2014•2015
FACULTEIT SCHOOL VOOR MOBILITEITSWETENSCHAPPEN
master in de mobiliteitswetenschappen

Masterproef

Onderzoek invloed van persoonlijk reisadvies op woon-werkverkeer

Promotor :
Prof.dr.ir Tom BELLEMANS

Jessie De Laender
Scriptie ingediend tot het behalen van de graad van master in de mobiliteitswetenschappen

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KNOWLEDGE IN ACTION

Universiteit Hasselt | Campus Hasselt | Martelarenlaan 42 | BE-3500 Hasselt
Universiteit Hasselt | Campus Diepenbeek | Agoralaan Gebouw D | BE-3590 Diepenbeek

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Preface

This document is a master thesis to obtain the degree of master of transportation sciences with the specialization of mobility management. I have chosen to carry out a study about the effectiveness of personalized travel planning on commuter's transport mode choice. During literature review, I defined the goal of the research more specifically, namely find out on what this effectiveness is allocated to.

By carrying out a survey and reporting all the findings carefully, I will prove that I have obtained the right competences during my education to obtain the degree of master in transportation sciences with specification mobility management at University Hasselt. For this assignment, Prof. dr. Ir. Tom Bellemans is my supervisor and promoter. Dr. ir. Bruno Kochan was also involved in my research to help me out with the analyses phase.

I would like to thank some people for helping me in this master dissertation. I would like to thank Prof. dr. Ir. Tom Bellemans and Prof. dr. ir. Bruno Kochan for the support and constructive advice. Then, I would like to thank Mr. Joram Langbroek for informing me about how to set up a stated preference survey. He gave me some presentations of the course "Analytical Skills for the Interpretation and Analysis of Travel Demand". I didn't follow this recently introduced course and the content of these presentations clarified a lot for me. I also want to thank all the participants who took time to fill in my online survey.

I also really like to thank my boyfriend Gust Verheyen, my father Daniel De Laender, my grantmother Georgette Van Caluwé to encourage me to continue writing this thesis. It took a lot of effort for me after losing my real motivator, friend and mother, Carine Van de Wiele. I would like to dedicate this master thesis to her and to the people who replaced her as a motivator.

At least, I would like to thank my former employer, stad Dendermonde, to approve a half-time career break for finishing my thesis. Working and studying is very hard to combine and I don't think I would have succeeded without having more "spare time".

Summary

Due to commuter traffic, there is a lot of traffic jam at peak hours in Flanders. The challenge of policy makers is to change people's travel behaviour instead of building new roads to guarantee the accessibility of cities. The transport mode choice of people can be influenced by implementing hard but also soft measures, like giving personal travel advice. In other countries personal travel planning programs were positively evaluated as car use has fallen, travel by other modes of transport has risen, and that CO2 emissions have been reduced thanks to giving personal travel advice to employees. In this study, research has been done to allocate the effectiveness of personal travel advice.

Three techniques of giving personal travel advice are examined in the research. Policy makers might motivate travel behaviour change, provide customized route information or request a plan for changing travel behaviour. A stated preference study is carried out where respondents had to evaluate different kind of travel advices where those three techniques had different levels of information. Information level 0 contains a statement, level 1 contains brief information, level 2 contains extensive information and level 3 contains extensive information and a visualisation. 64 unique travel advices were evaluated.

The findings of this research are based on the answers of 204 respondents. Only for the second method, namely giving route information there is evidence that the more information given, the more effective the travel advice is. The effectiviness of the other techniques is stongly dependent on the personal characteristics of the employee. For example, people in their twenties prefer information about motivational factors in a structured way whereas people with an age of 30 to 45 years do like most the extensive explanation with motivational pictures. Most full-time workers choose the personal travel advice where a visualisation of the behaviour change plan is given while half-time workers prefer the extensive textual information about changing behaviour. It is very interesting for policy makers to know the preferences of people. With this information, the travel advice for each employee can be individualized in this way and a greater modal shift will be realised.

Instead of exploiting a contact center for employees, policy makers should better invest in a website or smart phone application which automatically provides personal travel advice based on the personal characteristics of the employee and with the help of existing route planners and cost-benefitcalculators.

For specific subgroups, for example people with children, the results of the research were not reliable so we assume that other external factors do play a role in the mode choice behaviour of parents. Further research is recommended.

Samenvatting

Omwille van het woon-werkverkeer is er in Vlaanderen veel verkeershinder tijdens piekuren. De uitdaging voor beleidsmakers bestaat in het veranderen van verplaatsingsgedrag van werknemers en niet in het bouwen van nieuwe wegen om de bereikbaarheid van de steden te garanderen. De vervoerswijzekeuze van de mensen kan worden beïnvloed door de invoering van harde, maar ook zachte maatregelen, zoals het geven van persoonlijk reisadvies. In andere landen werden projecten met betrekking tot persoonlijke reisplanning reeds positief geëvalueerd waarbij het gebruik van de auto is gedaald, het gebruik van andere vervoerswijzen is gestegen, en de CO2-uitstoot is gereduceerd dankzij het geven van persoonlijk reisadvies aan werknemers. In deze studie is onderzoek gedaan naar de allocatie van de effectiviteit van persoonlijk reisadvies.

Drie technieken van het geven van persoonlijk reisadvies worden onderzocht in het onderzoek. Beleidsmakers kunnen vervoerswijzekeure beïnvloeden door te motiveren, door het bieden van op maat gemaakte routeinformatie of het aanbieden van een plan van aanpak voor het veranderen van reisgedrag. Een stated preference onderzoek werd uitgevoerd waarbij de respondenten steeds verschillende reisadviezen moesten evalueren. Bij elk reisadvies varieerde de informatiegraad van de drie te onderzoeken technieken. Het laagste informatieniveau bevatte slechts een verklaring, het volgende niveau 1 bevatte beknopte informatie, niveau 2 bevatte uitgebreide informatie en niveau 3 bevatte uitgebreide informatie met een visualisatie. 64 unieke reizen adviezen werden geëvalueerd.

De bevindingen van dit onderzoek zijn gebaseerd op de antwoorden van 204 respondenten. Alleen voor de tweede methode, namelijk het geven van routeinformatie, zijn er significante aanwijzingen dat wanneer meer informatie wordt gegeven, het reisadvies effectiever is. De effectiviteit van de andere technieken hangen sterk af van de persoonlijke kenmerken van de werknemer. Twintigers hebben bijvoorbeeld liever informatie over de motivatiefactoren op een gestructureerde manier, terwijl mensen met een leeftijd van 30 tot 45 jaar een voorkeur hebben voor een meer uitgebreide toelichting met motiverende foto. De meeste full-time werknemers kiezen voor het persoonlijk reisadvies waar een visualisatie van het gedragsveranderingsplan wordt gegeven terwijl de half-time werknemers de voorkeur geven aan de uitgebreide tekstuele informatie over het veranderen van gedrag.

Het is heel interessant voor beleidsmakers om de voorkeuren van mensen te kennen. Met deze informatie kan het reisadvies geïndividualiseerd worden voor elke werknemer en zal een grotere modal shift gerealiseerd worden.

In plaats van het voorzien van een contactcenter voor de werknemers, zouden beleidsmakers beter investeren in een website of een smartphone applicatie die automatisch persoonlijk reisadvies geeft op basis van de persoonlijke kenmerken van de werknemer en met behulp van bestaande routeplanners en bestaande kosten-baten rekentools.

Voor specifieke subgroepen, bijvoorbeeld mensen met kinderen, waren de resultaten van het onderzoek niet betrouwbaar, dus we veronderstellen dat andere externe factoren een rol spelen in de vervoerswijzekeuze van ouders. Verder onderzoek wordt aanbevolen.

Table of contents

List of figures and tables

1 Introduction

This thesis is the final assignment to obtain the certificate “Master of Transportation Sciences with the specialization of Mobility Management” at Hasselt University.

I have chosen to investigate the effectiveness of personalized travel advice on the transport mode choice of employees. This topic interests me greatly and might be interesting for policy makers to gain inside in the effectiveness of this soft policy measure.

