?
3. How important is sustainable commuting for an organisation in determining a new workplace location?

## 1.4 Societal relevance

In 2015 the United Nations set the 2030 Agenda for Sustainable Development which provides a shared blueprint for peace and prosperity for people and the planet. To reach the 17 Sustainable Development Goals it is important to undertake actions to tackle climate change. The transportation sector has become more and more important in reaching these goals since it has a big influence on our transition towards a sustainable society (Horner, 2004). However, the process towards sustainable development has been rather slow (Baumgartner & Rauter, 2017). Governments cannot achieve sustainable development on their own. In effect, they need the support and assistance of organisations and the public (Barrett & Scott, 2001). Even though organisations are central actors, they need more concrete guidance to allow them to act strategically and successfully in a sustainable way (Baumgartner & Rauter, 2017). This research can contribute to this guide for organisations with gaining insight into the sustainability considerations when it comes to commuting. In addition, this research could inspire other organisations and give them guidance towards a sustainable mobility plan.

Another relevant aspect that should be considered is the current Covid-19 pandemic. Due to the pandemic, a lot of people have been working from home, which is considered a permanent trend (NOS, 2021 October 12). Even after the pandemic, many people who have been introduced to working from home want to continue to do so partly after the pandemic is over. Of those who can work from home, 52% would like to work from home more than half of their contract hours (NOS, 2021 October 12). The *Anders Reizen* Coalition states employers are insufficiently responding to this and not prepared for this shift. This shift will affect our travel behaviour since employees don't have to travel as often as we used to. Additionally, the use of videocalls for business meetings have been introduced during the pandemic and have been proved very useful. Therefore, employees have to travel fewer long distances because meetings that require a lot of travel time are easier held online. Therefore, employees will travel less often and less far away, and managers are not prepared for this change. This research could help to give more insight into commuting behaviour and the role of the pandemic.

One step further, the shift in our working and travel behaviour could lead to fewer people at the same time at the office. This allows organisations to decrease their office square metres, which could result in increasing demand in relocating workplace locations. This research contributes to more knowledge about the role of sustainability during the process of relocation of the workplace. Thinking of travel behaviour more sustainably and smarter dealing with locating workplaces could lead to more sustainable considerations in the future, and is therefore beneficial for the society.

Lastly, it is relevant to look at the current transport policies and how this research could help policymakers. As stated before, governments need the assistance of organisations and the public in the sustainability transition. Accordingly, during the UN Climate Change Conference UK 2021 transport was an important topic. During the conference, it was discussed that to meet the goals of the Paris Agreement, a transition to zero-emission vehicles must need to happen more quickly. The research could contribute to more insights into sustainable ways of mobility and how organisations act upon this. Therefore, the findings may help inform the development of climate change mitigation policies for the transport sector.

## 1.5 Scientific relevance

When it comes to earlier research, often the employee side is considered when it comes to commuting. It is a logical step to interpret commuting as something that is in the hand of the employee. It is the task of a prospective employee to take the commuting time into account or the workplace location during the process of moving. The part that organisations could play in this case is often forgotten. That's why often the focus of the existing literature lays on the employee side since people often think it is their task to look at their travel time and mobility options (Clark, Huang & Withers, 2003; Stutzer & Frey, 2008). Stutzer and Frey (2008) put the spotlight on the employee side because people spend a lot of time commuting and often find it a burden. On top of this, existing literature answers questions such as if households minimize their commuting distance when they change residences (Clark, Huang & Withers, 2003), or what other aspects compensate the burden of commuting (Stutzer & Frey, 2008). The literature focuses less on the organisation's side and the considerations of the management in this topic. While companies and organisations are central actors in any societal transition towards a sustainable society (Baumgartner & Rauter, 2017). Therefore, this research can contribute to fill the knowledge gap.

Furthermore, earlier research focuses often on the costs of commuting in terms of economic aspects or the physical burden, while the environmental considerations are taken less into account. When the environmental aspects are considered, the research focuses on the environmental impact of commuting in a specific city (Engelfriet & Koomen, 2018), the societal link to the management of an organisation and its actions is not often made. To achieve the 2030 Sustainable Development Goals, it is important to investigate research on the environmental impacts of commuting. As written before, it is important to act now upon climate change. This research zooms in on actions the management takes to stimulate sustainable commuting behaviour and, therefore, contributes to the existing knowledge and literature on travel behaviour.

## 2. Theoretical framework

This chapter provides an overview of the existing literature on commuting and sustainability. The literature will be discussed using two theoretical concepts: Discourse Analysis and Corporate Social Responsibility (CSR). The chapter will start with an elaboration on discourse analysis and will be followed by a section on exploring (un)sustainable commuting. After this, there will be three paragraphs to explore each sub-question. Paragraph *2*.3 Two Paradigms of Travel Behaviour will describe two travel behaviour discourses. Paragraph 2.4 People, Planet Profit will use CSR literature to elaborate on the actions managers take to decrease CO2 emissions. Paragraph 2.5 Workplace Location will zoom in on the role of sustainability during the (re)locating process of the workplace. In paragraph 2.6 the theoretical concepts will be operationalised. The chapter will end with a detailed paragraph on the conceptual model; paragraph 2.7. The conceptual model will sketch an image of how the given literature is connected to this research.

### 2.1 Discourse analysis

This paragraph will give the reader an image of what discourses are and how discourse analysis will be applied in this research. This background information is useful to understand the different sets of ideas of managers that will be described later. Discourse analysis has been given generous awareness throughout the literature. One of the founding fathers of the concept of discourse is Michel Foucault. According to Foucault, a discourse is a set of statements that belong to a single system of formation. The analysis of thought is connected to the discourse that it is adherend to (Foucault, 1970). Every statement is dependent on its conditions, its occurrence, and its relation to other statements. In this sense, discourses can be seen as a group of statements that belong to one and the same discursive formation (Foucault, 1970).

The ideas of Foucault about discourses were adopted by Maarten Hajer in 1995. Hajer (1995) defines discourses as an 'ensemble of ideas, concepts and categories through which meaning is given to social and physical phenomena, and which is produced and reproduced through an identifiable set of practices'. In other words, the discourse can be seen as a social construction of reality that creates a knowledge system, which influences our social practice and relations. According to Hajer and Versteeg (2005, p. 175) "discourse analysis illuminates a particular discursive structure, that might not be immediately obvious to the people that contribute to the debate". The similarities of Foucault and Hajer lay in the fact that both researchers believe in practices constituted through structures and the other way around. This means that in one way people give meaning to the world around us through speaking and writing. On the other hand, the world where we give meaning to influences people and affects their life. The ideas of Foucault and Hajer form a good base to understand how discourses will be used in this research.

Now that it is clear what discourses are, it will be explored why using discourse analysis gives strength to the research. Hajer and Versteeg describe the following three strengths of using discourse analysis: "its capacity to reveal the role of language in politics, its capacity to reveal the embeddedness of language in practices and its capacity to answer 'how' questions and to illuminate mechanisms" (Hajer & Versteeg, 2005, p. 176). Especially the first and the last strength are important in this research. The first strength will be important because the analysis will uncover statements of managers that consist of the same language but mean something different. The last strength will be important in this research because discourse analysis can help to explain why certain ideas of commuting do catch on and others do not.

Lastly, it is important to mention why discourse analysis especially fit this research. A discursive strategy could help with answering the research question since it gives insight into the ideas of how the management of an organisation thinks upon sustainable commuting. Discourse analysis gives guidance towards the different perceptions of managers, which is especially important in this research since the research question turns around acting sustainably. There are several claims in the literature that social desirability affects people's response to environmental attitudes and ecological behaviour (Milfont, 2008). A discursive strategy could help to surface the underlying attitudes and perceptions and is, therefore, a strength to use in this research.

## 2.2 Exploring (un)sustainable commuting

This paragraph will give some background information about how commuting takes place nowadays and how unsustainable our travel behaviour is. Transport is a major cause of air and noise pollution and significantly contributes to climate change (Iyanna, Bosangit, Lazell & Carrigan, 2019). The transport sector accounts for 14% of global greenhouse gas emissions (Hensher, 2008). Daily traffic flows are at the origin of many environmental externalities generated by economic and social processes (Cirilli & Veneri, 2014). Effects of this excessive travelling are congestion, pollution, and environmental impacts, which threaten our future sustainability (Horner, 2003). Travelling to and from work is a major source of an increase in transport-related carbon dioxide ($CO_2$) emissions (Wang & Zeng, 2019). Mouli et al. (2016) calculated the average $CO_2$ emissions in the Netherlands of an employee per year when travelling by a fuel-powered car. This resulted in an average amount of 1.8 tonnes of $CO_2$ per year with an average travel distance of 55 kilometres a day and 260 working days per year. This shows an extensive amount of $CO_2$ emissions from commuting and is in line with the research of Wang and Zeng (2019). The researchers show an increasing trend in the past years of $CO_2$ emissions generated due to commuting. The transport system could play a central role in reducing global greenhouse gas emissions (Iyanna et al., 2019).

In consideration, commuting is an important aspect of our lives that demands a lot of our valuable time (Stutzer & Frey, 2008), the management of organisations needs to take this into account. While literature does show that organisations nowadays are much involved in acting in a sustainable way (Barrett & Scott, 2001). Managers are increasingly aware of climate change and that mobility has a big influence on our environment (M. van der Stok, personal communication, April 28, 2021). This awareness can, for example, be seen in the growing interest in calculating their ecological footprint (Barrett & Scott, 2001). The ecological footprint is a flexible tool that can provide organisations with an understanding of their ecological impact on the environment. Since commuting is such a big part of the ecological footprint of an organisation, much is feasible to achieve a more sustainable society. Therefore, shifting our unsustainable commuting behaviour to a more sustainable one is a dominant aspect of the sustainability transition.

### 2.3 Two paradigms of travel behaviour

In this section, two discourses of travel behaviour will be described and will therefore help to answer research question 1. In the literature human (travel) behaviour often is assigned to two largely dominating paradigms since the 1980s: the individualistic paradigm and the systemic paradigm (Iyanna et al., 2019). In this research, these paradigms will be seen as the two discourses that managers adhere to. The individualist paradigm is primarily based on social psychological and economic theories to explain individual behaviour. On the one hand, the social-psychological approach of the individualistic paradigm "ascribes behaviour to perceptual and attitudinal influences on travel behaviour such as beliefs, norms, and values" (Iyanna et al., 2019, p. 2). This implies that behaviour can be changed if the cognitive components can be identified and modified. For example, the way of travelling can get influenced by the experience of driving and perceived stress, safety, enjoyment, or excitement (Iyanna et al., 2019). On the other hand, the economic approach is based on the dominant neoclassical approach that assumes that individual behaviour can be understood from the goal of maximizing utility (Lui, Oosterveer & Spaargaarden, 2016). Thus, people have the desire to maximise the expected utility of available transport modes. In this research, both the social psychological and economic approaches will be considered. The social-psychological approach is in this research reflected in the effect of employees' perceptions and attitudes on the business operations of managers. Thus, when introducing or changing an element, a manager thinks about how an individual employee would react to it and will approach every employee individually. The economic approach is reflected in this research in individuals aim to maximise their utility.

Next to the individual paradigm, the systemic paradigm exists. The systemic paradigm shifts the focus from the individual to the system and is based on the premise that travel behaviour can be influenced by the introduction of regulations, technology, and appropriate infrastructure (Iyanna et al., 2019). This research will focus on the regulation element of the systemic paradigm. Regulations are interpreted in this research as arrangements by an organisation itself. Thus, regulations are interpreted more broadly and not specifically as government regulations or strict rules. The role of technology and infrastructure in the systemic paradigm will not be considered in this research. This can be explained by the fact that Iyanna et al. (2019) interpret technology as a nudging tool in their research. Using technology as a nudging tool is about gamification systems, visual feedback systems or systems that properly structure the available choices in decision making situations (Bothos, Apostolou & Mentzas, 2015). This is a broader topic than just the discourse of managers' commuting choices. To delineate the research and to have a focus, it was decided to not include technology in this research. The infrastructure facet will not be considered because Iyanna et al. (2019) describe infrastructure as the organisational structures and facilities such as stations, bus shelters, and stops. The research question focuses on managers and their considerations and actions, they cannot influence the infrastructure, that's why this facet is less relevant for this research.

Characterising the complexity of daily commuting routines is challenging and both discourses have their followers. Iyanna et al. (2019) do not describe a dominant paradigm, even though travel behaviour is often described as a system because people see travel behaviour often as a system rather than an individual activity. In addition, there should be three shortcomings of the individualistic paradigm taken into account (Iyanna et al., 2019). First, people associate different modes of transport with cultural and social meanings that go beyond a person's affect attachments. Therefore, it is also crucial to understand these cultural and social functions and meanings to understand people's travel patterns and choices. Second, the individualistic paradigm ignores the social nature of human travel behaviour. The travel choice of a person can be influenced by someone else's opinion or needs. Third, individualistic approaches fail to explain structural influences on travel behaviour even though individualistic approaches get influenced by this. For example, transport policy, infrastructure, laws, and regulations. Therefore, when analysing individualistic approaches, it is important to keep these shortcomings in mind. Even though these shortcomings of the individualistic paradigm exist, this does not automatically mean that the systematic paradigm is more important or dominant. Because when explaining commuting patterns, the individualistic paradigm must play a role. Following Iyanna et al. (2019) the systemic paradigm will fail when focussing too much exclusively on the system to change travel behaviour commuting patterns without keeping an eye on the individual. Therefore, both paradigms will be explored in this research. These paradigms will serve as a guide to map managers' discourses on sustainable commuting. This will reveal if managers are concerned about commuting sustainably and if they act from a more individualistic or systemic approach. In other words, these discourses will show if and how managers are concerned about sustainable commuting by acting from a perspective where they approach employees individually or come to certain behaviour and policymaking by changing the structure.

## 2.4 People, planet, profit

This paragraph will help to answer research question 2, the different actions of managers will be categorised by Corporate Social Responsibility (CSR) literature. In 1997 the business writer John Elkington coined the triple bottom line framework considering people, planet, and profit. To work towards a more sustainable society these three elements must work harmoniously together. If one case is not considered, it will harm the other elements. Thus, economic growth can only happen for an organisation when they also include the environmental and social aspects. The idea of people, planet, and profit can be regarded as the pillars for Corporate Social Responsibility (CSR). CSR inherently connects the economic, social, and environmental aspects. CSR is defined in many ways (Dahlsrud, 2008), the definition that will be used in this research is the one of the Commission of the European Communities (2001); ‘A concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis’. Thus, CSR further illustrates the need for economic, environmental, and social sustainability. Organisations which would like to become more sustainable should therefore act on all three facets of CSR. Dyllick and Hockerts (2002) describe this phenomenon as corporate sustainability, which has been given a lot of attention by academic scholars and organisations. Organisations are increasingly faced with the question of how to further develop their economic sustainability by paying attention to social and environmental issues.

Dyllick and Hockerts (2002) argue three types of capital within the triple bottom line of corporate sustainability: economic capital, natural capital, and social capital. Together these forms are needed for an organisation to become truly sustainable. In this study, the economic aspect of CSR can be seen as the economic capital of Dyllick and Hockerts (2002). Similarly, the environmental aspect can be interpreted as the natural capital and the social aspect as the social capital. To each form of capital, the authors ascribe two criteria to become more sustainable and how to increase sustainable development (Figure 1). This shows that acting in 'a sustainable way' goes further than just looking at the business level of sustainability which is often equated with eco-efficiency. Therefore, the actions of organisations to become more sustainable can be broadly interpreted. When describing these actions, the terms effectiveness and efficiency will be used extensively in this research. To avoid confusion, effectiveness will be seen as achieving a goal or completing a task. Efficiency will be about achieving a goal but with the costs and benefits taken into account, so in the most optimal way. The section will further zoom in on every form of capital and further illustrate how organisations are already involved in becoming more sustainable or where there is still a lot to be gained.

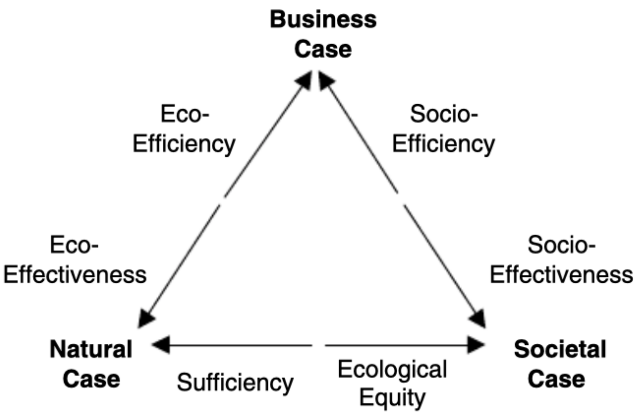


Figure 1: Overview of the six criteria of corporate sustainability, Dyllick & Hockerts, (2002)

### *2.4.1 Business case*

Starting with the business case, which focuses on the economic aspects of acting sustainable. Current indicators to act in an eco-efficient way for organisations include "energy, water and resource efficiency, as well as waste or pollution intensity" (Dyllick & Hockerts, 2002, p. 136). Acting eco-efficient is one of the most obvious ways of becoming sustainable. Examples of acting eco-efficient to reduce CO2 emissions can be introducing flexible work shifts, which reduces CO2 emissions from traffic since people spend less time in traffic jams (Ge & Polhill, 2016). Another example of engaging in eco-efficient activities is involving financial support, e.g. covering costs of purchasing environmentally-friendly equipment, implementing stricter quality controls, or new health and safety (Branco & Rodrigues, 2006). In addition, financial support may also include compensation for travelling by bike or receiving financial help concerning the purchase of a bike (Nematchoua, Deuse, Cools & Reiter, 2020). Furthermore, organisations can act in a socio-efficient way, which is the relation between a firm's value-added and its social impact. The goal is to minimize negative social impacts (i.e. accidents at the workplace) and maximize positive social impacts (i.e. donations, training, health benefits) in relation to the value-added. Acting socio-efficient has also been in a rise of awareness by managers during the Covid-19 pandemic, for instance, vitality has become more and more important (M. van der Stok, personal communication, April 28, 2021). It has become more important for managers to take care of employees, they have to make sure that employees are able to work from home, prevent burnouts, and offices should be set up safely according to the Covid-19 guidelines (M. van der Stok, personal communication, April 28, 2021).

### 2.4.2 Natural case

Secondly, the authors mention the case of natural capital. An example to achieve nature sustainability is efficient environmental management and protection (Branco & Rodrigues, 2006). According to Dyllick and Hockerts, natural capital is about eco-effectiveness and sufficiency. From an environmental point of view, the main issue is eco-effectiveness. Jakobsen describes eco-effectiveness as "improving the total impact on environment when the consumers need or demand is satisfied by alternative fulfilment of the function in question. One way of fulfilling a function is said to be more eco-effective than by fulfilling it in a different way, if it gives a larger contribution to sustainability of the eco-system in question than the second way of fulfilling the function." (Jakobsen, 1999, p. 101). In this research, eco-effectiveness will be interpreted as reducing CO2 emissions. An example of eco-effectiveness is more effective cars, where the focus will shift from fossil fuel efficiency to the effectiveness of solar-powered fuel cells. Another example of eco-effectiveness could be increasing plastic recycling such as making 100% plant-based plastic beverage bottles (Avlonas & Nassos, 2013). Besides, the consumer also has a role, since effectiveness gains are frequently undone by simple consumer choices, this is addressed as sufficiency (Dyllick & Hockerts, 2002). This is in line with Bocken and Short (2016, p. 42), who argue "the most obvious way to reduce the negative effects of human activity on the planet is to decrease resource consumption of those who currently consume the most". For instance, consumers could participate in a circular economy or could play a part in more sufficient use of materials. Thus, it is important to realise that consumption is an essential lever towards sustainability. Sufficiency is often discussed as an issue of individual choice, in this case the employees, rather than the responsibility of an organisation (Dyllick & Hockerts, 2002). This research focuses on the managers of an organisation and not on the employees, therefore, sufficiency is less relevant to answer sub-question 2.

### *2.4.3 Societal case*

The last form of capital is social capital. Dyllick and Hockerts argue "from a socio-effectiveness perspective, business conduct should be judged not on a relative scale but rather in relation to the absolute positive social impact a firm could reasonably have achieved" (Dyllick & Hockerts, 2002, p. 138). Back in the day, socio-effectiveness had little to do with sustainability, but nowadays it has become a substantive part of corporate sustainability. For instance, a generally positive social impact of an organisation may lower employee turnover, which therefore decreases the organisation's training costs for new employees (Mauerhofer, 2008). Furthermore, socio-effectiveness ecological equity is an important aspect of sustainable development. To achieve sustainability, an equitable solution will have to be found for the distribution of natural capital since the damage of current generations' consumption of natural capital has to be dealt with by future generations (Dyllick & Hockerts, 2002). At this moment it is still a hard puzzle to solve how the distinction of natural capital between the different generations should be made (Mauerhofer, 2008). The concept of ecological equity goes beyond individual actions, it is about the distinction of natural capital, which is less relevant for this research. Therefore, this concept will not be further considered in this research.

### *2.4.4 Relevant criteria*

As discussed above, not all criteria that Dyllick and Hockerts (2002) discussed are relevant for this study. The relevant criteria for this research are eco-efficiency, eco-effectiveness, socio-efficiency, and socio-effectiveness. An overview of the relevant criteria and the form of capital they belong to is given in figure 2. It is important to keep in mind that effectiveness is about the achievement of goals and that efficiency also includes costs and considerations. However, the meanings of both concepts cannot always be seen in black and white, the concepts are sometimes an extension of each other. Yet it is important to see the difference in this research between the four relevant criteria.

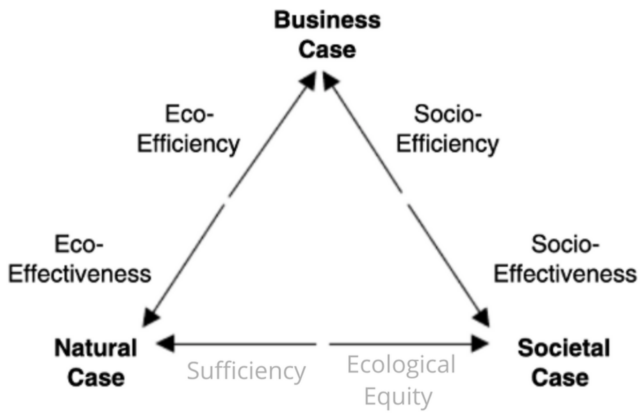


Figure 2: Overview of the relevant criteria of this research

## 2.5 Workplace location

The literature in this section will help to answer research question 3. First, some information about the employee point of view towards the workplace location will be given, this will be continued with literature about the organisation's considerations when (re)locating. There has been a lot of literature that focuses on the relationship between workplace choice and household residential location, and if this differs for one- or two worker households and men and women. Literature shows that the energy use of journeys to work is to a high extent influenced by the geographical location of the workplace (Næss & Sandber, 1995). Employees living in the low-density part of an urban area are more frequent car drivers and therefore use considerably more energy than employees who are living in a central, high-density area (Næss & Sandber, 1995). The same research shows that a central workplace location within the urban area is favourable if the aim is to reduce energy use and private car commuting. Therefore, it can be concluded that the workplace location does influence the employee's behaviour.

The other side of the coin is the organisation that has to determine its establishment when starting a business or moving. There are several aspects that organisations consider when determining a new workplace location. Accessibility of the office for employees and clients is one of the most central aspects in this consideration. For example, how well a site is connected to the railway network (Willigers & van Wee, 2011). The accessibility to high-speed train services is in the literature also considered as important (Willigers & van Wee, 2011). However, high-speed train services are used for business trips and since this research focuses on commuting it is less relevant for this research.

Another central aspect in determining a new workplace location is the direct environment of the workplace (Willigers & van Wee, 2011). The vibrancy of the direct environment is a key element, ‘industrial sites are out, downtown areas are in’ (M. van der Stok, personal communication, April 28, 2021). Due to the tight labour market, organisations want to position themselves as attractive employers. Trendy offices in the city centre, close to the shops and bars, are therefore becoming more and more popular (M. van der Stok, personal communication, April 28, 2021). On top of this, the academic innovative activities can play a role in workplace location strategies (Alcácer & Chung, 2007). Alcácer and Chung (2007) argue that less technologically advanced organisations favour a location with high levels of industrial innovative activities. While on the other hand “technologically advanced firms choose only locations with high levels of academic activity and avoid locations with industrial activity to distance themselves from competitors” (Alcácer & Chung, 2007, p. 760).

Finally, the building is also considered as important in the process of determining a workplace location (Willigers & van Wee, 2011). The architectural style of the building has an impact on the status, and the number of parking spaces is also considered relevant. In addition, ‘green’ energy-neutral buildings are becoming more and more popular (M. van der Stok, personal communication, April 28, 2021). Housing in an energy-neutral building is a way for managers to become more sustainable without any effort of their employees, which therefore causes fewer troubles and complaints from their side. In this way, this is often seen as an easy (but expensive) option to act more sustainable (M. van der Stok, personal communication, April 28, 2021).

## 2.6 Operationalisation of the theoretical concepts

In this research, the two theoretical concepts are discourses and Corporate Societal Responsibility. Chapter 2.1 and 2.4 gave already an elaboration of these two concepts and how they will be applied in this research. Within these two theoretical concepts, a number of other concepts have also been given substance in this research. These concepts are *commuting*, *sustainability*, and *CO2 emissions*. Commuting can be seen as travelling from the employee’s home to the workplace. Iyanna, Bosangit, Lazell and Carrigan (2019) define commuting as the regular, routine, and repeated journey between home and work. Since transport is one of the big polluters, commuting sustainably can be interpreted as travelling without compromising the future generation’s needs. This suits the definition of sustainability that is used in the CSR literature, where sustainable development is defined as “development that meets the needs of present generations, without compromising the future generation's ability to meet their needs.”. One step further, commuting sustainably can be interpreted as travelling with low CO2 emissions. Since Carbon dioxide (CO2) is the most significant greenhouse gas, accounting for about 65% of the total GHG emissions. One of the main sources of carbon emissions are cities, these being important areas for population and production (Wang & Zen, 2019).

## 2.7 Conceptual framework

This paragraph will connect the discussed literature to the specific aspects of sustainable commuting. The three sub-questions will together answer the research question. Therefore, this study will focus on three topics to answer each sub-question: the two discourses of travel behaviour, the three types of capital, and the workplace location. Each of them will have its indicators, based on the literature discussed earlier. First, this research will focus on existing discursive schemes of travel behaviour. According to these two discourses, it will be examined whether managers act from an individualistic or systemic approach, or if there is no dominant one. An overview of these indicators is shown in Table 1. The individualistic paradigm will focus on the perceptions and attitudes of employees towards commuting, these are based on norms, values, and beliefs of the individual. This means that managers will act on the perceptions and attitudes of their employees and approach everyone individually. Next to the perceptions and attitudes of employees, individuals also want to maximize their utility. This will result in people favouring the form of mobility which is the most beneficial to them, for example, the cheapest or the easiest option.