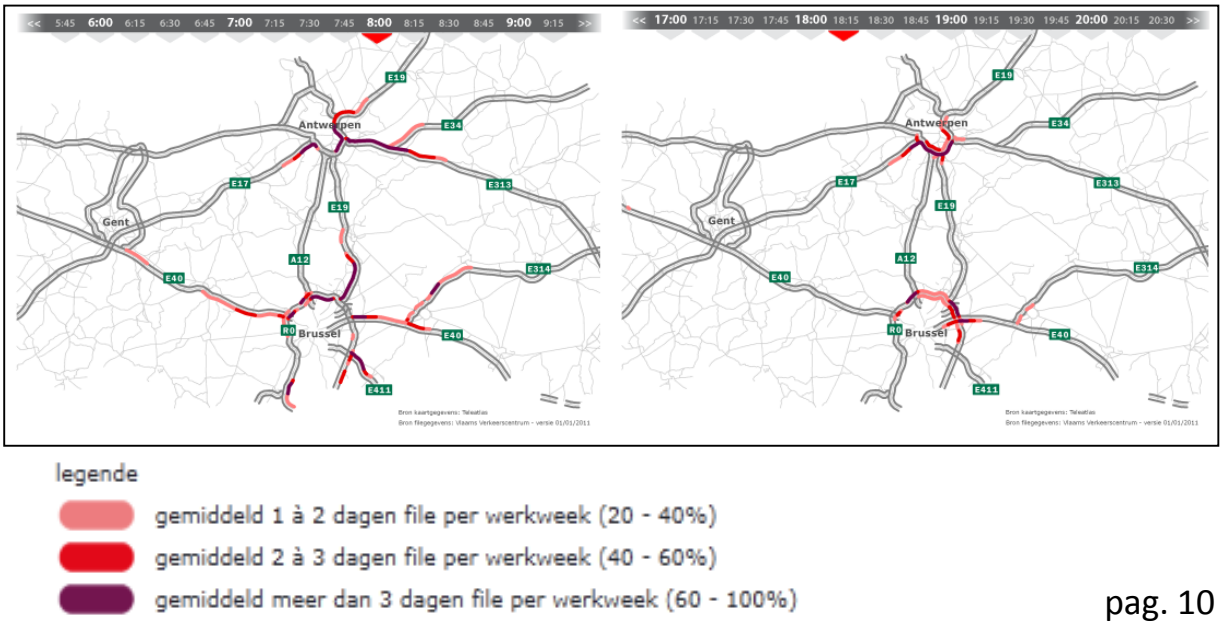
This introduction contains an analysis of the project where the problem is investigated and the objective is formulated. In the second part of this introduction a research approach is proposed. Some research objectives and research questions are formulated.

1.1 Analysis of the project

1.1.1 Definition of the real-life problem

Traffic congestion on working days at rush hour is very common nowadays. Verkeerscentrum Vlaanderen - Departement Mobiliteit en Openbare werken (2013) maps out the structural traffic jams in Flanders for every 15 minutes measured on working days. Analysing these maps, we can conclude that around the big cities Brussels and Antwerp, there is traffic congestion at peak hours from 6.30 a.m. until 10.00 a.m. and from 2.45 p.m. until 7.30 p.m., at least 2 days a week. The structural traffic-jam peaks in the morning at 8.00 a.m. and in the evening at 6.15 p.m. See below.

Figure 1: Structural traffic-jams in Flanders (Verkeerscentrum Vlaanderen - Departement MOW, 2013)



The rush hour is visible on the main road network map of Flanders, but is also noticeable on local roads. Work and school related trips are the cause of these structural traffic-jams at peak hours. In this study, the focus will be on work related trips. In table 1 we see the evolution of the modal split with relation to commuter travel in Flanders since 1994 until now. Despite the alternative transport modes in Flanders, about 70% of the work related trips are done by car.

Especially the individual use of cars for commuter travel leads to problems of accessibility, economic development and the quality of the environment. The current travel behaviour often leads to accidents and contributes to congestion and various forms of environmental pollution.

	2011-2012	***2010-2011***	***2009-2010***	***2008-2009***	***2007-2008***	***2000-2001***	***1994-1995***
Car driver	70,3	69,5	67,5	67,8	66,8	68,6	64,0
Car passenger	3,1	3,0	3,3	2,9	3,7	4,2	6,7
motorcycle	0,5	0,7	0,6	0,9	0,7	0,9	
Moped	1,0	1,2	1,5	0,7	1,1	1,0	
train	6,4	6,9	7,0	7,0	7,1	5,5	5,8
bus, tram, metro	4,3	2,7	3,7	5,2	4,0	2,4	3,1
Organized transport	0,8	1,5	1,6	1,0	0,9	1,9	3,6
bicycle	11,2	10,8	12,0	12,0	12,5	12,9	12,9
pedestrian	2,5	3,9	2,7	2,4	3,3	2,6	3,7

Table 1: Evolution of commuters' modal split in Flanders (Studiedienst Vlaamse Regering, 2013)

1.1.2 Policy objective

In 2005, the Flemish minister of transport introduced "Het Pendelplan" (Vlaamse Overheid, 2005), a policy document with the purpose to reduce the car use in commuter travel to 60% by taking some infrastructural, financial and sensitizing measures to promote alternative transport modes. Looking at

Further measures are necessary to reduce car use in commuter travel to 60%.

Implementing measures to reduce car use is also called travel demand management. In general, these policy measures can be subdivided into 'hard' and 'soft' measures. Policy measures considered as 'hard' are the provision of transport infrastructure and other physical and/or technical facilities, strict regulation and significant pricing policies. These measures often meet with public disapproval, are politically infeasible, and may alone be insufficient.

As a consequence, alternative soft transport policy measures have been developed to motivate individuals to voluntarily reduce car use (Richter, Friman, & Gärling, 2010). 'Soft' policy measures include information provision, education and persuasive advertising, aimed at changing norms, motivations and perceptions. (Cools, Brijs, Tormans, De Laender, & Wets, 2012).

Personalized travel planning (PTP) is a soft policy measure and has been already implemented in several countries with the intention to modify people's behaviour. With PTP, people get individually informed about the alternatives for the car so they can make in this way a well-considered travel mode choice how to get to work.

1.2 Research approach

Besides the general travel information, there is a stronger need to analyse travel behaviour at the individual level so appropriate strategies can be formulated to reduce the car dependency. In this study, the focus will be on personalized travel planning and its effect on the transport mode choice of people.

1.2.1 Literature review

First, the existing literature about personalized travel planning is explored so the scope of this thesis can be defined afterwards.

The effect on travel mode choices have already been demonstrated for PTP-programs implemented in Australia, the UK and Japan. Some other European countries are also implementing and evaluating similar soft policy measures.

Richter e.a. (2010) as well as Friman, Larhult, & Gärling (2013) made a review of evaluations of several soft transport policies in these countries. Their findings are positive as car use has fallen, travel by other modes of transport has risen, and that CO2 emissions have been reduced due to the PTP-programs. Friman e.a. (2013) also did an analysis of 32 Swedish PTP-programs and concluded that there are similar positive effects in some programs in Sweden, comparing with the results in other countries.

On the other hand, there are also some researchers who doubt the reliability of the reported results. Bonsall (2009) for example states that there is a lack of clarity in evaluation reports, that inadequate sample sizes are used, that there is an incorrect attribution of the effects and so on.

For example, PTP-programs are often a part of a wider package of measures including improvements to sustainable modes or constraints on the continued use of the car. A synergy between soft and hard measures will then be established. It is important to be clear whether an evaluation is seeking to measure the effect of the PTP or the effect of the PTP as a part of the wider package. Where the PTP is part of a wider package, part of the overall impact will be due to other elements of the package and, unless this is made clear, readers may deduce greater effect from the PTP than is actually warranted.

1.2.2 Research problem

As in literature found, there are still some troubles evaluating PTP-programs. There exists also a knowledge gap allocating the modal shift after implementing personalized travel planning programs.

Although the results reviewed underscore the effectiveness of soft transport policy measures in general, Richter e.a. (2010) points out that several gaps of knowledge exist, thus suggesting that more research is needed, in particular research addressing the question of why soft transport policy measures are effective. He refers to the classification of PTP-programs of Fujii & Taniguchi (2006) and suggests that further research need to focus on the evaluation of the effectiveness of single techniques as well as combinations of these techniques that are components of soft transport policy measures, which is motivational support, plan formation, and customized information.

According to Fujii & Taniguchi (2006) personalized travel plan programs differ in four ways. These four parameters (see table 2) will have an influence on the effectiveness of PTP-programs.

Tabel 2: Parameters for Classifying PTP-Programs (Fujii & Taniguchi, 2006)

Parameter	**Explanation**
Location	Programs can be implemented at a workplace (targeting work trips), at a school (targeting parents' chauffeuring trips), or in a residential area (targeting all types of trips).
Procedure	Programs differ in how many times the implementation of the personalized travel advice is proceeded and how the evaluation is carried out.
Communication	Face-to-face communication, household visit, group briefing, regular mail, telephone, e-mail, internet web-site
Techniques to change travel	Techniques differ in three main ways based on the following issues: • Do they motivate travel behaviour change? • Do they request a plan for changing travel behaviour? • Do they provide customized information?

1.2.3 Scope of the research

In this survey the target group will be commuters. The personalized travel advice will be implemented at the workplace. Employees will get informed only once and the evaluation will be based on a stated preference questionnaire. In this study, the target group will be contacted by e-mail. This is a neutral and easy, but still a personal way of approaching people.

The techniques that have been used to change car use is the experimental variable in this research. Personalized travel advice can include motivational support (e.g. health benefits, financial benefits, environmental benefits,…) and customized information (e.g. information about safe bicycle routes or public transport routes). But it can also request a plan for changing travel behaviour. These techniques can also be combined.

1.2.4 Research objective

The objective of this research is to find out which personalized travel plan program is most effective by means of technique used. First, it is interesting to know what factors might have an influence on transport mode choice of commuters and how this choice can be influenced by policy makers. Then, it is important to define the three techniques, which are motivational support, plan formation, and customized information. This information is collected by carrying out a literature study.

These influencing factors can be implemented in the survey. On the other hand, it is the intention to investigate the effect of the travel advice on the individual modal choice of commuters and to which technique or combination of techniques this effect is due to.

For this, a stated preference study will be carried out. The results of this research can give input to policy makers or employers in order to give employees directed personal travel advice and convince them to chance their travel behaviour.

The evaluation studies mentioned in section 1.2.1 share the same objective of the research which forms the subject of this paper in that they attempt to determine the effectiveness of personalized travel programs in terms of modal shift. However, these studies differ from the current research in that they do not allocate the effectiveness to a specific technique used.

1.2.5 Research questions

In order to fulfil the objective, a main research question is formulated. But first, some sub-research questions has to be answered to come to a substantiated solution to the main research question.

1. Which factors do have an influence on commuter's mode choice behaviour?
2. How does travel behaviour change?
3. What do we understand by motivational support, plan formation, and customized information?
4. How can the influencing factors be implemented in the evaluation study?
5. What motivational information can be used in the personalized travel advice?
6. What kind of plan formation can be used in the personalized travel advice?
7. What kind of customized information can be used in the personalized travel advice?
8. To which extent are commuters willing to change their transport mode choice because of consulting personalized travel advice?
9. Why are commuters willing to change their transport mode choice after having personalized travel advice?
10. Which factors are decisive for choosing an alternative transport mode?

All the answers on previous sub questions will lead to the answer on the main research question below:

Which technique or which combination of techniques of personalized travel planning is most effective according to the stated preference research?

1.2.6 Reading guideline

This report deals with the allocation of the effectiveness of personal travel advice and contains 4 more chapters after you have red this introduction.

In the next chapter, commuter travel behaviour is discussed. On the one hand we explain which factors have an influence on people's transport mode choice while on the other hand the process of behavioural change is presented. These information is necessary to develop effective travel advice with the intention to cause a modal shift.

In the third chapter, it will become clear how the allocation of the effectiveness exactly will be examined in this study. The methodology and the set-up of the research is explained in detail.

In the fourth chapter, the process from collecting data to data analysis is explained. The data is collected through an internet questionnaire and a detailled description of the sample is given in this part of the dissertation. Before performing the analysis, the raw data (output of the questionnaire) was ameliorated. A good input for analysis generates good analysis results. Because the data is qualitative, some dummy variables were added for making data analysis possible. At least, a general analysis and some specific analyses for subgroups are performed and the results are also interpreted.

In the last chapter, an overview of the results of the study are presented and some conclusions are made. With the conclusions of the survey in mind, policy advice is given how to implement personal travel advice in practice. The last part of the report looks back on the research. Some aspects of the study were not performed perfectly and could be improved. Recommendations for further research are made.

2 Commuters' choice behaviour

The purpose of giving personalized travel advice is to change commuter's travel behaviour. Therefore, it is necessary to gain insight in how people make a transport mode decision and how behavioural change can be realised. In this chapter a brief literature study is carried out.

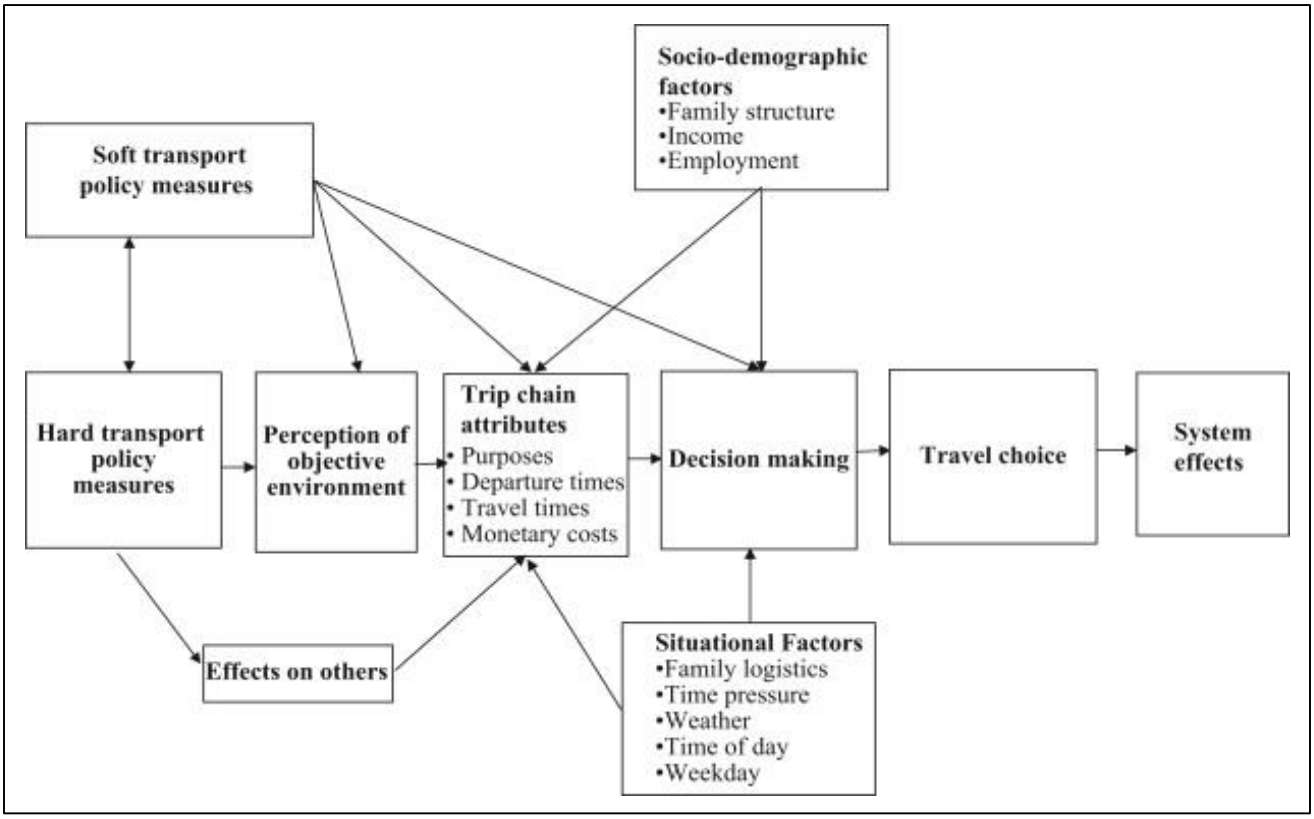
2.1 Decision making process

Anable (2005) did a literature review and notes that many studies have used psychological theories of attitude-behaviour relations such as the theory of planned behaviour to predict mode choice. Those studies have generally concluded that the choice of travel mode is largely a reasoned decision related particularly to attitudes and perceived barriers to behaviour. However, other studies suggest that much of people's daily travel mode choices are habitual and not always preceded by the deliberation of alternatives. These authors suggest that the addition of an independent measure of habit will improve the predictive capability of attitude-behaviour studies.

Bamberg, Fujii, Friman, & Gärling (2011) created a general conceptual framework relating peoples' decision making and transport mode choice. This decision making process is presented in figure 2.

In the conceptual framework the perception of the objective environment (e.g. available travel modes and spatial distribution) provide the knowledge base from which people derive their personal set of possible travel options. It is assumed that these options consist of trip chains defined as bundles of attributes (e.g. purposes, departure and arrival times, travel times, monetary costs). Besides the objective environment, socio-demographic factors (e.g. family structure, income, employment), and situational factors (e.g. family logistics, time pressure, weather, time of day, weekday) are assumed to influence people their perception of possible travel options. Another situational factor that is not mentioned in figure 2 is lifestyle (Vega & Reynolds-Feighan, 2009).

Figure 2:Conceptual framework relating peoples' decision making and transport mode choice (Bamberg e.a., 2011)



Hard transport policy measures modify the objective environment. It may lead to changes in travel patterns if people perceive how the environment is modified. Hard policy measures, for example road congestion charging, deliberately reflect on the consequences it may have for the possible set of travel options, namely increased cost of using the car. In contrast, the aim of personalized travel planning is to directly influence car users' decision making by altering their perceptions of the objective environment, by altering their judgements of the consequences associated with the use of different travel options, and by motivating and empowering them to switch to alternative travel options.