The systemic paradigm focuses on regulations. Regulations will be measured by mapping what kind of regulations managers execute to influence travel behaviour. This can be all kinds of arrangements made by the organisation, for example incentives or steering regulations.

| **Code Group** | **Code** | **Indicator** |
|---|---|---|
| Individualistic paradigm | Perceptions and attitudes of employees | Norms, values, beliefs of the individual |
| | Maximizing utility | The easiest/cheapest/less effort option of mobility |
| Systemic paradigm | Regulations | All kinds of arrangements |

Table 1: Indicators sub-question 1

The second sub-questions will answer whether managers take action to reduce the $CO_2$ emissions of commuting. To answer this sub-question there will be focussed on the concepts eco-efficiency, eco-effectiveness, socio-efficiency, and socio-effectiveness, an overview is given in Table 2. These four indicators are the most relevant in this study and will therefore help to answer the research question. Starting with eco-efficiency, which goal is to create more value with less impact. The aim is to ensure that commuting takes place sustainably, considering the costs and benefits. This can be done by investigating which forms of mobility are used and why. An example of the costs and benefits of different forms of mobility is shifting from cars to public transport, bikes, electric cars, or sharing cars. Flexible work shift is also an indicator of becoming more sustainable. When using flexible work shifts employees avoid traffic jams, which is beneficial for the CO2 emissions, or employees have less resistance towards public transport when they do not have to travel in rush hours. Managers can also meet their employees financially when they chose a more environmentally friendly way of transport or are willing to work from home more often.

Eco-effectiveness entails the improvement of overall environmental impact when consumer need or demand is satisfied through alternative fulfilment of the function in question. In this research, this is seen as sustainable business operations with the aim of reducing CO2, regardless of the means used to achieve it.

Socio-efficiency grasps the relation between economic impact and social impact. In this study, the focus will therefore be on vitality, and employee satisfaction, flexibility, and productivity. Vitality will be measured by indicating if managers take care of their employees. Especially during the current Covid-19 pandemic managers must make sure that their employees are doing well, have the possibility to work from home, and prevent burnouts. Next to vitality, employee satisfaction, flexibility, and productivity are important to consider. Employee satisfaction refers to the degree to which employees remain satisfied when investing in sustainability. Employee flexibility will be interpreted as how flexible employees can be due to the management's business operations and whether this flexibility is conducive to sustainability. This flexibility refers to being flexible in work, working hours, or means of transport. Employee productivity refers to the fact that investments in sustainability could be the expense of employee productivity.

The last concept is socio-effectiveness, which highlights the generally positive social impact of an organisation and how managers can affect this. In this research this can be seen as every employee should get equal possibilities to travel in an eco-friendlier way. For example, every employee should be supported when they want to travel by public transport, no matter the time or costs.

| Code Group | Code | Indicator |
|---|---|---|
| Eco-efficiency | Forms of mobility | Public transport, bikes, electric cars, sharing cars |
| | Flexible work shifts | If and how flexible work shifts are implemented |
| | Financial support | Financial compensation |
| Eco-effectiveness | Reducing CO2 emissions | Whether the goal is to reduce CO2 emissions |
| Socio-efficiency | Vitality | Managers take care of the vitality of their employees |
| | Employee satisfaction | Employees remain satisfied when investments in sustainability are made |
| | Employee flexibility | Managers provide their employees with certain flexibility so they are able to operate sustainably |
| | Employee productivity | Investments in sustainability may be at the expense of employee productivity |
| Socio-effectiveness | Equal possibilities | Every employee has the possibility to choose an eco-friendlier way of travelling |

Table 2: Indicators sub-question 2

The third sub-question will answer the question of how important sustainable commuting is for an organisation when determining a new workplace location. As discussed before three central aspects are taken into account when determining a workplace location: accessibility, the direct environment, and the building. An overview of the indicators of each aspect is given in Table 3. Starting with the accessibility literature shows that managers find it important that their office is located close to the highway, which implicates their employees travel by car, which is therefore a less sustainable option. On the other side, the accessibility to the railway network is also important, which implicates employees travel by public transport, and is therefore a sustainable option.

Next to accessibility, the direct environment of the workplace is also considered when determining a workplace location. The vibrancy of an area is important, downtown areas are often preferred to distinguish the organisation as a favourable employer. In addition, downtown areas are often easily accessible by public transport and due to lack of space more difficult to park cars. In this line, the preference for a vibrant area could also be stimulated by sustainability considerations. In addition, technologically advanced organisations prefer an environment with academic innovative activities. To become more sustainable, organisations should take advantage of innovations. Therefore, it could be assumed that organisations located in an academic innovative area are more likely to act in a sustainable way.

The last indicator that organisations take into account when determining a workplace location is the building. The building could offer different mobility facilities. For example, the number of parking spaces, or charging stations for electric cars. When a building offers a lot of parking spaces, it implicates that the employees travel by car, which is a less sustainable option. If an organisation considers charging stations of electric cars as an important aspect, they probably highly value sustainability. This is in line with how important an organisation considers an energy-neutral building. As stated before, an energy-neutral building is often considered as an easy, but an expensive option to act more sustainable.

| **Code Group** | **Code** | **Indicator** |
|---|---|---|
| Accessibility | Close to highway | Important for employees who will travel by car |
| | Close to railway network | Important for employees who will travel by public transport |
| Direct environment | Vibrancy | Located in a downtown area, easily accessible by public transport |
| | Academic innovative activities | Depending on how technologically advanced an organisation is |
| Building | Facilities | Number parking spaces, charging stations |
| | Energy neutral building | Easy (but expensive) option |

Table 3: Indicators sub-question 3

The indicators that are discussed in this section will serve as sensitising concepts during the interviews to answer each sub-question. This means that these serve as themes to be used as a form of guidelines during the interviews. In this way, some interview questions will be rather broad. This is especially important to answer sub-question 1 and 2, to see what managers come up with themselves during the interviews and therefore consider important. To answer sub-question 3 more specific questions will be needed next to the sensitising concepts. These questions will be more systematic about specific objects or concepts, for instance, questions about the number of parking spaces and charging stations.

## 3. Methodology

In this chapter, the methodological framework will be discussed. Firstly, the chapter will zoom in on the research philosophy and sample selection that was used. Secondly, a description of how the research strategy will be given. Thirdly, the research methods, data collection, and data analysis will be explored. Lastly, the chapter will end with an elaboration on the reliability and validity of the research.

### 3.1 Research philosophy

The term research philosophy refers to 'a system of beliefs and assumptions about the development of knowledge' (Saunders, Lewis & Thornhill, 2012, p. 130). The research philosophy can be seen as one's worldview, attempting to answer fundamental questions about what truth is and how it can be found (Guba & Lincoln, 1994). The research philosophy comprises ontological, epistemological, and methodological issues. Guba and Lincoln (1994) set out a typology of four different paradigms, that determine the research approach that will be taken. In this research, the ontology assumes that reality is created and shaped by social, political, cultural, economic, ethnic and gender-based forces. Which can be interpreted as historical realism and suits the idea of Critical Theory (Guba & Lincoln, 1994). This research assumes that there is not one 'real' reality; every manager has their believes and creates their reality which is shaped by society. This is in line with the ontology of Critical Theory; the reality depends on and is constructed by various characteristics in physical and social constructions and include the relation between them (Guba & Lincoln, 1994). The ontology of Critical Theory aims to uncover the hiding workings of society, which would otherwise not be revealed. The social contribution of reality creates a knowledge system and influences our social practices and relations. This means that people's interactions create representations of each other's actions and that this is considered natural or a habit over time. In this research, therefore, certain discourses can be adhered to by the created knowledge system.

The reality that is created can be conceived in a transactional way. Therefore, Critical Theory relates to a transactional or subjectivist epistemology and assumes that knowledge is mediated through value and thus dependent on it (Guba & Lincoln, 1994). Since Critical Theory assumes there is no 'real' reality, its epistemology tries to engage and get an idea of the reality. In this research, the researcher had a dialectical role, which means the influence of the interviewer and the interviewee on the outcome of the research are inevitable (Guba & Lincoln, 1994). Accordingly, the interaction between the researcher and the object are inextricably linked. Therefore, the methodology of Critical Theory requires a dialogue between the researcher and the subjects of the inquiry (Guba & Lincoln, 1994). It will be difficult to reproduce the research identically because of the role of the researcher. On the other hand, the aim is to explore the motivations of managers behaviour and the meaning of social phenomena from their perspective. This suits the exploratory nature of this research. Therefore, the methods that are used are more based on interpretation, accordingly, the knowledge is co-created.

The view of Critical Theory as a research philosophy suits the idea of discourses as power. As described in the literature chapter, this research uses discourses as a theoretical concept. Discourses are connected to Critical Theory because a certain discourse highlights an aspect that we interpret as important, this means automatically that there are also elements neglected (Kaufmann, 2020). Therefore, Critical Theory suits this research and is a fundamental assumption to answer the research question.

## 3.2 Sample selection

The sampling method that was initially used was quota sampling, where the selection had to be done by the researcher based on the number of units needed and features or characteristics of interest (Van Thiel, 2014). Originally, the idea was to interview ten organisations. However, during the research period, this proved to be difficult to realise. This was mainly due to the Covid-19 pandemic, which made the process slower and more difficult to find potential interviewees. All communication had to be held online, and it was therefore difficult for the researcher to get in touch with Syndesmo's customers, as the researcher was not physically on-site. Also, communicating online often means more distance and less natural contact, so Syndesmo colleagues, as well as potential managers to be interviewed, were often more difficult to reach. Because of this, and the fact that Syndesmo is not a large organisation, there was little or no selection of organisations that wanted to participate, all organisations that were open for an interview were welcome. As a result, six organisations were interviewed for this research. The sample that was selected is a broad and diverse sample, which suits the exploratory nature of the research well. The sectors in which the six interviewed organisations operate are: a financial institute, a municipality, a water supply company, a service organisation, a management and consultancy firm, and an accountant and tax agency. Thus, mainly service organisations with a commercial focus, except for the government agency. A more detailed overview of the interviewees is given in Appendix 1.

### 3.3 Research strategy

The literature study that is described in the second chapter serves as a starting point. Databases that have been consulted to construct the literature study are the library of Radboud University and Google scholar. The research strategy that was used to answer the research question were qualitative interviews and studying the website of the organisation and internal documents. The interviewed organisations are rather large, a first impression and some general information were retrieved from their website. This information is valuable to use as a basis because it gives a good picture of what an organisation wants to radiate and how it presents itself. Next to the websites of the organisations, internal documents were studied. Lastly, six qualitative interviews were held. Qualitative interviews do fit the research because of in-depth information and a high degree of confidence in the data (Van Thiel, 2014).

Van Thiel (2014) describes qualitative research as predominantly inductive in nature because it is typically geared towards the exploration and description of the research subject. However, the information that was gathered in this research is done by abduction, a mix of deduction and induction. This is done because the exclusive use of discursive strategies is not exhaustive. It benefits the research if there is also space for motives that were not originally expected. In deductive research, an explanation is sought for the research problem by using existing theories. The aim is to investigate whether the explanation suggested by the theory holds true (Van Thiel, 2014). This is done by the means of a literature study to set certain expectations and during the interviews, it was investigated whether the literature researched agrees with the opinion of managers. During the interviews there was also information gathered that was not expected from the literature study, a more general pattern or relation was found. This shows that induction has also been used in this research.

Furthermore, it is taken into account that all the interviewed organisations are customers of Syndesmo and Syndesmo is an organisation that highly values sustainability, therefore, bias could emerge. To overcome this bias, this research chooses to explore how sustainable organisations are, not whether they are sustainable. Additionally, the research focus is sustainability, people will not readily admit that they are not sustainable or want to become sustainable. Accordingly, speaking about sustainability often provide socially acceptable answers to the discussions. Social desirability bias is the participant's tendency to share their reality in line with what they believe will be socially acceptable and could emerge of societal norms or behaviour (Bergen et al., 2019). Bergen et al. covered five strategies to avoid of limit social desirability bias during data collection. These strategies are indirect questioning, providing assurances, probing for more information, requesting stories or examples, and prefacing the question. Examples of how these strategies are put into practice are posing questions about the past or others, reminding participants about confidentiality and anonymity, asking follow up questions, asking the participant to recount a personal experience, and acknowledging that all organisations have challenges. All these strategies were used by the researcher during the interviews to avoid bias.

### 3.4 Research methods and data collection

The research methods used in this research were qualitative interviews and the study of internal documents. The process of this research went as follows: literature study, set up interview questions, study website, study internal documents, adapt interview questions, conduct interviews, transcribe interviews, analyse. This process will be explained in more detail in this section.

The interview questions were drawn up based on the literature study. To obtain in-depth knowledge semi-structured interviews were used (Van Thiel, 2014). This leaves space to spontaneously explore topics that were relevant for the interviewee. A standard interview guide was made, see Appendix 2. Prior to each interview, the organisation's website and internal documents were studied in detail. The internal documents that were studied are mobility policies, results of mobility research, CSR fact sheets, and mobility background information of the organisation. These documents are shared confidentially with the researcher. Based on these documents, the researcher sometimes adjusted the interview questions to make them more specific. An example of this is as follows, the question "*Does your organisation has a certain sustainability objective or ambition?"* has been rewritten in the interview of organisation A to *"Your organisation has as an objective 'every water drop sustainable'. Can you explain what this means?"*. In this way, no valuable time was lost by lingering too long on general questions.

After adapting the interview, it was time to conduct the interviews. All interviews were held online because of the Covid-19 pandemic. They were also held in Dutch because this is the first language of both the interviewees and the researcher. Member checks were performed during the interviews. This means that the researcher often summarised the information given to check for accuracy and resonance with their experiences. All interviews were recorded, so that no information would be lost, and the interviews could be transcribed afterwards.