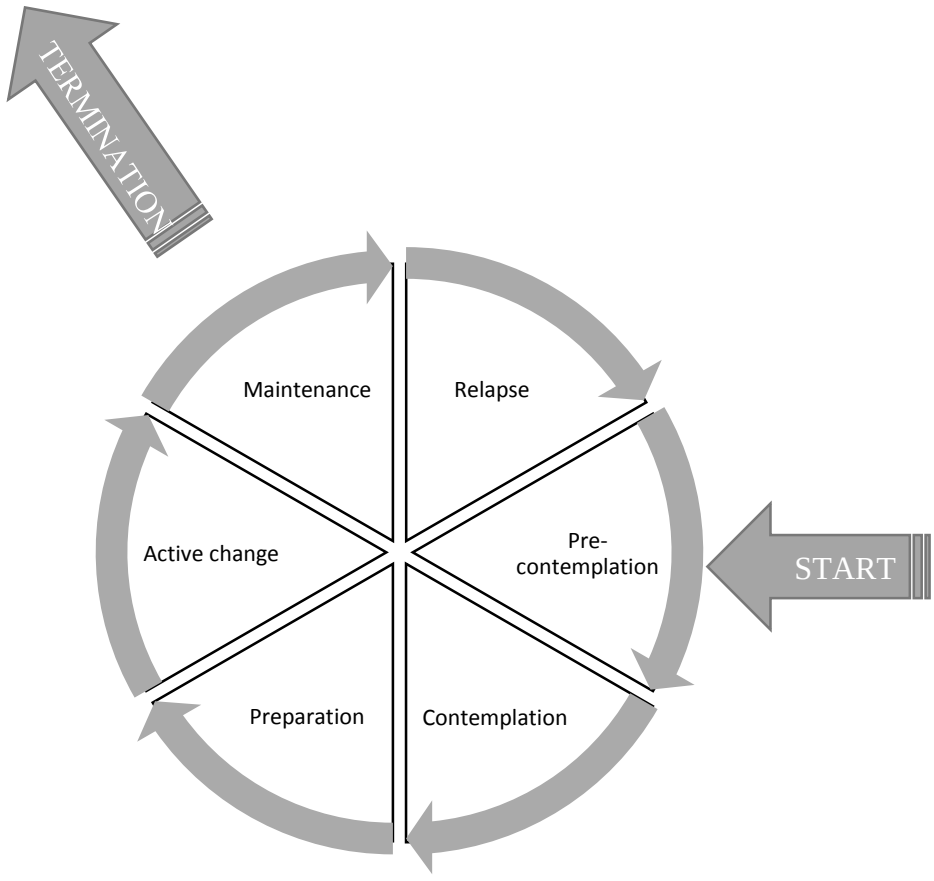
This conceptual framework of Bamberg, Fujii, Friman, & Gärling (2011) gives an answer to the first research question "Which factors do have an influence on commuter's mode choice behaviour?".

2.2 Process of behavioural change

It is clear that travel behaviour is strongly associated with personal choice, social lifestyles and urban contexts (Ben-Elia & Shiftan, 2013). As travel behaviour is a result of complex interactions between all these factors, it is very hard to realise a behavioural change.

Therefore it is good to know the process of behavioural change. Below, a six-stage process of behavioural change is shown. This scheme is based on a theory of Prochaska, DiClemente, & Norcross (1992) which is mostly applied to addictive behaviours. For some people, their car-use can be seen as a behavioural addiction (Anable, 2005). This theory is explained below on the basis of a conference paper of Volz (2009).

Figure 3: Process of behavioural change



Pre-Contemplation is the stage in which an individual has no intent to change behaviour in the near future. People in this stage tend to defend their current bad habit(s) and do not feel it is a problem. Precontemplators are often characterized as resistant or unmotivated and tend to avoid information.

Individuals in the **contemplation** stage openly state their intent to change behaviour. They are weighing the pros and cons of quitting or modifying their behaviour. Contemplators are often seen as postponers.

In the **preparation** stage, people have made a commitment to make a behavioural change and they intend to take steps to change. The preparation stage is viewed as a transition rather than stable stage.

Action stage is one in which an individual is taking steps to change their bad behaviour by using a variety of different techniques. People in this stage will try to sustain their motivation and hopefully they go to the next stage, namely maintenance.

Maintenance involves being able to successfully avoid any temptations to return to the bad habit. People in this stage are working to prevent **relapse**.

This six stage model of Prochaska, DiClemente, & Norcross (1992) gives an indication where people go trough when they are changing habitual behaviour. As it is mentioned, this theory is used a lot in medicine sciences but can also be applicated in transport sciences where car use can be seen as the addictive behaviour.

The research question “How does travel behaviour change?” can be answered by implementing this theory. A change in travel behaviour starts with an intention to leave the car at home and then it is important to set realistic goals, otherwise you will relapse in your old habits. You can start with cycling one day a week to work. To maintain the desirable behaviour it is good to keep motivated. In Flanders, bike to work is a well-known project which motivates employees to cycle to work and you get rewarded for it or you can compare yourself to collegues or friends. For some people such a small reward or competition makes them motivated. This information is used in this study to make up the different kind of travel advice which focusses on intention, action and maintenance.

3 Set-up Research

Before designing the survey, it is important to know the meaning of the three different techniques. In the second paragraph, the difference between stated preference and revealed preference is demonstrated and a choice of survey technique is explained. Then, the information of the literature review about commuter's choice behaviour is used to develop a questionnaire which must give answers to some of the research questions formulated in the introduction.

3.1 Explanation of different techniques

Personalized travel planning programs can differ in many ways. It can include motivational support, customized information or it can request a plan for changing travel behaviour. Below you will find an answer to the third research question, namely "What do we understand by motivational support, plan formation, and customized information?"

3.1.1 Motivational information

If there is an individual lack of motivation to reduce car use, changes in travel behaviour are not to be expected (Eriksson, Garvill, & Nordlund, 2008). Personalized travel advice can respond to this by offering a variety of motivational information.

In the experiment of Garvill, Marell, & Nordlund (2003), it was the intention to make the car users consider various features of their trips (e.g., length, amount of baggage, and weather conditions), so they can make a well-considered transport mode choice prior to behaviour. In this study, individuals with a strong car use habit, but not those with a weak habit, reduced their car use as a result of deliberate processing.

Steg, Vlek, & Slotegraaf (2001) examined which aspects of car-use are evaluated as attractive or non-attractive. The results of his study shows that the independence, the availability and the utility of the car are seen as the most attractive aspects of car use. Instrumental aspects, such as costs, environmental problems and driving conditions were evaluated as the most unattractive aspects of car use. Next to these traditional instrument-reasoned aspects of car use, some symbolic-affective motives, such as aggressive driving behaviour of other car-users, were evaluated as moderately unattractive.

In the report of the Ministry of Transport, Public Works and Water Management & Fietsberaad (2009) about cycling use in the Netherlands. Some arguments pro-cycling are as follows: it is sustainable, healthy, has zero emissions, it is cheap both in purchase as in providing infrastructure, is space and traffic efficient, and so on.

The purpose of the motivational information in personal travel advice is to convince car-users to get out of their cars and use environmental-friendly transport modes such as the bycicle or public transport. The emphasis of the motivational information has to be on the unattractive aspects of car-use which correspond to the attractive aspects of the alternative transport modes. **In this study, costs, environment, travel time (driving condition) and health will be part of the personal travel advice.**

3.1.2 Customized route information

Some people don't know how to go to work with alternative transport modes. A lot of planning tools exist to plan a trip by public transport or by bicycle. In Flanders, Slimweg is an organisation that informs commuters about work related trips. On the website of Slimweg, commuters can ask for personalized travel information. By means of example, I submitted a application form (see appendix 1) to ask for personalized travel advice. Below, the answer of Slimweg is displayed. Only the travel route by train is presented by means of textual information.

Geachte mevrouw,

Hartelijk dank voor uw aanvraag.

Afhankelijk van uw vertrekuur spoort u over Sint-Niklaas of Gent Sint-Pieters.

- Wandel of fiets naar het station Gent-Dampoort
- Neem om 7:26u de trein richting Antwerpen-Centraal tot het station van Lokeren, aankomst om 7:38u
- Neem in Lokeren om 7:43u de trein richting Poperinge tot in Dendermonde, aankomst om 7:57u
- Vanaf hier is het nog ongeveer 20 minuten wandelen

of

- Neem om 7:39u de trein tot Gent-Sint-Pieters
- Neem om 7:55u de trein richting Leuven tot het station van Dendermonde, aankomst om 8:18u

Figure 4: Personalized travel information Slimweg

This is useful information but an illustration of the walking route before and after the train jouney could be added or it could contain travel information about other transport modes.