### 3.5 Data analysis

Van Thiel (2014) describes the first step after the data have been collected is to start ordering them. Therefore, a systematic manner is used. The programme Atlas.ti is used as a filing system, to sort all the interview transcripts and internal documents. Atlas.ti offered the perfect opportunity for the researcher to store all information in a systemic manner, add research notes, and assign codes. This increases the level of structure and comprehensibility. Using a computer programme to analyse the data is beneficial for the research because it is easier to add new or additional information during the research and incremental data collection is an important aspect of qualitative research (Van Thiel, 2014). In addition, using Atlas.ti allowed the researcher to share the transcripts and codes with the supervisor of Syndesmo. Therefore, the retrieved information was easily shared and gave Syndesmo a good insight into the research procedure.

First, the researcher had a quick scan of the interview transcripts, therefore, the researcher knew what the common thread of each interview was and what the recurring themes were. This can be seen as the First Cycle coding (Miles, Huberman & Saldana, 2014). Due to the deductive nature of the research, the researcher added all codes from the conceptual model to Atlas.ti. Adding the codes gives structure to the research, in this way the data was categorised and subdivided so that it could be compared at a later stage (Van Thiel, 2014). In order to create an overview of all the indicators and which code belonged to which code group, the researcher added colour shades to each code. This gave the researcher a clear overview of the codes and to which code group they belonged. The yellow and orange colours served for sub-question 1. The green and turquoise colours served for sub-question 2, and the pink/red/purple colours served for sub-question 3. An overview of all codes and colours is given in Table 4.

| Code SQ1 | Colour | Code SQ2 | Colour | Code SQ3 | Colour |
|---|---|---|---|---|---|
| Perceptions and attitudes | | Forms of mobility | | Close to highway | |
| Maximizing Utility | | Flexible work shifts | | Close to railway | |
| Regulations | | Financial support | | Vibrancy | |
| | | Vitality | | Academic innovative activities | |
| | | Employee satisfaction | | Facilities | |
| | | Employee flexibility | | Energy neutral building | |
| | | Employee productivity | | | |
| | | Equal possibilities | | | |

Table 4: Deductive codes and colours

During the quick scan that the researcher carried out beforehand, it already became clear there were a few recurring themes that had to be considered. The codes *Attractive employer*, *Costs of the building*, and *Covid-19 pandemic* were added to the code list. The code Attractive employer fitted the individualistic paradigm and therefore got the colour code orange. The code Cost of the building fitted the indicator Building as this is included in the (re)locating process, and therefore got the colour red. The Covid-19 pandemic was an overarching theme and did not fit any of the existing codes, therefore it got the colour grey. An overview of the codes that were added via induction is given in Table 5. Adding colour codes to all the indicators, gave the researcher a good overview of which indicators belonged to which code group performing the analysis.

| **Code SQ1** | **Colour** | **Code SQ3** | **Colour** | **Code (other)** | **Colour** |
|---|---|---|---|---|---|
| Attractive employer | | Costs of the building | | Covid-19 | |

Table 5: Inductive codes and colours

These codes, based on the conceptual model, are more specific than the general image that occurred during the First Cycle coding. The adding of the specific codes can be seen as the Second Cycle coding (Miles, Huberman & Saldana, 2014). It often happened that a piece of text was assigned two codes or more. This already showed that overlap often occurred. The researcher analysed all interviews in chronological order. After having analysed all the interviews, the codes that were added to the first two interviews were overlooked again. This was because the researcher had gained skill after analysing all the interviews and noticed that some codes might have been assigned differently than they would have after analysing all the interviews, therefore, the codes that had been added to these interviews were critically overlooked again and sometimes adjusted. An overview of the coding results is given in Appendix 3. After labelling the codes, the internal documents were analysed again. This was done because in the interviews mainly opinions and perceptions came forward, in the internal documents there were more facts, for example, the amount of a kilometre allowance. These were also necessary to answer the research question and were easier to compare with each other. After listing all knowledge given in the internal documents and the codes, they were compared to each other. The researcher concentrated on certain patterns that were found in the codes. This process ultimately helped to answer the research question.

### 3.6 Validity and reliability of the research

The validity and reliability of the research were ensured in different ways. The internal validity was ensured by using multiple data sources, such as interviews and internal documents. Also, the used data collection methods were based on existing literature. The internal validity was also enhanced by using Atlas.ti as an analytical technique. This technique gave the possibility to show a pattern, which is specially bought to the surface in second cycle coding (Van Thiel, 2014). Another aspect that ensured the internal validity was that all the interviews were constructed in the same manner (Van Thiel, 2014), which was done in this research by using the interview guide. The member checks also contributed to the internal validity, because when the same question will be asked again, the same answer will be given (Walters, 2001). Since this thesis is constructed from a Critical Theory point of view, the aim is not to find generalisable information, therefore reaching external validity is not the central goal of this research. But ensuring some sort of external validity strengthened the research. This was done by a strong theoretical foundation of the research, so theoretical generalisation was reached. Theoretical concepts and insights can therefore be expected to be applied to other contexts as well.

The internal reliability of the research was ensured by a detailed, transparent, and consistent description of the data collection process, so that the research could be replicated based on the information given. This is reflected in the use of a computer programme and the use of an interview guide. The used data collection methods were based on existing literature, which means a tried-and-tested method was performed. Replication of concepts of an existing study contributed to the reliability of the research (Van Thiel, 2014). However, a large amount of qualitative data and the important role of the researcher generating this data, makes it hard to fully replicate the research in a detailed way. This does not improve the external reliability. In addition, the results were gathered during the Covid-19 pandemic, which has major influences on our travel behaviour. Therefore, the interviewees may have given different answers than if they had not been interviewed during a pandemic.

## 4. Analysis and results

The analysis is structured according to the conceptual framework as set out before. This chapter will look at how the interviews and the internal documents correlate with the indicators mentioned earlier. The beginning of the analysis had a set of deductive codes, derived from theory. Later, a few indicators were added inductively to the coding list. These indicators weren't included at first but turned out relevant while analysing the interviews. These concepts will be explained in each subparagraph. Every paragraph will end with a conclusion, which will make it easier to answer the research question in the next chapter.

### 4.1 Two discourses of travel behaviour

In this section, the first sub-question will be explored: '*To what extent and how are managers concerned about commuting sustainably with low CO2 emissions?*'. This section aims to sketch an impression of what the management of an organisation takes into consideration in their mobility plan and what drives these considerations. The section will start with a general image of the discourses of managers underlying both the individualistic and systemic discourse. As described before there are two dominant discourses in the travel behaviour literature: the individualistic discourse and the systemic discourse. The meanings of both discourses will be briefly repeated. The individualistic discourse focuses on the perceptions and attitudes of employees and maximizing utility. Maximizing utility is interpreted as people favouring the option of mobility that suits them the best, this is often the easiest or cheapest option. The codes that were added to the individualistic discourse are (a) *perceptions and attitudes of employees* and (b) *maximizing utility*. While executing the analysis another indicator turned out to be important; being an attractive employer. Managers want to act sustainably but they often think this will be at the expense of their attractiveness as an employer. These ideas influence the actions of managers, which advocate the thoughts of the individual. The code (c) *attractive employer* is inductively added to the code list. Furthermore, the systemic discourse focuses on the system in the society to map specific concerns. These systems are in this research interpreted as regulations. The code that is used to explore the systemic discourse is (d) *regulations*.

#### *4.1.1 Discourses of managers*

In this section, a general picture is given of the discourses that managers have towards sustainable commuting. There were several recurring aspects during the interviews. The discourses of managers refer to the norms, values, and beliefs of managers about sustainable commuting. The interviews show that commuting often represents only a small proportion of the organisation's entire emissions. While all the interviewed organisations feature a mobility plan that is aimed at reducing $CO_2$ emissions or even becoming completely $CO_2$ neutral. They also describe that this is different now than it was a few years ago. Managers state that they would like to stand for an organisation as sustainable as possible. They now want to tackle all facets of becoming more sustainable, not just those where there is the most to be gained. This describes a change in perception, which comes forward in the following quotation:

*"You can notice that people now find it easier or perhaps more important to say, 'I came by train', precisely because sustainability is also becoming increasingly important for our customers." (Organisation B, 2021).*

This change in perception could be fuelled by the current Covid-19 pandemic. During the interview with organisation B, the culture change in awareness was addressed. Before it was a natural thing to do to drive two hours for a one-hour meeting. The interviewee from organisation E also addressed this; there is a current change in culture when it comes to awareness. Employees are more aware of their travel behaviour. Nowadays people think more consciously about travelling, they are more aware of how necessary travelling is and it is not a habit anymore.

Another dominant perception that came forward during the interviews is the fact of being a good example as an organisation. Managers don't want to advise or ask their customers a certain action and do not propagate this by themselves. Mobility is, therefore, a good facet to tackle because it affects the whole organisation. When asked why they would like to set out a good example, reasons as 'there is only one planet' and 'we also want to be able to enjoy nature in the future' come forward. It can therefore be stated that managers are involved in reducing $CO_2$ emissions from commuting.

#### *4.1.2 Individualistic paradigm*

The code (a) perceptions and attitudes of employees refers to the norms, values, and beliefs of employees about sustainable commuting. Managers then act from these perceptions and attitudes of their employees. The interviews show that managers often include the opinions of their employees in their policies. This is expressed in various ways. The interviewee from organisation B stated that they make mobility choices based on various mobility profiles of their employees. These profiles map out their employees' travel behaviour and choices are made on that basis. Employees who spend more time behind their laptops, for example, are encouraged more to work at home than employees who need to be on location a lot. The interviewee from organisation D indicated that they took the perceptions and attitudes of their employees into account in their new mobility policy by conducting an employee survey beforehand. This resulted in the needs of their employees being anchored in their current policy. An example where managers took the opinion of their employees into account in their policy was found in interview C. Organisation C took the number of parking spaces into account when they moved. If employees come by car, they want to be able to park. Therefore, the management ensured that there were enough parking spaces available, while their aim is that employees travel less by car and use public transport more. During the interview with organisation A, it emerged that when introducing a new measure, it is important to enter a dialogue with an employee. This indicates an individual approach; each employee is spoken to in order to counter possible resistance.

The second indicator of the individualist paradigm is (b) maximizing utility. Maximizing utility was originally interpreted as employees choosing for a cheap or easy option of mobility. Managers state that employees often use their lease car above public transport because it is easy and offers comfort and people are used to the routine of using their own car. This is illustrated in the following quotation:

*"While using your car for a short drive you quickly experience the ease and comfort, and you do not immediately feel the negative effect of the fact that gas comes out of your exhaust." (Organisation F, 2021).*

During the interviews, a lease car is often cited as a symbol of status, because it gives employees this ease and comfort. Also, the use of a leased car is often popular for business appointments. A shared car is seen as a 'hassle' by employees because they have to make a reservation for it, using their own car is often seen as an easier option then.

Referring to a lease car as a symbol of status suits the last indicator of the individualist paradigm: (c) attractive employer. This indicator was constructed inductively because it was often an overarching topic during the interviews. Employees think of a lease car as an acquired right, as said by the interviewee from organisation A. A lease car plays an important role when it comes to presenting themselves as an attractive employer. Managers feel like they put their attractiveness as an employer at risk when a lease car is not a standard anymore. This fits with indicator A that was mentioned earlier; managers act from the perceptions and attitudes of employees. Even though managers want to be more sustainable, they often continue to offer leased cars because they are afraid of losing their attractiveness. The interviews show that many managers wrestle with this, seeking a balance between being an attractive employer and not offering a lease car as standard. This is often contradictory to the sustainable ambitions of the organisation. A lease car is generally part of the terms of employment. Managers can't withdraw the lease cars from the current employees and for prospective employees it is an relevant and important working condition. Thus, on the one hand, managers would like to no longer offer a lease car as standard, but on the other hand, they do not want to jeopardize their image as an employer. This is illustrated in the following citation:

*"I don't believe that we will switch to withdrawing lease cars very quickly, because we want to remain an attractive employer. If other organisations still offer lease cars and the current employees still have one, we will not say 'okay from now on no more lease cars,' because we also want to bind new talents to us." (Organisation E, 2021).*

#### 4.1.3 Systemic paradigm

The code (d) regulations refers to principles managers use to guide their employees towards a certain direction. The first question that occurred is do managers even use regulations? Looking at the interviews the answer is a resounding yes. The interviews show that the stimulus that is most used to stimulate certain behaviour are regulations, especially incentives. There were many regulations mentioned by the organisations during the interviews. The different regulations can be separated into a few categories: kilometre allowance, electric cars, public transport, bikes, and work from home. Table 6 demonstrates an overview of the most important regulations of each organisation defined by the different categories. As seen in the table most of the regulations are incentives. The last row shows some extra regulations that did not fit the set categories but are relevant to mention for this research. Some spots in the table are empty, this means there is no information known about this specific category for that organisation. It could be interpreted that this category is less relevant for this organisation since it is not mentioned in the interviews or the internal documents.

| | Org. A | Org. B | Org. C | Org. D | Org. E | Org. F |
|---|---|---|---|---|---|---|
| **Kilometre allowance** | - €0,12 kilometre allowance for fossil cars combined with a higher allowance for public transport, bikes, and e-cars | | - Reimbursement of actual km's based on €0,19/km | - €0,10 kilometre allowance when travelling by car | | - Flexible mobility allowance (lower reimbursement for travelling by car) |
| **Electric cars** | - All new employees get an electric lease car<br>- Electric pool cars | - All new cars are electric cars, fully electric in 5 years | - Restrictive and fully electric car lease | - Subsidy of €1000 when buying an electric car | - New employees can choose an electric car or a mobility card (including shared mobility) | - An electric shared car available for business trips |
| **Public transport** | - Public transport card can be used privately | - In pilot phase of an NS business card as a condition of employment<br>- Stimulate using public transport by moving to a location nearby a train station | - Support different and changing modes of transport per employee<br>- Option for public transport annual pass with unlimited private use | - 100% allowance when travelling by public transport | - Support public transport because the goal is to increase lease cars to reach circular business operations<br>- Public transport is easy and affordable for everyone | - Employees are allowed to visit national meetings only by public transport |
| **Bikes** | - Special discounts for bikes | | - €1500 for a bike every 5 years | - €0,15 bike allowance per day<br>- 10% Subsidy of a bike purchase<br>- Interest-free loan for bike, e-bike or speed pedelec | - Introducing employees to electric bikes by try-out groups<br>- Bike support purchase regulation | - Extra budget for electric bikes for employees who would like to travel by bike<br>- Charging points for electric bikes |
| **Working from home** | - Facilitate working from home by good facilities and stimulate video calls | - Support video calls<br>- Ergonomics at the home workplace | - Support a home workplace and facilitate a reservation system when coming to the office | - €2 working from home allowance per day | - Offers a lot of flexibility as an employer | - Home work allowance for coffee and electricity (symbolic monthly amount) |
| **Extra** | - Electric pool cars between different locations<br>- Better communication about sustainable mobility | - Working with a pilot when people renounce a lease car | - One travel management platform supporting the planning, booking, and paying for all modes of transport | | | - No reimbursement for private car use for business trips<br>- Communication about flexible work shifts |