Customized travel information about the travel route by bus, by train and by bicycle will be integrated in the survey.

3.1.3 Behavioural change plan

As it is explained in paragraph 2.2, it is difficult to change habitual behaviour. Eriksson et al. (2008) did some literature review on how habitual car use can be interrupted. Several studies indicate that contextual changes (e.g., economic incentives such as prepaid bus tickets, alterations of the physical environment) may influence travel behaviour. Other studies have been found that planning a behavioural change or deliberately evaluating own travel behaviour, interrupts habitual travel mode use.

According to Fujii & Taniguchi (2005), it is essential to have an implementation intention to change travel behaviour. It has been demonstrated that people often fail to implement new behaviours, even when they have developed such intentions and are, to some extent, motivated to change. Unlike behavioural intention, or goal intention, which is merely an intention to implement a behaviour without any behavioural plan, implementation intention is an intention that includes information on when, where, and how the behaviour will be implemented. A behavioural plan made prior to actual implementation of the behaviour is more effective in increasing the implementation intention, as well as increasing the probability that the behavioural intention will actually be implemented.

Using a behavioural change plan, may also help to control and maintain a behaviour. In Belgium, some online tools such as “bike to work”, or “van5naar4” were invented to motivate the continuation of the desired travel behaviour.

In this study, a behavioural change plan will be presented to respondents, reffering to Belgian online tools to motivate sustainable transport mode choice.

3.2 Methodology

3.2.1 Difficulties with revealed preference

In a revealed preference experiment, the researcher is doing a field experiment by implementing a measure, in this case, personalized travel advice. The real behaviour of respondents before and after the implementation of the measure will be examined. The difficulty with a revealed preference in this study is that there are a lot of external factors that might have an influence on the transport mode choice of a commuter. The commuter distance or the availability of safe bicycle paths for example are different for every respondent but these factors are very important for making a transport mode decision, even more important than the information provided by a personalized travel plan. If we want to allocate the effectiveness to a specific technique of giving the personalized travel advice, it is better to control other external factors. Therefore, a stated preference experiment is needed.

3.2.2 Stated preference

In a stated preference experiment, the researcher seeks to simulate a real situation in the field but the actual modal choice of respondents is not executed . Through asking hypothetical questions, the researcher finds out what the preference of the respondent is. The context of the hypothetical situation needs to be very clear to the respondent, so the answers will be as realistic as possible.

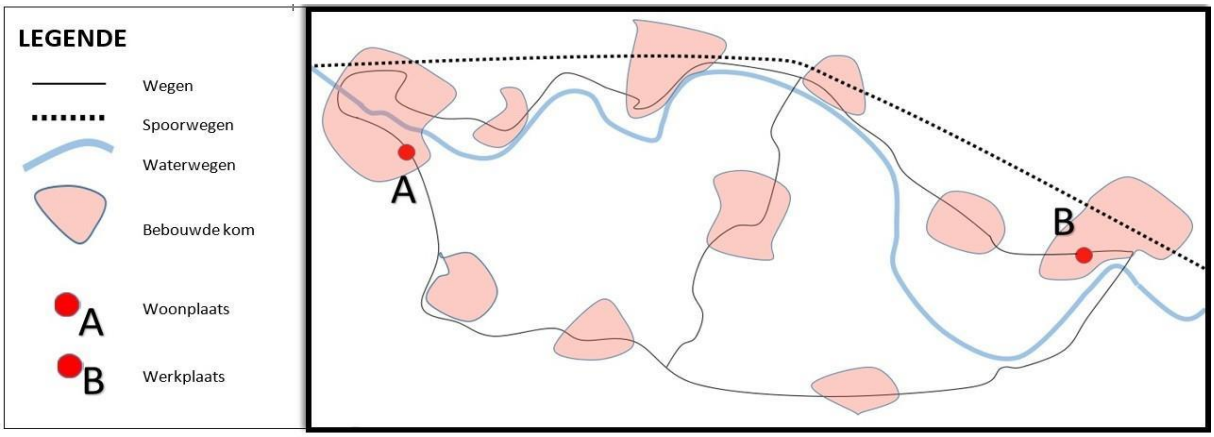
3.2.2.1 Fictive situation

The fictive situation that will be used in this survey is based on the Flemish spatial context and average travel distances and travel times of Flemish commuters which is explained below.

A simple, but realistic situation is presented to the respondents.

You live at location A and work at location B (see map below). You start your day at 8:30 am and end your day at 5:00 pm. Your house is, bird's eye view, 12 kilometers away from your workplace. The route runs mainly on regional roads (N-roads) where you can drive alternately 70, 50 and 30 km/h. Due to rush hour, this route is sensitive to congestion. By bike you can partially avoid this route via the cycle path along the river, but with a detour factor. There is also an opportunity to get to work by public transport.

Figure 5: Illustration of the fictive situation



The given travel distance is based on results of a Flemish travel behaviour study carried out in the period 2011-2012 and reported in 2013 (Vlaamse Overheid, 2013). Below you can see a table which shows the distribution of commuters according to their commuter's distance. The median of this distribution lies between the travel distance 10.1km and 15km. therefore, 12km is used as commuter distance in the fictive situation of this stated preference survey.

Table 3: Distribution of Flemish commuters according to the commuter's distance (Vlaamse Overheid, 2013)

vastkmkl	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0-1 km	32.86715	5.22	32.86715	5.22
1.1-2.5 km	43.12332	6.86	75.99047	12.08
2.6-5 km	86.41912	13.74	162.4096	25.82
5.1-7.5 km	51.51072	8.19	213.9203	34.01
7.6-10 km	56.95273	9.05	270.873	43.06
10.1-15 km	87.36411	13.89	358.2371	56.95
15.1-20 km	59.41759	9.45	417.6547	66.39
20.1-30 km	99.6768	15.85	517.3315	82.24
30.1-50 km	69.9995	11.13	587.331	93.37
50+ km	39.29715	6.25	626.6282	99.61
geen antwoord	2.440788	0.39	629.069	100.00

The situation that is illustrated and the map that is shown in the fictive situation is based on the Flemish region Scheldeland. The A-location (home) on the map indicates Wetteren and the B-location (work) indicates Dendermonde. To make the situation unclear for respondents, the map is flipped vertically.

Figure 6: Vertically flipped map from the region Dendermonde-Wetteren

3.2.2.2 Factor and factor levels of personal travel advice

People make choices based on their preferences and limitations. There is a lot of variability between people. In this survey, respondents have to choose from several alternative travel advices. The three factors that will be examined are motivational information, travel route information and information about how to change behaviour by means of a behavioural change plan.

Each of these factors can have different factor levels. These factor levels are described in a qualitative way, from basic information to specific information. 4 factor levels are used.

Factor level 0 contains a statement, factor level 1 contains brief information, factor level 2 contains extensive information and factor level 3 contains extensive information and a visualisation.

Below, an overview of all factor levels is presented.

Table 4: Factor levels of motivational information

<table>
<tr><th colspan="2">Factor 1: Motivational information</th></tr>
<tr><td>Level 0</td><td>“Duurzame alternatieven gebruiken voor woon-werkverkeer is financieel voordeliger en milieuvriendelijker en gezonder dan de wagen. Op het openbaar vervoer kan je dikwijls andere nuttige dingen doen.”</td></tr>
<tr><td>Level 1</td><td>
<table>
<tr><th></th><th>Fietsen</th><th>Bus</th><th>Trein</th><th>Personenwagen</th></tr>
<tr><td>Tijd (in minuten)</td><td>40</td><td>45</td><td>35</td><td>22</td></tr>
<tr><td>Kostprijs (in EUR)</td><td>+ 5</td><td>0</td><td>+1,2</td><td>- 7</td></tr>
<tr><td>Gezondheid (in calorieën)
Berekend op gem. snelheden en persoon met gem. BMI</td><td>250</td><td>60</td><td>60</td><td>10</td></tr>
<tr><td>Milieu (in CO_2 g)
Berekend op gem. bezetting van voertuigen</td><td>0</td><td>2000</td><td>650</td><td>3000 (diesel)
2800 (benzine)</td></tr>
</table>
</td></tr>
<tr><td>Level 2</td><td>Maandelijks (berekend op 20 werkdagen) heeft u 249 EUR financieel voordeel als u uw wagen thuis laat en met de fiets naar het werk gaat, want de wagen kost u 144 EUR per maand terwijl u met de fiets 105 EUR kan verdienen. Maandelijks stoot u 61kg CO2 uit. Dit komt overeen met de CO2-uitstoot van een vliegtuigreis heen en terug naar Brazilië. Door te carpoolen wordt de uitstoot per persoon kleiner naarmate je met meer personen in de wagen zit. Met de bus zou daalt uw CO2-uistoot met 1/3, de uitstoot per persoon is bij de bus 40kg op maandbasis. De trein is in uw geval bijna 5 keer zo duurzaam als met de wagen (slechts 13kg CO2 op maandbasis). Te voet of met de fiets stoot u geen uitlaatgassen uiten is dus de beste optie voor het milieu. Door met de fiets naar het werk te gaan verbruik je gemiddeld 280kcal. Normaal gezien heb je ongeveer 2000kcal per dag nodig, wie veel beweegt kan al eens een taartje meer eten.</td></tr>
<tr><td>Level 3</td><td>Text level 2 + following images
 