Table 6: An overview of regulations organisations use to reduce $CO_2$ emissions

The interviewees sketched several motives to use regulations. The interviewee from organisation A mentioned using mobility regulations because these regulations affect everyone in their organisation. It is a method to make all the employees aware of becoming more sustainable in their travel behaviour, which could eventually lead to more sustainable behaviour in general. This idea suits the discourses of managers that are already mentioned before. The interviewee from organisation B mentioned using regulations to reach their goal of CO2 neutral business operations and mobility. The interviewee acknowledged that regulations must be used because not all their employees are sustainable in nature. This is illustrated by the following quotation:

*"Absolutely, (…) because in nature, I don't know if people from <organisation's name> like it when I say this, but we're not the greenest people in ourselves. (…)  I don't think everyone is super sustainable, well, take it into account throughout daily life. Not that everyone is against it, but it is just not a priority in your personal life. But now it had to be due to regulations, everyone is doing well. I'm sure it <regulations> has been important." (Organisation B, 2021).*

Organisations C and E also based their regulations on their goal of CO2 neutral business operations. Organisation C has an ambition of fully circular business operations in 2025 and Organisation E has set this goal for 2030. A goal of circular business operations affects all the facets of an organisation, that's why these organisations implemented mobility regulations. The motive of organisations D and F to incorporate regulations largely matched since it was mainly "being a good example as an organisation". As already stated before; managers don't want to advise or ask their clients a certain action and do not propagate this themselves. That's why they implemented regulations, to emanate a good example.

#### *4.1.4 CO2 Emissions concerns*

The first sub-question was: '*to what extent and how are managers concerned about commuting sustainably with low CO2 emissions?'*. As illustrated managers dispose of a range of discourses of sustainability becoming more and more important in their business operations. They want to be a good example for their employees and clients. The underlying discourses of managers are the reason why they are involved in reducing CO2 emissions. These discourses apply to all interviewed managers. A picture then emerges that the discourses of managers focus more on an individualistic or systematic approach. The results show an individualistic picture; managers take each employee into account in their business operations and approach them individually.

On top of this, there is still a mindset that employees go for the form of mobility that's the easiest and cheapest for them, in which sustainability considerations are less important. In addition, a lease car still often functions as a symbol of status, with which managers want to distinguish themselves as an attractive employer.

However, the results also show a systemic point of view of managers. This is reflected in the high degree of regulations in terms of mobility. These regulations are aimed at encouraging more sustainable options of mobility for commuting. This is reflected, for example, in the higher kilometre allowance for an electric car than a fossil fuel car, and the even higher allowance for the use of public transport. During the interviews, it was not clear whether managers prefer one approach or the other; the discourses are often intertwined. Certain perceptions and attitudes of the individualistic paradigm ultimately led to regulations being implemented. This manifests itself, for example, in the issuing of electric lease cars, because a lease car is seen as a status symbol by the individual. This shows a blurred line between the individualistic and systemic discourse, and it cannot be stated that there is one more dominant than the other; there is an interplay between the two. The constant recurring individualistic approaches during the interviews and the large range of regulations show a certain level of concerns and involvement of managers. Thus, it can be concluded that the management of organisations takes sustainable commuting in their mobility plan as a serious topic.

## 4.2 Actions to reduce CO2 emissions

This section will explore the second sub-question: '*Do managers take any action to reduce the CO2 emissions of commuting?*'. The section is based on the three criteria of Dyllick and Hockerts (2002). The relevant indicators are eco-efficiency, eco-effectiveness, socio-efficiency, and socio-effectiveness. Eco-efficiency is the pursuit of making the same goods and services cheaper and more environmentally friendly. The codes that were added to eco-efficiency are (a) *forms of mobility*, (b) *flexible work shifts*, and (c) *financial support*. Eco-effectiveness is about the overall environmental impact and interpreted in this research as reducing CO2 emissions. Therefore, the code that was added to eco-effectiveness is (a) *reducing CO2 emissions*. Socio-efficiency stands for minimizing negative social impacts and maximizing positive social impacts in relation to the value added. The codes that were added to socio-efficiency are (d) *vitality*, (e) *employee satisfaction*, (f) *employee flexibility*, and (g) *employee productivity*. Lastly, socio-effectiveness focuses on the general social impacts of the management and how the decisions made affect each person in the organisation. The code that was used to explore socio-effectiveness is (h) *equal possibilities*.

### *4.2.1 Eco-efficiency*

The code (a) forms of mobility refers to all the different forms of mobility the management of an organisation promotes. The goal of this indicator was to see if managers support sustainable forms of mobility that emit less CO2. A clear answer can be found here, all the interviewed organisations had a mobility plan that focussed on modes of transport with less CO2 emissions. The interviewed organisations with a lease car policy changed their policy from a fossil fuel car to an electric model. In addition, almost all managers were investing heavily in travelling by public transport. This is particularly done by providing all employees with an NS-business card, which could sometimes also be used privately. There was only one organisation (F) that was focussing less on promoting public transport for commuting since their workplace location wasn't close to a train station. The interviewee from organisation B mentioned that the combination of introducing electric cars and promoting public transport was the reason their CO2 emissions have been reduced. The last form of mobility that managers promote is the usage of bikes. Many of the interviewed organisations introduced attractive biking schemes. This includes for example a budget for buying a bike, discounts at bicycle stores, and a higher kilometre allowance for travelling by bike.

The code (b) flexible work shifts refers to the facet whether organisations operate with flexible work shifts. Based on the literature it seemed a logical aspect to include in the interview questions. But during the interviews, it soon became clear that this question was an obvious question. When asking interviewees if they work flexible work shifts, they all answered with a clear yes. It became obvious that it is quite normal that employees manage their working times nowadays. The interviewees from organisations B and C state that it is more important that employees finish their work tasks instead of working a certain set of hours. The Covid-19 pandemic also has an important influence on this. During the pandemic, it became apparent that working from home is much more feasible than first expected. Being able to work from home has a positive effect on arranging work hours by employees themselves. It is easier now to start at home and travel to the office after rush hours or consider if it is even necessary to go to the office at all. The interviewee of organisation D called this phenomena hybrid working, this is further illustrated by the following quotation:

*"… it is much more called hybrid work, which means that you have to agree with your colleagues: okay for which situations will we come to the office and meet each other, and for*

*which situations won't we. How long will you stay in the office, or will you leave immediately after the meetings?". (Organisation D, 2021).*

The last code of eco-efficiency is (c) financial support. Financial support refers to all the financial arrangements organisations offer their employees. The financial support that is deployed by managers can be seen as a regulation which is part of the systematic discourse, which was mentioned earlier. As seen before, all organisations used a financial component to stimulate sustainable mobility. This can be seen in the budget for buying a bike, or the different kilometre allowance between the different forms of mobility, with the most sustainable option as highest compensated. Interviewees state that financial measures are needed because not all employees are internally motivated to act sustainable, sometimes an external boost such as financial support is needed. This is further illustrated by the following quotation:

*"Yes, you can see a financial incentive is, of course, interesting because it is really not the case that everyone thinks 'oh nice I want to be more sustainable so that's why I drive an electric car', it is because it is imposed that way." (Organisation B, 2021).*

A positive financial arrangement does also influence employee satisfaction about a certain action. For example, the interviewee from organisation B mentioned that there is a lot of employee satisfaction about the introduction of electric cars, which is probably due to the financial benefit. This is shown the next quotation:

*"But there is actually quite a lot of satisfaction about those <electric> cars. Of course, that also has to do with that, so far, it is financially quite favourable." (Organisation B, 2021).*

### *4.2.2 Eco-effectiveness*

The code to explore eco-effectiveness was (a) reducing $CO_2$ emissions. Reducing $CO_2$ emissions was a key element during the interviews. All interviewed organisations include the reduction of $CO_2$ emissions in their business operations. This is shown in the different goals and ambitions of the organisations. Organisation A wants to reduce 50% of their $CO_2$ emissions from travelling by 2025 compared to 2019. Organisation B has focused on $CO_2$-neutral operations and mobility in their objectives. Organisation B wants to reduce $CO_2$ emissions in the following facets: car usage, heating, public transport, air traveling, electricity, and paper and water usage. Organisation C has formulated the ambition to be $CO_2$ neutral in 2025, this concerns all mobility excluding air travel. Organisation D has the ambition to reduce CO2 emissions from employee mobility by 50% by 2030 compared to 2016. Organisation E wants to reduce CO2 emissions to become fully circular by 2030. Organisation F aims to have a CO2 neutral footprint by 2030. It can be said that these goals and ambitions of reducing CO2 emissions constitute the supporting base of the further actions managers take to become more sustainable.

### 4.2.3 Socio-efficiency

The first code of socio-efficiency is (d) vitality. Vitality refers to the extent to which managers take the well-being and physical health of their employees into consideration. During the interviews, it turned out that this was an important topic. Almost all interviewees brought up the topic of vitality without even being asked about it. This shows that it is a crucial aspect in the considerations of managers. The fact that managers take care of their employees can be seen in a few different aspects. For instance, caring about the well-being of employees, guidance for new employees, organising events, coaching, and focusing on the health of employees. Some examples of how this is put into practice are a buddy for new employees, organising bonding activities and workshops, and investing in working from home facilities. Regarding mobility, managers indicate that they often look together with the employee in question to see which form of mobility suits him or her. Personal preferences, travel distance, and also the family situation are taken into account. For example, the interviewee from organisation B indicated that, when awarding a lease car, the management considers whether the person in question has children so that they get a lease car in which a child seat fits properly.

Especially during the Covid-19 pandemic vitality seemed an important topic. Before the pandemic working from home was not always facilitated. But during the pandemic, lots of employees were forced to work from home because of the restrictions of the Dutch government. Managers had to respond quickly to this and there was a change in the perception of working from home. This change in perception is illustrated by the following two quotations:

*"Covid-19 has been something negative for a lot of people, but on the other hand also positive in my opinion. (…) We've always said you work in an office, if you work from home, you're not working. I think that's changing strongly (…) and I do notice that a lot has been improved during Covid-19. There is no longer the question of do you really fulfil your work at home." (Organisation A, 2021).*

*“We were quite… well old-fashioned may sound very negative but working from home was not very high on our agenda. It was essentially you must come to the office, that fits within our culture. Of course, we saw that we were all forced to stay at home because of Covid-19 and that despite that, we were able to keep our organisation on its feet. It went well, it was running, we had good results, so it was possible! It was forced, but it was possible!” (Organisation E, 2021).*

Since working from home became more adopted by organisations, the interviewees mentioned that being a good employer and taking care of the working from home possibilities became more important. They all invested in working from home facilities, for instance, good office supplies, a desk, an ergonomic chair, a computer screen, and ICT support. There are also a few organisations that work with a working-from-home budget, this means that every employee gets a budget to buy office supplies by themselves. For example, the employees of organisation C get every three years 750 euros to spend on office supplies to organise a high-quality home office. The interviewees mentioned that next to investing in working from home facilities, they also invested in extra online bonding activities and workshops. This shows that during the Covid-19 pandemic it became more important to managers to take care of the well-being of their employees. Furthermore, the increase in working from home can also have a positive effect on the reduction of CO2 emissions from mobility. Working from home results in fewer travel movements, which reduces CO2 emissions.

Even though working from home has been adopted by organisations quickly, it also has a downside in terms of vitality. All interviewees mentioned that after the pandemic employees will and have to continue working from home. But when working from home becomes more and more the norm, there is a challenge in keeping employees connected and the balance between work and the private life of employees. This challenge is illustrated in the following quotation:

*“I do think that what you get from working at home is the risk to mix your relaxations and exertion moments, so what used to be work-life balance. You see that these two are increasingly intertwined. How do you make sure that you stay healthy? I think that will be a challenge for many organisations (…). How do you keep in touch with colleagues, even if you work a lot from home?” (Organisation A, 2021).*

The next code to explore socio-efficiency is (e) employee satisfaction. Employee satisfaction was just as vitality a topic that was well represented during the interviews. The main issue interviewees mentioned is the split between employee satisfaction and sustainable business operations, there is often tension between these two. During the interviews, it became clear that there is a dichotomy between the organisations and how they experience employee (dis)satisfaction. Two organisations (C and D) indicated to experience little resistance from employees on sustainable changes in the organisation. One explanation for this is that the interviewees from these organisations indicated that their employees are often already sustainable by nature, so the transition to sustainability is often only encouraged. Other interviewed organisations (A, B, E and F) indicated that mobility is often a sensitive subject and that they see a clear field of tension. The resistance often arises because employees see their lease car as a symbol of status. Resistance arises when an employee no longer gets a lease car offered by default, or when the employee drives too few kilometres to get a lease car offered. The interviewee from organisation D also indicated to experience resistance when it comes to kilometre declaration. Flexible use of mobility is part of the new mobility plan; therefore, employees must declare their travelled kilometres themselves, which causes tension. In addition, interviewees mention that many employees consider sustainability to be important if they do not have to make any sacrifices by themselves. In several cases, the number of parking spaces also causes employee dissatisfaction. Most of the interviewed organisations have moved to a location nearby a train station, which often goes hand in hand with a lack of parking spaces. The resistance especially comes from employees who are not entitled to a parking ticket or who have to park their car further away at the park and ride. An example of the resistance can be seen in the following quotation:

*"That <the number of parking spaces> was a real issue and there was even a small riot about it because not everyone got a parking ticket. People who didn't get a parking ticket had to go to a park and ride somewhere nearby, and then they had to walk for another fifteen of ten minutes." (Organisation B, 2021).*

Another relevant aspect that was mentioned during the interviews is the difference in resistance by different generations. Some interviews (organisation A, B and E) revealed that more resistance was experienced by the older population of the organisation. The explanation given for this was that they view sustainability differently. The younger generation often considers sustainability more important and is also used to travelling by public transport from their student days, so they often find it easier to persevere. This discrepancy between the two generations is illustrated in the following quotation:

*"You notice this clash between the generations. The younger generation is really into sustainability and social involvement. The older generation sees it as kind of important, but 'I will do that in my free time, my work is my work, and I shouldn't mix that with sustainability and social involvement'." (Organisation B, 2021).*

The third code to cover socio-efficiency is (f) employee flexibility. The flexibility of employees is in this research interpreted as how flexible employees can be due to the management's business operations and whether this flexibility is conducive to sustainability. All the interviews show that managers make it easy to adapt to a sustainable form of mobility. They have adapted their mobility plan to a form where people can use public transport in addition to travelling by car. This means employees are more flexible in deciding which form of mobility they want to use each day. Therefore, investing in sustainability benefits employee flexibility. On top of this, employees became more flexible because of the facilities to work from home due to the Covid-19 pandemic. They can choose whether they want to go to the office or work from home and find a way that fits them personally. Because of this flexibility, employees do not have to travel anymore every day and, therefore, emit less $CO_2$. Lastly, the interviewees indicate again a difference between the younger and older generation when it comes to flexibility. To the younger generation flexibility is often more obvious than to the older generation. Young people use public transport more easily and the interviewees state that it is usually easier for them to declare kilometres or use an app to reserve a parking space. Younger people adapt easier to these transformations in an organisation. Accordingly, the younger generation is generally more flexible, and it is therefore less stressful for them to adapt to new forms of mobility or side actions that come along with this transformation.

The last code to explore socio-efficiency is (g) employee productivity. This refers to the fact that investments in sustainability could be the expense of the productivity of employees. Employee productivity was not a dominant topic during the interviews but some of the interviewees mentioned relevant statements about it. The interviewee from organisation A indicated that the use of electric cars does not improve the productivity of employees. This is because employees spend time recharging their cars (for longer stretches). On the other hand, there are also a few aspects that do increase employee productivity. For instance, when travelling by train employees can work during their travels. Interviewee C indicates that this is advantageous in terms of productivity compared to travelling by car. In addition, interviewee B mentions that because of the flexibility in working from home, employees can decide to start their working day at home and travel to the office after rush hours. Therefore, they spend less time travelling because the chance of getting stuck in traffic is smaller, which could lead to higher employee productivity. Lastly, the interviewee from organisation C states that working from home has a positive influence on employee productivity because people work more hours when they work at home. The reason why employees are more productive when working from home is illustrated in the following quotation:

*"So, they work more hours at home than at the office. Because it is not easily seen when people work really hard, so people feel more the urge to prove, to show that they are productive when working at home." (Organisation C, 2021).*

#### *4.2.4 Socio-effectiveness*

The code to explore socio-effectiveness is (h) equal possibilities. Equal possibilities have been interpreted in this research as equal opportunities and possibilities so that every employee can choose a more sustainable way of travelling. A couple of times this was mentioned during the interviews, but it was not a dominant topic. The regulation to provide every employee with an NS-business card regardless of the commuting distance can be seen as an equal possibility because every employee is able to travel by public transport. Therefore, every employee can decide whether they want to act sustainably or not. The interviewee from organisation A cited an example of an employee who lives far away but would like to travel by bike, which increased his travel time. Agreements were then made with the team manager so that this employee could always claim his return journey as working time. This made it more attractive to cycle, allowing this employee to make a sustainable choice.

The interviewees from organisations B and E also bought up the relevant topic of what would happen if new employees who are entitled to a lease car renounce it. Both these organisations are currently in a pilot phase to figure out what they can offer these employees in a fair way. A few years ago, this situation would have never occurred so both these organisations are in doubt about how to approach this phenomenon fairly. Interviewee B indicates that the current employees who renounced a lease car get an always-free public travel card and a small financial reimbursement. Even though the employee gets compensated, the interviewee cites that this is an unfair compensation compared to a lease car. Therefore, it can be concluded that there is no equality in possibilities between people who decide to renounce and those who accept a lease car. Because of this imbalance employees may be more inclined to choose an unsustainable option because it offers them more benefits. The unequal compensation is illustrated by the following quotation of interviewee B:

*“(...) the pilot of people who renounce a lease car. The arrangement that was made for this is not ideal. If you're not an idealist yourself, that's certainly not enough of an incentive to get you over the hump.” (Organisation B, 2021).*

### 4.2.5 The level of actions

The second sub-question was: ‘*Do managers take any action to reduce the CO2 emissions of commuting?*’. As illustrated in the results chapter, there is a large range of actions that managers perform to act more sustainably. It can be concluded that managers incorporate sustainability in their mobility plan to reduce CO2 emissions of commuting. The support of these actions falls under the ambitions to reduce CO2 emissions. These ambitions can be seen as the eco-effective actions of managers.

To reduce these CO2 emissions, various measures are used by managers, these means fall under eco-efficient actions. The actions that fall under the heading of eco-efficiency are mainly focused on reducing CO2 emissions or steering employees towards a certain direction. The main action to reduce CO2 emissions is investing in forms of mobility that are more sustainable, for example electric cars or public transport. In order to convince employees to opt for this sustainable mobility option, a financial incentive is mainly used.

Managers also take actions to maximise the positive social impact and minimise the negative social impact, with other words, actions that are considered socio-efficient. The actions that are considered socio-efficient are especially focused on the employees’ state of mind and how they are guided in the transition towards sustainability. The results show that some employees still experience problems coping with this transition and that investments in sustainability are sometimes at the expense of employee satisfaction, flexibility, or productivity. This leads to the result of vitality being an important aspect in organisations. An interaction could be observed between vitality and the employee satisfaction, flexibility, and productivity. It could be beneficial for the employee satisfaction, flexibility, and productivity, if managers take the well-being of their employees seriously and invest in vitality. In addition, a difference between the younger and older generations in organisations should be considered regarding the social impact. It can be concluded that the younger generation often has less difficulty with sustainable transformations – even welcomes it - and is more flexible. On the other hand, the older generation often has more difficulty with changes and may show resistance.

Lastly, the indicator of socio-effectiveness indicated that managers do want to give all the employees equal sustainable possibilities, but it is sometimes hard for them to put this into practice. It can be concluded that managers do take actions to reduce $CO_2$ emissions of commuting, and next to these actions also try to involve employees in this process and keep them satisfied.

## 4.3 Workplace location

The last section of this chapter will explore the third sub-question: '*How important is sustainable commuting for an organisation in determining a new workplace location?*' As discussed before there are three dominant indicators when determining a new workplace location: the accessibility, the direct environment, and the building. Accessibility is linked to the codes (a) *close to highway* and (b) *close to railway network*. The codes that were added to the direct environment are (c) *vibrancy* and (d) *academic innovative activities*. Lastly, the codes that were used to explore the role of the building are (e) *facilities* and (f) *energy neutral building*. While executing the analysis another indicator turned out to be important in terms of the building, the code (g) *costs of the building* was added via induction.

### *4.3.1 Accessibility*

The codes to explore accessibility are (a) close to highway and (b) close to railway network. These codes will be discussed together in this section as they are related. In this research, it is assumed that a location close to a train station is automatically not directly close to a highway and vice versa. This interpretation also appeared to correlate with the interviews. If the accessibility to the highway plays an important role in an organisation, it can be considered that there is still a significant part of the employees who travel by car. Travelling by car is because of the $CO_2$ emissions a less sustainable option compared to travelling by public transport. Four (B, C, D, and E) of the six interviewed organisations had moved their office(s) to a location close to a train station or were planning to do so soon. Therefore, it can be concluded that the accessibility to the highway does play a less important role in determining a new location. The interviewee from organisation E states that it used to be very important to house near a highway, it was easy for employees and clients because they all travelled by car and big logo's next to the highway provided brand awareness. However, the interviewee mentions that nowadays it is significantly less important.

Organisations A and F did not move to a location close to a train station and are also not planning to do so soon. For organisation F there is no possibility to move their office since they are a governmental agency and are located in a monumental building of the government. The interviewee from organisation A mentions that they had moved their office recently from a location at an industrial area to a location on the outskirts of the city, which was still close to a highway but also had a decent bus connection, so there is a possibility to travel by public transport. The interviewee states that moving to a location close to a train station was still one step too far. The reason why this is one step too far is illustrated in the following quotation:

*"Because that <a location nearby a train station> is a location where the approach would be that we would only travel by public transport, not by car. I think that's still five to ten years too soon for <name organisation> to take that step, at least five years. That's why we've opted for an intermediate form, where we have decreased our office square metres and where we can also scale down if we want to, depending on the use of the office." (Organisation A, 2021).*

The other four interviewed organisations - B, C, D and E – decided to move to a location close to a railway network. All interviewees of these organisations state that mobility was one of the main motives to move to a location nearby a train station. Employees are often used to travelling by car, to stimulate travelling by public transport a change is mindset is needed. Moving to a location nearby a train station contributes to this change and has a positive effect on the sustainability ambitions of an organisation. Another main reason why organisations move to a location nearby a train station is again being an attractive employer. The interviewee from organisation B even stated that the biggest motivation to move to a location nearby a train station is the labour market, since mobility is considered important by prospective employees. Therefore, it can be included that there is a current trend in moving to a location nearby a train station and the main reasons for this are sustainable business operations and attractiveness as an employer.

### 4.3.2 Direct environment

The first code to explore the indicator direct environment is (c) vibrancy. During the interviews, vibrancy turned out to be a dominant aspect. Industrial areas are described as 'boring' and 'desolate'. Central locations close to a train station are described as 'vibrant' and 'lively' by all the interviewees. Managers do prefer an environment that is trendy, which enables the possibility to go for a walk during the lunch break. The interviews show that this vibrant area is inherently linked to a location nearby a train station, which has a positive effect on the use of public transport. Therefore, housing in a vibrant area contributes to the transition towards sustainable business operations. Particularly fascinating is the recurring image of being an attractive employer. Managers state that a vibrant environment is an important employment condition, and they want to distinguish themselves in this way to attract new (young) colleagues. Therefore, housing in a vibrant area plays a dominant role in the sustainability transition and the attractiveness of an employer. This is illustrated in the following quotation:

*"We believe that you'd much rather go to an office where you're in a lively environment, and a trendy café in the building, or go to the café on the corner to have a drink after work, than that you're in a - I'm saying this very irreverently - dilapidated industrial estate on a dead-end road. And I also believe that this contributes to your image and the attraction you have for new talent. I believe that they would much rather be in an environment that, by definition, is easily accessible by public transport and that is a vibrant environment than want to work in a small industrial estate." (Organisation E, 2021).*

The code (d) academic innovative activities was less prominently featured during the interviews. From the literature on it was expected that an environment with academic innovative activities would contribute to the sustainability transition since organisations take advantage of innovations and innovations are needed to become more sustainable. However, most of the interviewees had little knowledge of how important neighbouring organisations were in the housing process. This shows that it probably barely played a role in the process of determining a new location. Only the interviewee from organisation E explained that they took the neighbouring organisations into account when deciding on a new location. But the reason behind this was to not house their office close to competitors, because it would not benefit the image of the organisation. This has little to do with taking advantage of an innovative environment, so it can be concluded that academic innovative activities are considered less important in determining a new workplace location.

### 4.3.3 Building

The first code to analyse the role of the building in determining a new workplace location is (e) facilities. As explained before, the facilities that are considered important are a reflection of how important sustainability is considered to be. When exploring the importance of the parking spaces during the interviews all interviewees admitted that this is a 'sore point'. For organisation A, which did not move to a location nearby a train station, this was the main reason to settle on the outskirts of the city. This is illustrated in the following quotation:

*"Yes, that <number of parking spaces> is important. That's also why I said that one location at the central station was not chosen, because there were simply not enough parking spaces. (...) We are trying to reduce car use, though. We will also see that the car fleet will eventually shrink. Now, that is not yet the reality. You will need the next few years to make that transition, and you will therefore also need parking spaces." (Organisation A, 2021).*

A further fascinating fact is that organisations who moved to a location nearby a train station admit that the number of parking spots are still important. Offices located next to a train station often offer fewer parking spots. Solutions that interviewees mentioned were flexible parking spots, for instance a park and ride in the neighbourhood. This shows that even though using public transport is highly stimulated by the interviewed organisations, the number of parking spaces is still considered valuable. Which could mean that still a lot of employees travel by car.

The next facility which indicates the importance of sustainability is the number of charging stations for electric cars. If charging stations are highly valuated, it could mean that the employees travel a lot by electric cars. As described earlier, all organisations (except F) are working towards an electric fleet and new employees do not get offered non-electric lease cars. With this goal in mind, it would be expected that the number of charging stations would count as an important aspect of a building. But the interviews prove otherwise, despite the stimulation of electric cars, relatively the number of charging stations at a new building plays a less important role. Managers primarily look at whether there are charging stations present, but not at the quantity and the possibility of expanding them.