 
</td></tr>
</table>

Table 5: Factor levels of travel route information

Factor 2: Travel route information	
Level 0	Via google maps, routenet of via de fietsknooppunten vindt u gauw een aangename fietsroute, voor de treinuren kijkt u best op www.nmbs.be en voor de bus op www.delijn.be
Level 1	**Trein**: Neem om 7:58u de trein in station A tot het station B, aankomst om 8:18u **Bus**: Neem om 7:45u de bus aan de halte A tot aan halte B, aankomst om 8:15u **Fiets**: Er is een lange-afstandsfietspad deels langs de spoorweg en deels langs de rivier, u kan deze volgen tot in stad B. Deze fietsweg is quasi volledig autovrij.
Level 2	**Trein**: Om 7:58u vertrekt een trein in station A met aankomst om 8:18u in station B. Het station ligt slechts op 2 kilometer van uw woning. U neemt best de fiets en rijdt via de brug over de rivier naar het station. Na je treinreis moet je alsnog 1,5 kilometer afleggen door het centrum van stad B. Er zijn blue-bikes aan het station beschikbaar. **Bus**: Stap uw straat uit richting het centrum. op het einde van de straat is halte A. Daar neemt u om 7:45u de bus tot aan halte B, aankomst om 8:15u. halte B is vlakbij uw werk gelegen. U hoeft slechts enkele minuten te stappen. **Fiets**: Rijdt naar het lange-afstandsfietspad langs de rivier, u kan deze volgen tot in stad B, neem de overzetboot of brug en rijdt verder tot uw werkplaats. Deze fietsweg is quasi volledig autovrij.
Level 3	Text level 2 + following map

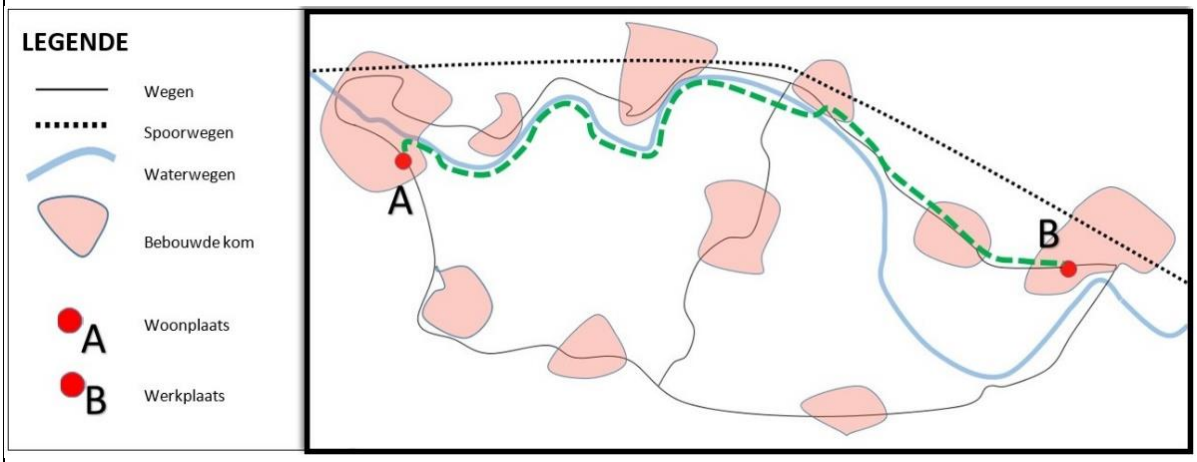


Table 6: Factor levels of behavioural change plan

Factor 3: Behavioural change plan	
Level 0	verplaatsingsgedrag veranderen begint bij het ontwikkelen van een intentie om het huidige verplaatsingsgedrag te wijzigen.
Level 1	Leg uw lat niet te hoog. Als iedereen kiest om slechts één dag in de week duurzaam te pendelen, dan zullen de files met 20% krimpen. Op zich is dit al een mooi resultaat. Schrijf je in op het online spel "van 5 naar 4" en peil uzelf ten opzichte van andere collega's.
Level 2	Als je je verplaatsingsgedrag naar het werk wilt veranderen is het belangrijk een realistisch doel voor ogen te hebben. Tracht uw doel na te streven. U kan uzelf belonen door het aanvragen van een fietsvergoeding. Dit doe je via het intranet van uw werkgever. Bovendien kan u zich ook inschrijven voor het project bike to work. bike to work houdt uw fietspunten bij en helpt u fietsen op een aangename manier vol te houden. Het is bovendien aangenamer met collega's samen te fietsen, zoek metgezellen en deel uw fietsplezier.
Level 3	Text level 2 + following scheme Stap 1 •Ontwikkel een intentie om uw verplaatsingsgedrag te wijzigen Stap 2 •Ontwikkel een haalbare doelstelling naargelang uw persoonlijke voorkeur. Stap 3 •Schrijf u in op www.van5naar4.be of www.biketowork.be om kans te maken op mooie prijzen. Spreek met collega's af om samen te pendelen. Ook dit kan u motiveren. Stap 4 •Tracht uw eigen doelstelling na te komen door duurzaam naar het werk te pendelen.

3.2.2.3 Treatment combinations

The next step is to create different treatment combinations based on the defined factors and factor levels. There are 3 factors and 4 factor levels so this means that there are $4^3 = 64$ possible travel advices. Because this amount is not extensive, in this study a full factorial design is created. On the next page the full factorial design used in this study is presented.

		A1	A2	A3		A1	A2	A3
1.1	P31	1	3	2	P10	0	2	1
1.2	P29	1	3	0	P21	1	1	0
1.3	P12	0	2	3	P43	2	2	2
1.4	P27	1	2	2	P62	3	3	1
2.1	P11	0	2	2	P56	3	1	3
2.2	P14	0	3	1	P17	1	0	0
2.3	P46	2	3	1	P64	3	3	3
2.4	P35	2	0	2	P50	3	0	1
3.1	P19	1	0	2	P8	0	1	3
3.2	P49	3	0	0	P63	3	3	2
3.3	P58	3	2	1	P37	2	1	0
3.4	P23	1	1	2	P26	1	2	1
4.1	P3	0	0	2	P52	3	0	3
4.2	P57	3	2	0	P42	2	2	1
4.3	P5	0	1	0	P39	2	1	2
4.4	P53	3	1	0	P47	2	3	2
5.1	P16	0	3	3	P4	0	0	3
5.2	P51	3	0	2	P32	1	3	3
5.3	P28	1	2	3	P61	3	3	0
5.4	P36	2	0	3	P22	1	1	1
6.1	P1	0	0	0	P55	3	1	2
6.2	P25	1	2	0	P34	2	0	1
6.3	P33	2	0	0	P20	1	0	3
6.4	P40	2	1	3	P6	0	1	1
7.1	P7	0	1	2	P48	2	3	3
7.2	P9	0	2	0	P2	0	0	1
7.3	P30	1	3	1	P24	1	1	3
7.4	P45	2	3	0	P13	0	3	0
8.1	P18	1	0	1	P15	0	3	2
8.2	P38	2	1	1	P59	3	2	2
8.3	P54	3	1	1	P60	3	2	3
8.4	P44	2	2	3	P41	2	2	0

Table 7: Full factorial design

These factors were randomly assigned in this full factorial design with the use of a graphical calculator. After assigning all the profiles, a check-up was carried out to look if the design was orthogonal.

This means that it is checked whether the attribute levels within a profile are independent. Normally an orthogonal design can be exported out of statistical software such as SAS. Since this software was not available on my personal computer yet. The check-up was carried out manually. Only a few of the randomly generated profiles are similar. There is a small overlap These are marked in table 7.

In this design, it remains possible to estimate the main effects of the explanatory variables on the dependent variable. Main effects are the effects of a factor, individually, on the response (Street & Burgess, 2007). In this survey for example, we want to find out what the effect is of giving concrete information about motivational factors on how people evaluate the personal travel advice.

Besides main effects , there are also interaction effects. These interaction effects are combinations of attributes that have an impact on the evaluation of the choice behavior. In this study, the interaction effects are ignored , but it could hypothetically be that people only choose a particular travel advice when there is detailed information about travel route and concrete information about motivational factors.

3.2.2.4 Blocking

In this surevy, a full factorial design is used which generates 32 choice sets. This is too much for one respondent to handle in one questionnaire, so we break the choice sets into 8 blocks.

It is the intention that each respondent only have to evaluate one block. This technique is called blocking (Kuhfeld, 2005). To assign the blocks to the respondents, the month of birth is used, assuming that the month of birth does not have an effect on people's choice behaviour. The composition of the blocks is presented below. The month May was initially assigned to block 3, but because of a higher number of respondents, it was re-assigned to block 4. Due to a programming error while processing this modification, choice set 4.4 only has 15 respondents instead of 24. A rule of thumb is that a representative sample needs to include 30 respondents. The number of respondents stagnated and collecting even more respondents would require an enormous amount of effort and time, which was limited in this case.

Block	Month of birth	Number of respondents
1	January + Februay	30
2	March + October	27
3	April + May	31
4	June + May	24 (choice set 4.4, only has 15 respondents)
5	July	24
6	August	18
7	September	21
8	November + December	29

Table 8: Blocking technique

3.2.2.5 Characteristics of the respondent

Based on the conceptual framework of Bamberg, Fujii, Friman, & Gärling (2011) relating commuters' mode choice in the previous chapter, questions about the characteristics of the person are formulated. Besides the characteristics of the personal travel advice, these person-related characteristics might have an influence on the choice that respondents make in the stated preference survey. The questionnaire itself can be found in appendix 1.

The questionnaire starts with some questions about the socio-demographic context of the respondent. Some questions will be asked about gender, age, education, employment status, relational status, education and employment status of the partner and the number and age of in-house children. These are easy questions as a starter for preparing the respondent for what comes next.

Then, the respondents will be questioned about their current travel behaviour. Only the main transport mode is taken into account in this survey. The main question is attended by some more specific questions about the transport mode use during the past month.

Third, it is good to know something about the objective environment, namely the home address, the work address and the possession of different transport modes. As people has its own perception of this objective environment, it is necessary to examine this perception by asking questions about the availability of transport modes, the perceived travel time of this transport modes and the perceived distance to the nearest relevant bus stop or railway station from home.

Before giving personal travel advice it is interesting to ask whether the respondents are familiar with tax benefits in favour of alternative transport modes such as cycle compensation or reimbursement of public transport tickets. Next the respondents are questioned about their knowledge about and their use of existing route planning applications on the internet.

3.2.3 Binomial logit model

There exist a lot of discrete choice models (Ben-Akiva & Lerman, 1985). For example a generalized logit model is used to investigate the relationship between the choice of travel advice and personal characteristics, and a conditional logit model to investigate how motivational information affects the choice. To study how the choice depends on both the characteristics of the travel advice and the individual characteristics, a mixed model that incorporates both types of variables need to be used. (So & Kuhfeld, 1995)

In this stated preference study, respondents are asked to make a choice between two different personal travel advices. The choice of the person can depend on the characteristics of the travel advice, but also upon the characteristics of the individual. Therefore a mixed logit model will be used.

4 Data processing

In this chapter, the process from collecting data to data-cleaning and data-analysis will be explained. Also a thorough sample description is given in the third part of this chapter.

4.1 Collection of the data

For this research, 168 individuals were contacted personally through e-mail with an invitation to participate in the internet survey. These persons were requested to involve themselves within their network of friends and family to gather new respondents for the survey. This method is called snowball sampling. In addition, a call for participation to the internet survey was launched on social media websites facebook and 9 lives.

Due to the use of these sampling techniques, it is impossible to trace how many people ultimately received an invitation to participate, so the actual response rate is unknown.

The data for this research was collected from 17th July 2014 to 10th August 2014.

4.2 Sample description

The 204 persons who completed the survey are the sample of this survey. Below, the sample characteristics are presented.

4.2.1 Age

The youngest respondent is 20 years old, the oldest 62 years old. Below, the distribution based on the year of birth is shown. A peak between 1990 and 1986 can be observed.

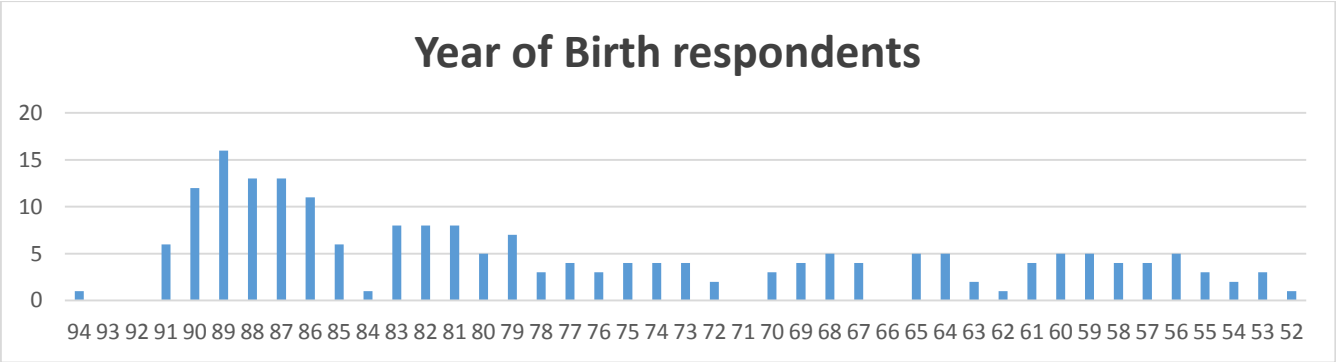


Table 9: Distribution of the respondents according to year of birth

The age of the respondents is compared to the age of the active population in Flanders in 2013 in the pie chart below. A more or less similar distribution is presented.

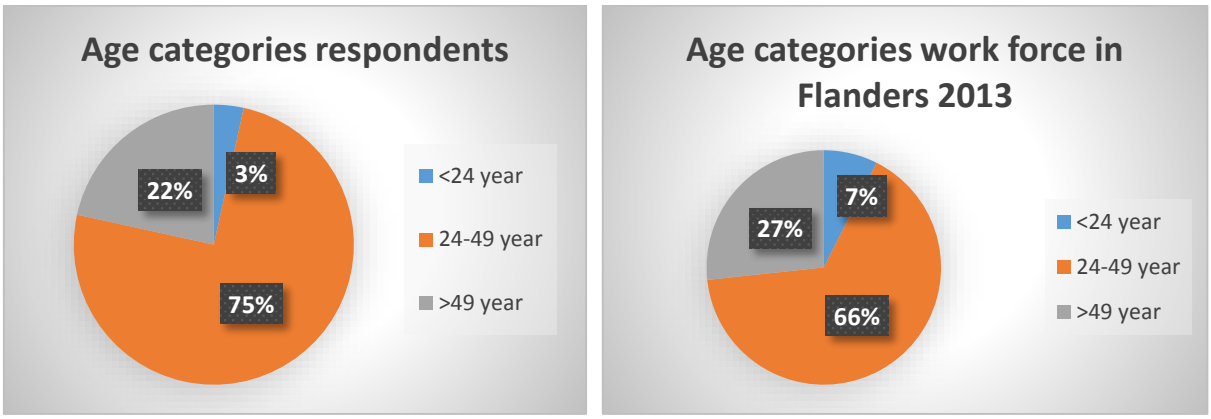


Figure 7: Age categories of respondents vs. work force in Flanders 2013 (FOD Economie, 2014)

4.2.2 Gender

The distribution based on gender is proportional and very similar to the gender distribution of the active population in Flanders. 47% of the respondents are women and 53% of the respondents are men.

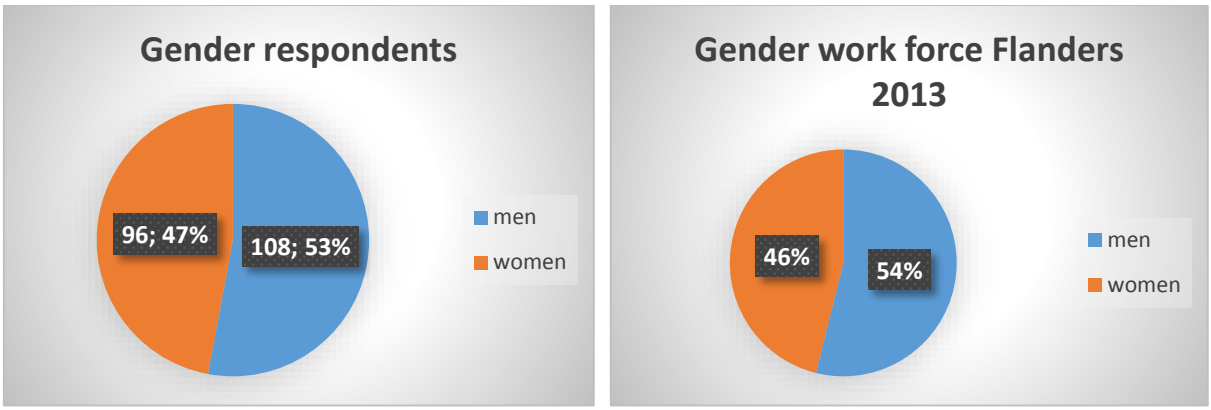


Figure 8: Gender distribution of respondents vs. work force in Flanders 2013 (FOD Economie, 2014)

4.2.3 Family structure

On the pie chart below, respondents are devided over a number of categories. In the categories, a distinction is made between being single or living together with a partner or with parents, having children or not.