Lastly, the facilities regarding bikes were mentioned during a few interviews. The interviewee from organisation D mentions that in the moving process the biking opportunities were highly considered, especially the generous provision of charging facilities for electric bikes. Managers try to stimulate the use of bikes by offering good facilities. The facilities managers therefore offer, can be seen in the following quotation:

*"Our new locations are much more equipped with good shower facilities, good changing rooms, and good lockers so that you really have no excuse to not come by bike anymore." (Organisation E, 2021).*

The next indicator to explore the role of the building is (f) energy neutral building. The interviews show that the energy label of the building is an important aspect in determining a new workplace location. Organisations A, B, D, and E state that they at least want a green energy label for their new office. If the new building does not yet meet this energy label, they are prepared to make adjustments themselves, such as investing in solar panels or better insulation. Organisation C even goes one step further in this process by featuring a completely circular building. The motive behind the circular building is illustrated in the following quotation:

*"Sustainability was included in every aspect of the building to show that you can build such a building, such a sustainable building, for no more money than another newly built office building, if you include it from the beginning in every step. (...) So, you really show that you can have such a sustainable building for the same amount of money." (Organisation C, 2021).*

Besides the importance of a green energy label, sustainable options are also considered in the interior. The interviewees from organisations B, D and F indicate that almost all their interior is reused or refurbished. This even extends to the use of recycled coffee cups. This shows that organisations that highly value sustainability in their mobility plan, also involve sustainability in other facets of their business operations.

The last indicator that was included via induction in this research is (g) costs of the building. During the literature study, the costs of the building were not a dominant aspect in the process of determining a new workplace location. However, the interviewees from organisations A, B, and C mentioned the costs of a building as a decisive factor. The interviewee from organisation A indicates that they moved to a smaller and therefore cheaper location to be able to finance the home-working allowance. The interviewee from organisation B mentions the combination of cost and a location nearby a train station as the reason for choosing the current location. Also, for organisation C was a decent square metre price, next to a train station, a prominent factor in the selection procedure. They operate in the finance sector and did not want to pay more than an average building at the Zuidas in Amsterdam, a big part of the financial sector is located there. These examples show that the costs of a building weigh heavily on the final decision making for these organisations. The other organisations did not mention the costs of a building in the selection procedure for a new workplace location. Organisation F can be left out of consideration here, as they are not looking for a new location. For organisations D and E, it can be concluded that the costs of a building are not the most important factor in the process as they did not mention it during the interview.

### 4.3.4 Key factors of workplace location

The third sub-question was: '*How important is sustainable commuting for an organisation in determining a new workplace location?*'. The literature showed that there were three main factors that managers consider when determining a new workplace location. These three factors are the accessibility, the direct environment, and the building. The accessibility played a major role, this can be seen in the trend of moving the offices from an industrial area to a location close to a train station. This moving process has a positive effect on lowering the CO2 emissions since it is often more beneficial for employees to travel by public transport. In terms of reducing CO2 emissions from commuting, accessibility appears to be dominant compared to the direct environment and the building. The combination of moving to a location nearby a train station and stimulating public transport led to a reduction in CO2 emissions for most of the organisations. Moving to a location nearby a train station does have a positive effect on the CO2 emissions and also turned out to be an important working condition. Which suits the next indicator, the direct environment. In terms of being an attractive employer, the environment appears to be dominant. A building in a lively environment is an important employment condition, which also attracts new (young) employees. For some organisations, a vibrant environment was a more important deciding factor for relocating than accessibility.

Lastly, different facilities that a building has to offer are considered during the relocation process. In which it is striking that the number of parking spaces a building has to offer still plays a prominent role. This could mean that travelling by car is still a common form of mobility, even for the organisations that moved to a location nearby a train station. The organisations that focussed on a sustainable mobility plan also took the sustainability of the building into account. They focussed on a green energy label, the circularity, and reused and refurbished interior. It can be concluded that organisations that highly value sustainability in their mobility plan, pass this on to other facets of their business operations, such as the building. Although, an important aspect that must always be considered is the cost of a building. Even though all organisations want to operate sustainably, the costs are always a crucial aspect. However, this does not necessarily mean that sustainable actions suffer from this, the results show that a fully circular building does not have to be much more expensive.

## 5. Conclusion and discussion

The last chapter of this research will focus on summarising and connecting the results and the theoretical framework. This will be done by first summarising the main findings of this study. Next, the main findings will be linked to the previously mentioned literature and there will be a critical reflection on the findings. This is followed by a section where the findings of this research are placed in a broader light. Next, this chapter will provide recommendations for follow-up research and recommendations for Syndesmo. The chapter will end with a section on the limitations of the research.

### 5.1 Main findings

The main research question concerned in this study was formulated as follows: *'To what extent does the management of an organisation consider it necessary that commuting takes place in a sustainable way and how does the management act upon this?*'. The results show two discourses: the individualistic discourse and the systemic discourse. There is a blurred line between the two discourses, and it cannot be stated that there is one more dominant than the other. The discourses show that managers are in a certain way concerned about the CO2 emissions of commuting. These concerns form the basis for managers' actions towards commuting. As illustrated in the results chapter, there is a large range of actions that managers perform to act more sustainably. Thus, the discourses of wanting to act sustainably are put in practice by actions. It can be concluded that managers, in addition to target measures (effectiveness), also carry out actions where they consider the costs and benefits (efficiency). This results in actions such as wanting to reduce CO2 emissions (eco-effectiveness) and actions that aim to reduce CO2 emissions but where a trade-off is made (eco-efficiency), for example when introducing incentives or financial compensation. In addition, the general social impact is also included in the policy (socio-effectiveness), to achieve a positive social impact, trade-offs are also made (socio-efficiency). This is expressed in considerations of employee satisfaction, flexibility, or productivity. These results show that the motives of actions are often an extension of each other, and they all have a prominent role in driving managers towards sustainable business operations. This demonstrates that people, planet, and profit are considered important in becoming truly sustainable as an organisation.

The last factor that is studied in this research is the (re)locating process of the workplace location. The results present that (re)locating the workplace location to a location nearby a train station is a trend in the mobility field and can be interpreted as a movement towards sustainable commuting since it makes it easier for employees to travel by public transport. This shows that sustainable commuting is included in the relocation process. However, for some organisations, the attractiveness as an employer was a more important deciding factor in the process of moving. Organisations mainly move to a central location in a lively area because this is an important working condition for (new) employees. This demonstrates that besides sustainable commuting, other aspects can be also dominant in the relocation process.

## 5.2 Reflection on the findings

The results of this research show that the individualistic approaches of managers influence the regulations that they subsequently implement. Dias (2021) aims that perceived behaviour control and egoistic values influence the likelihood of choosing sustainable mobility options. This corresponds with the findings of the individualistic discourse of this research. Existing literature indicates subsequently that individuals need a framework to operate in (Ruhrort & Allert, 2021). Ruhrort and Allert emphasise that individual involvement can bring about large-scale changes if the system level allows it. This statement could form a possible explanation for the interaction of the two different approaches that emerged in this research. In addition, Iyanna, Bosangit, Lazell and Carrigan (2019) argue that studying commuting behaviour should aim for a more balanced approach that focuses on both the individual and the structure. This is discussed because daily travel routines are complex to characterise. Therefore, the fact that an interaction between the individualistic and systemic discourses is demonstrated, brings strength to this research.

The results show that managers include all mentioned indicators of Dyllick and Hockerts (2002) that were included in this research in their policies. This is expressed in policies in which people, planet, and profit are considered important. The importance of these three elements is in line with the previously mentioned literature by John Elkington (1997). He even argued that the three elements should work together harmoniously, otherwise it would harm the other elements. However, this line of reasoning did not emerge in this research. The three elements are considered, but the motives do not show a reasoning that including all forms of capital is done because of would otherwise be harmful for the other elements. The lack of correlation could be explained by the fact that this reasoning might be still a step too far for this research. The harmfulness of not working in harmony is a phenomenon that often emerges in the long run. The CSR policies of the organisations discussed were often still in their infancy, and they may not yet have a view on long-term effects. However, it is even questionable whether the indicators work together harmoniously at the discussed organisations; sometimes it seemed that eco-efficiency was considered more important than the other indicators. The results showed that offering and stimulating sustainable forms of mobility is a main subject in the mobility goals of organisations. The fact that eco-efficiency seems to be dominant may be due to the fact that acting eco-efficient is one of the most obvious ways of becoming sustainable (Dyllick & Hockerts, 2002). This is in line with the research of Young and Tilley (2006) who describe that efficiency is often more dominant than effectiveness and plead organisations to move beyond efficiency to become truly sustainable. Young and Tilley explain the dominance of efficiency by the fact that people always want a return offer when acting sustainable. This was also the case in this research: employees would like to receive financial compensation or a shorter travel time if they choose a sustainable option of travelling.

The last element that was discussed to sketch an image of the concerns of managers in reducing CO2 emissions was the process of (re)location. Willigers and van Wee (2011) discussed the importance of accessibility in the (re)locating process. Accessibility by public transport proved to be a dominant factor in this research as well. This is in line with the image that is sketched by Pritchard and Frøyen (2019), the authors describe that the number of pedestrians, cyclists, and public transport users almost triples when moving to a central location. The increase in pedestrians and cyclists was less clear in this study. This is an relevant suggestion for follow-up research, which will be discussed later in this chapter. The results also demonstrate that a workplace location nearby a train station has a positive effect on how the direct environment is perceived, as a location nearby a train station is often located in a lively environment which is – looking at the results – considered important nowadays. This is in line with the research of Johnson and Rasker (1995), the researchers consider a quality environment, scenic beauty, low crime rate, and recreation opportunities as the four most important factors in the relocation process. These four factors are consistent with a vibrant environment. The role of a lively environment in the (re)locating process was already expected beforehand based on the existing literature, but this influence was greater than expected. A possible explanation could be that the labour market is currently tight and therefore these external factors will play a more important role in attracting and binding (new) employees. Noe and Barber (1993) claim that location preference plays an important role in employee satisfaction, which may indicate that this is also considered important for employees when looking for a new job. Finally, it was expected from the literature that other academically innovative activities would also play a role in the relocation process (Alcácer & Chung, 2007). However, this emerged less prominently than expected in the results. A possible explanation for this could be that the research of Alcácer and Chung focused mainly on technologically advanced companies; the organisations interviewed in this study perhaps associate themselves too little with the technological aspect.

Finally, the Covid-19 pandemic often emerged as an overarching theme, affecting all aspects of this research. Recent research from the United Kingdom also shows that the pandemic has a great influence on our commuting behaviour and describes the pandemic as an 'external shock' (Harrington & Hadjiconstantinou, 2022). In addition, Harrington and Hadjiconstantinou refer to the pandemic as an opportunity for changes in behaviour and motivation. This corresponds with the results of this research; people are more likely to consider whether a business trip really needs to be made, home-work possibilities are used more frequently, and as a result, organisations are able to scale down their office square metres because fewer people are present. Harrington and Hadjiconstantinou's research also indicates that people who currently travel by car or public transport will consider their mode of transport if the Covid restrictions are lifted. However, it remains to be seen whether this is the case, but it's hopeful for the future.

### 5.3 Zooming out

Climate change and the current need to become more sustainable is an impression that is seen in society nowadays and goes further than just commuting. Therefore, the result of this research can be connected to a broader movement that emerges in society. The image that is sketched in this research is in line with the recently issued report by The Netherlands Institute for Social Research (SCP) called *Klimaataanpak: toekomstbepalende keuzes voor onze samenleving. De energietransitie vanuit burgerperspectief*. Sub-question 1 focused on the level of concerns of managers. These concerns follow the reasoning of the SCP rapport since this research clearly shows that the majority of the society is worried about the consequences of climate change. In addition, the SCP rapport shows that broad involvement and active participation by governments, businesses and citizens are essential for achieving the climate goals of the Paris Agreement. The rapport illustrates that if a large majority of citizens had their way, the government and large companies would have to take responsibility for combating climate change. At the same time, more than half of the people think that their own and other households should also take responsibility. This statement is in line with the image that is sketched in this research. It is seen that managers of (large) organisations are concerned about climate change and take action upon reducing $CO_2$ emissions. The actions that managers perform enable possibilities for employees to travel sustainably and, therefore, employees can take responsibility by themselves.

Bouman and Steg (2020) analysed different indicators of what people need in the transition towards a sustainable society. Two relevant facts came forward that suit this research, the attractiveness of a sustainable alternative and intrinsic motivation. This study showed that if the ‘hustle’ is taken away by managers, people find it easier to adapt to a sustainable form of mobility, this is in line with Steg (2021, 22:10). The second fact that Bouman and Steg (2020) showed is that people who value the environment in their lives are more likely to act sustainably, even if it costs some effort or money. This is also seen in this research, people who are more idealistic from themselves, are more likely to act sustainably. Also, the younger generation – which is often more sustainable by themselves – show less resistance than the older generation. Bouman and Steg (2020) even go one step further than what has been demonstrated in this research and state that the role of money is less important when intrinsic motivation is present. These are hopeful results that will contribute to the transition to a more sustainable society.

### 5.4 Recommendation for further research

This research shows a few unexpected matters that need to be further researched in the future. The first recommendation for further research is that it would be relevant to further investigate the phenomenon of renouncing a lease car. The results show that two organisations currently facing difficulties with this new phenomenon. It is an image that is not often seen within organisations and therefore there is a lot of ignorance about how to adapt policies to this. People who renounce a lease car often do so because they are idealistic themselves. But relevant for further research would be to investigate what incentive, from the employer’s point of view, is needed to get people to renounce a lease car and truly become sustainable. If the perception of getting offered a lease car by default changes, it would greatly contribute to the sustainability transition.

In addition, no longer offering a lease car as default has an impact on the attractiveness of the employer. This ties in with the second recommendation; to further investigate research on the correlation between acting sustainably and being an attractive employer from the management’s point of view. Managers want to be sustainable, but they also do not want to risk their attractiveness as an employer. The results demonstrate that this is still a battle for organisations. It is relevant for future research to investigate how managers can make such drastic sustainable choices and which measures could help managers to not lose their attractiveness as an employer.

As described before, the Covid-19 pandemic can have major influences on our commuting behaviour. In the last decades, we have never experienced a pandemic of such magnitude with such influence on the whole world, so there is little or no known scientific literature about it. Further research could fill this research gap. This research demonstrated how the working environment changed during the pandemic and how working from how has become normal and doable for most organisations. The pandemic gives us a chance to radically change our travel behaviour. The research from Harrington and Hadjiconstantinou (2022) proved already that people want to switch transport modes because of the pandemic, however more research is needed to generate this switch. Further research should focus on what is needed to stick to the pandemic travel modes and work from home possibilities when it is no longer a mandatory rule of the government. This will result in fewer travel movements, which will have a positive impact on reducing CO2 emissions.

The next recommendation for follow-up research is to look at what is needed to stimulate pedestrians and cyclists. This research mainly showed that public transport is a sustainable choice and that managers are encouraging it. However, research shows that the potential in walking and cycling is still often untapped (Pritchard & Frøyen, 2019). While walking and cycling are even more sustainable travel modes than public transport. In addition, Harrington and Hadjiconstantinou indicate that as a result of the Covid-19 pandemic, people tend to switch to walking or cycling more easily and quickly. Therefore, there is still a lot to be gained and follow-up research could further explore these opportunities.

The last recommendation for future research is to zoom out and put the concept of sustainable mobility in broader daylight. Dyllick and Hockerts (2002) describe that the three forms of capital are needed for an organisation to become truly sustainable. As described earlier, it is questionable whether the three forms of capital are balanced in this research. However, no firm conclusions can be drawn about dominance, which is not relevant to this research either. But for the future, it would be relevant to look at the balance between people, planet, and profit. It is debatable if the three forms of capital have to work harmoniously together to become truly sustainable and if they have to, future research should zoom in on what is needed to move beyond efficiency.

### 5.5 Recommendations for Syndesmo

Syndesmo is an organisation that has been working in the mobility sector for over 10 years. As a result, they have already gained a lot of knowledge on mobility issues, but there are some results from this research that are relevant for Syndesmo. These results contribute to a better understanding of sustainable commuting, which was Syndesmo's original request. On top of this, they can incorporate the results of this research into the advice they give. All organisations have a mobility policy aimed at sustainable commuting. The main reason why both managers and employees are concerned about sustainable commuting is that both find sustainability increasingly important. This is a good starting point for Syndesmo, knowing that sustainability is becoming a more and more important aspect. It can be concluded that sustainability is an important topic and Syndesmo should include it in their advice.

However, it must be considered that employees often indicate the importance of sustainability, as long as employees do not have to make any sacrifices themselves. This is particularly evident among the older generation in an organisation, the older generation is more likely to show resistance. A recommendation for Syndemso is to adopt new measures in their advice in such a way that it does not appear that employees have to make a sacrifice. For example, advising to consider travel time by public transport as working time, since an employee can also work in the train. In this way, a more sustainable option of mobility is used, but the employee does not have to make any sacrifices. Another recommendation is to put the focus on the younger generation in their advice, as the younger generation is more sustainable in nature, more flexible, and find it easier to adapt to a more sustainable mobility option.

When it comes to actions, it is recommended for Syndesmo to draw their advisory reports with incentives. Advising mandating or steering measures can have the opposite effect and possibly damage the employer's image. It is recommended that Syndesmo also adds a financial incentive in their advice. A financial aspect can ensure that a certain action is achieved, and this has a positive effect on the employer's image. Furthermore, it is important to realise that a lease car is seen as a status symbol. If a lease car is not the default anymore, the attractiveness of an employer is put at risk. As a result, the lease car remains an important aspect of the mobility policy.

When determining a new housing location, the accessibility, the direct environment, and the building are considered important by managers. These results could help Syndesmo to better interpret the outcome and the different elements of the tool that they are developing, which was mentioned earlier. The outcome of the tool is the amount of $CO_2$ emissions of an organisation, and the different elements are the form of mobility, the location of the organisation, and the postal addresses of the employees. This research shows that managers are open to change the forms of mobility they are stimulating, and they often offer a wide range of options. In addition, if they truly want to lower their $CO_2$ emissions, the combination of moving to a location nearby a train station and encouraging public transport is a successful formula. However, Syndesmo will have to consider that a lively environment is considered an important aspect in the (re)location process. A lively environment has a positive effect on the employer image and is acknowledged as an important aspect in recruiting new (young) employees.

## 5.6 Limitations of the research

This research has been proven valuable and applicable in various ways, despite there are several limitations that have impacted the research. The first limitation of this research is that the terms used to formulate the research and sub-questions are quite broad and can be interpreted differently, for example, terms such as 'sustainability' and ‘necessary’. These terms were also used during the interviews and interviewees may have interpreted them differently. To get a clear understanding of what the interviewed managers exactly meant when using these terms, managers were often asked to explain the topic during the interviews. However, this may not have been entirely successful, resulting in some answers being incorrectly interpreted by the researcher.

The second limitation is the limited number of interviews. As explained before, due to the Covid-19 pandemic it was difficult to obtain organisations that wanted to participate in an interview. It might have been beneficial for the results if a few more interviews had been conducted for this research, in this way the topic could have been explored in more depth. Another limitation of this research is the constitution of the sample. Syndesmo is a mobility consultancy firm so all Syndesmo's customers - and therefore the interviewed organisations - are already involved in the process of defining their mobility plan. In addition, Syndesmo also highly values sustainability, so the interviewed organisations may be more concerned with sustainability than other organisations. To avoid this influence, the focus has been put on discovering how organisations are sustainable, not whether they are sustainable. This has been succeeded by, for example, exploring the actions of organisations in depth. However, these actions may also have been influenced because the interviewed organisations have sustainability high on their agenda. Therefore, these organisations may be biased, which results in a distorted view of society. This makes it difficult to generalise the results of this study.

The last limitation of this research is the social desirability answers, this was reflected in two facets of the study; the interviewees speak on behalf of an organisation, and the main topic of the research is sustainability. In both situations, social desirability answers occur. This has been tried to counteract by using the five strategies to limit social desirability bias by Bergen et al. (2019). These five strategies were indirect questioning, providing assurances, probing for more information, requesting stories or examples, and prefacing the question. Especially providing assurances, probing for more information, and prefacing the question were successfully implemented in the interviews. This has probably resulted in less socially desirable answers, especially on the topic of sustainability. On the topic of speaking on behalf of an organisation, the researcher did notice that socially desirable answers occurred. Managers may have hidden some answers that are not accepted by society or that could be negatively interpreted for their organisation. The fact that managers do not want to talk badly about their organisation may have influenced the results and forms, therefore, a limitation of this research.

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## Appendix 1: Overview of Interviewees

| Organisation in Thesis | Name Organisation | Name Interviewee | Position | Date | Location |
|---|---|---|---|---|---|
| A | Vitens | Chiel te Riele | Contractmanager Wagenpark & Gebouwbeheer en -onderhoud | 16-06-21 | Online – MS Teams |
| B | Brink | Finn Vossen | Senior Consultant | 28-06-21 | Online – MS Teams |
| C | Triodos Bank | Bianca de Wit | Environmental Manager | 29-06-21 | Online – MS Teams |
| D | ANWB | Simone Eeken | HR Advisor, Compensation & Benefits | 06-07-21 | Online – MS Teams |
| E | BDO | Mike van Buul | Impact Manager | 22-07-21 | Online – MS Teams |
| F | Gemeente Velsen | Arnout Zaal and Jacomijn op den Dries | Medewerker Verkeer en Vervoer and Manager Bedrijfsvoering, Team Service & Ondersteuning | 23-07-21 | Online – MS Teams |

## Appendix 2: Interview guide

Voorstellen. Student aan de Radboud Universiteit, Corporate Sustainability. Voor mijn afstudeeronderzoek doe ik onderzoek bij Syndesmo naar Duurzaam woonwerk-verkeer.
Vertellen wat de bedoeling is. We gaan 4 topics behandelen.
Vragen of je het mag opnemen -> Vertrouwelijk met alle informatie om gegaan.

**Introductie**

1. Kun je kort vertellen wie je bent, en wat jouw rol is binnen het mobiliteitsbeleid?
    a. Waardoor is jullie mobiliteitsbeleid zo gevormd?
    b. Denk je dat er door Covid-19 bepaalde ontwikkelingen zijn ontstaan die invloed zullen hebben op jullie mobiliteitsbeleid? Zo ja, welke ontwikkelingen en hoe hebben deze invloed?

**Topic 1: Duurzaamheid algemeen**

2. Hoe gaat jouw organisatie om met duurzaamheid? Hebben jullie een bepaalde duurzaamheidsdoelstelling of ambitie? Bijvoorbeeld, 'in het jaar … willen we dit en dat bereikt hebben'
    a. Zijn er consequenties als deze duurzaamheidsdoelstelling niet bereikt wordt?

Oké, we hebben nu in kaart gebracht wat duurzaamheid betekent voor jouw organisatie. We gaan nu meer inzoomen op duurzaamheid en mobiliteit.

**Topic 2: Inzoomen op mobiliteit en duurzaamheid**

3. Welke rol speelt mobiliteit binnen deze doelstelling/ambitie/jullie weg naar duurzamer handelen?
    a. Speelt regelgeving een rol?
    b. Zijn dit meer sturende of stimulerende maatregelen?
    c. Monitoren jullie nu de huidige $CO_2$ uitstoot op het gebied van mobiliteit? Hebben jullie ook in kaart gebracht wat de voetprint is van mobiliteit? En zo ja, hoe doen jullie dit dan? Hebben jullie hier bijvoorbeeld een dashboard voor, of iets anders?

**Topic 3: Inzoomen op mobiliteit en acties**

4. Welke acties nemen jullie om $CO_2$ uitstoot te reduceren?
    a. Zijn dit meer sturende/stimulerende/verleidende acties?
    b. Zetten jullie ook financiële prikkels in om tot een gewenst gedrag te komen? Denk aan een compensatie als werknemers met het openbaar vervoer reizen of thuis werken
    c. Werken jullie met flexibele werktijden of zou dit een optie voor jullie zijn om hiermee te werken? Door flexibele werktijden staan werknemers minder lang en vaak in de file, dit scheelt $CO_2$ uitstoot. Of het openbaar vervoer wordt als aantrekkelijker beschouwd als werknemers buiten de spits kunnen reizen.

d. Moedigen jullie thuiswerken aan? Ook na de Covid-19 pandemie? Zo ja, op welke manier doen jullie dit? Bijvoorbeeld, zorgen voor goede thuiswerkplek, of aandacht besteden aan mentale gezondheid werknemers.

5. Zie je een spanningsveld tussen aan de ene kant het willen investeren in duurzaamheid en aan de andere kant de werknemerstevredenheid? Zo ja, hoe ga je hier mee om?
   a. En hoe zit dat met de werknemersproductiviteit?
   b. En met de werknemersflexibiliteit?

**Topic 4: Bepalen huisvesting**

6. Zijn jullie als organisatie nu opzoek naar een nieuwe locatie of recentelijk geweest?
   - Als antwoord nee is, de vragen toespitsen op hoe ze tot hun huidige locatie zijn gekomen
   - Als ze dat niet weten, de vragen hypothetisch stellen

7. Welke rol speelt mobiliteit bij het zoeken van een nieuwe locatie? (Of dus 'welke rol speelde mobiliteit bij het selecteren van jullie huidige locatie?)
   a. Kun je me misschien meenemen in de selectieprocedure? Gaan jullie bijvoorbeeld heel uitgebreid onderzoek doen, kijken naar de impact van $CO_2$. Of zeggen jullie eerder, 'dit is een mooie locatie, daar gaan we zitten'?
   b. Hebben jullie strenge eisen bij het selecteren van een nieuwe locatie?
      i. Hoe belangrijk zijn de volgende faciliteiten om $CO_2$ uitstoot te reduceren:
         1. Aantal parkeerplekken
         2. Reistijd van medewerkers, en hoe bepaal je dit?
         3. Bereikbaarheid
         4. Laadpalen voor elektrische auto's
      ii. Doet de omgeving ertoe? Is bijvoorbeeld een centrum locatie aantrekkelijker omdat deze beter te bereiken is met het ov? Of juist minder aantrekkelijk door gebrek aan parkeerplaatsen?
         1. En vind je het bijvoorbeeld ook belangrijk wat voor andere bedrijven in de omgeving zijn gevestigd?

## Appendix 3: Coding Results

| Code Group | Code | Amount |
|---|---|---|
| Individualistic Paradigm | Perceptions and attitude | 45 |
| | Maximizing utility | 13 |
| | Attractive employer | 15 |
| Systemic Paradigm | Regulations | 52 |
| Eco-efficiency | Forms of mobility | 24 |
| | Flexible work shifts | 10 |
| | Financial support | 22 |
| Eco-effectiveness | Reducing CO2 emissions | 15 |
| Socio-efficiency | Vitality | 17 |
| | Employee satisfaction | 29 |
| | Employee flexibility | 17 |
| | Employee productivity | 11 |
| Socio-effectiveness | Equal possibilities | 9 |
| Accessibility | Close to highway | 4 |
| | Close to railway network | 17 |
| Direct environment | Vibrancy | 8 |
| | Academic innovative activities | 3 |
| Building | Facilities | 16 |
| | Energy neutral building | 14 |
| | Costs of the Building | 4 |
| No Group | Covid 19 | 16 |