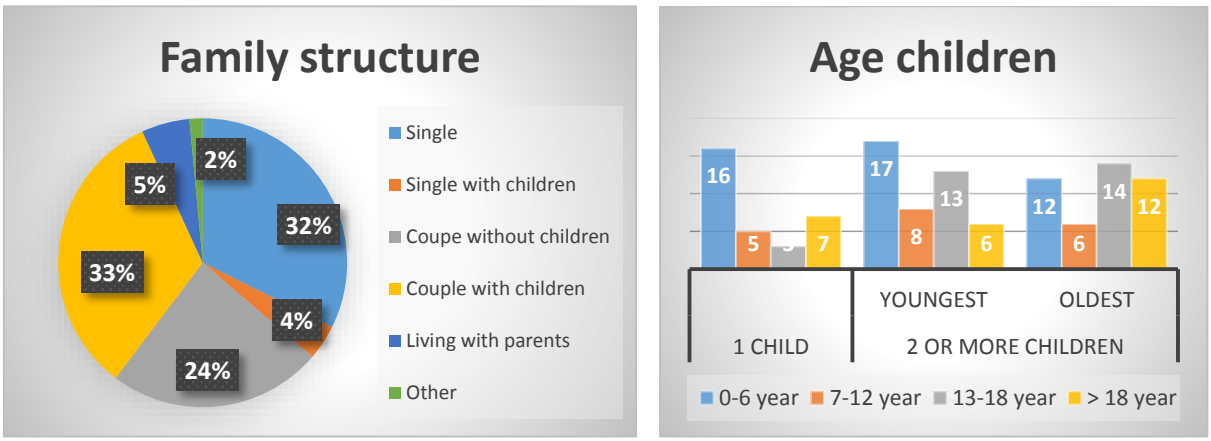


Figure 9: Family structure and age of the children of respondents

75 respondents (37% of all respondents) need to take care of children. 31 respondents need to take care of 1 child. The other 44 respondents have 2 or more children to look after. In figure above, you can see an overview of how old these children are.

4.2.4 Education

The education level of the respondents is very similar to the education level of their partners. The education level in Belgium looks very different. Less people (in percentage) do have a higher education.

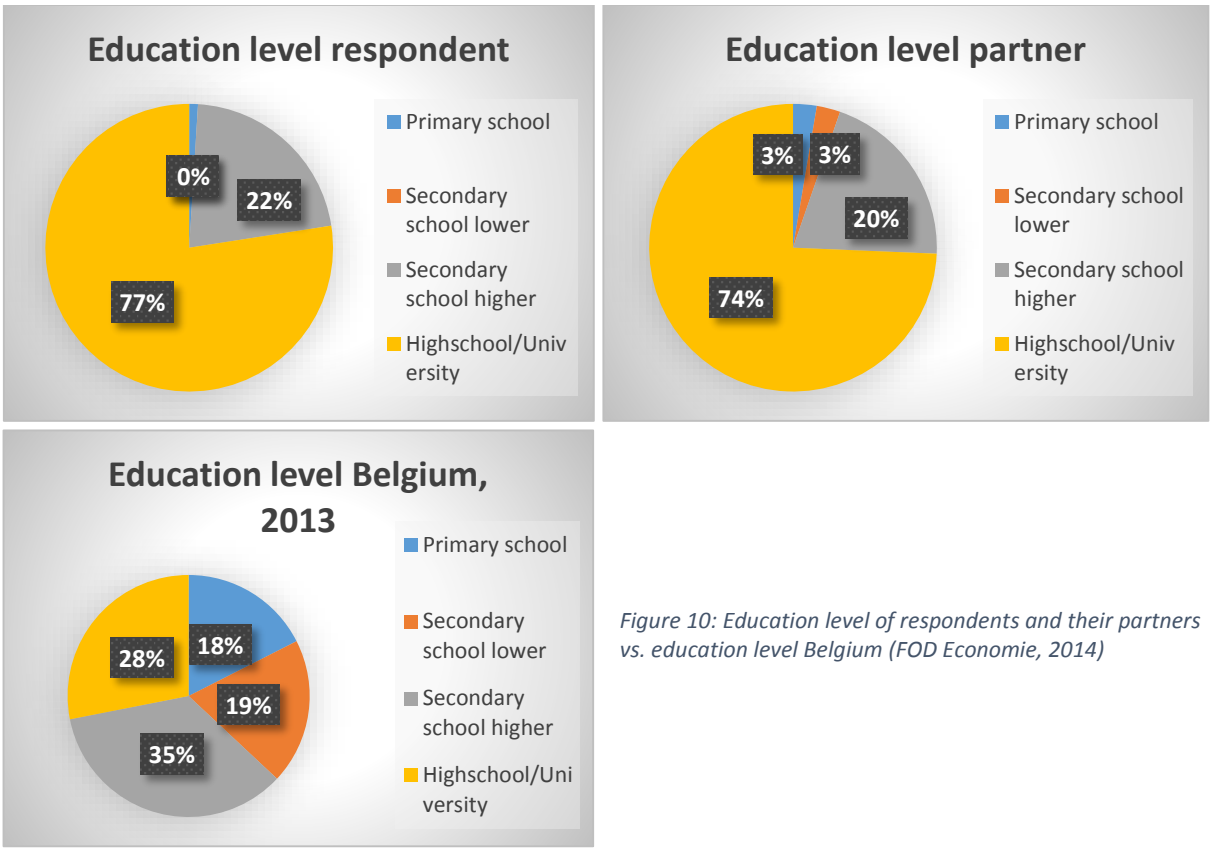


Figure 10: Education level of respondents and their partners vs. education level Belgium (FOD Economie, 2014)

4.2.5 Employment

While 79% of the respondents work full-time. Partners work a little bit less on a full-time basis, 64%.

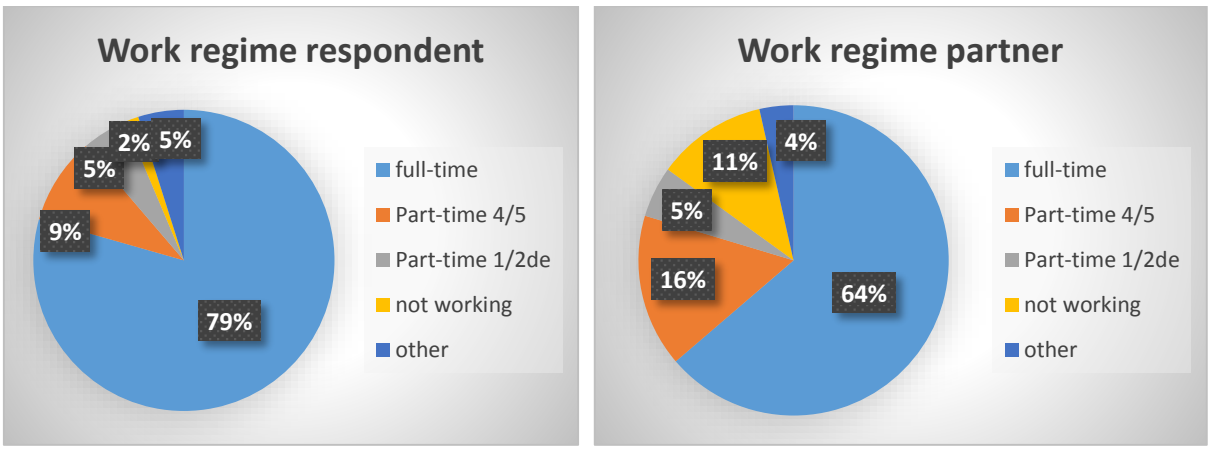


Figure 11: work regime of respondents and their partners

4.2.6 Current travel behaviour

The respondents were asked how many times they use different travel modes. Car and bicycle are most common used. Train is more popular than the bus. Only a small part of the respondents goes by foot or with other transport modes for example tram, metro or motorcycle. Off course is this answer related to the commuter distance and public transport accesibility.

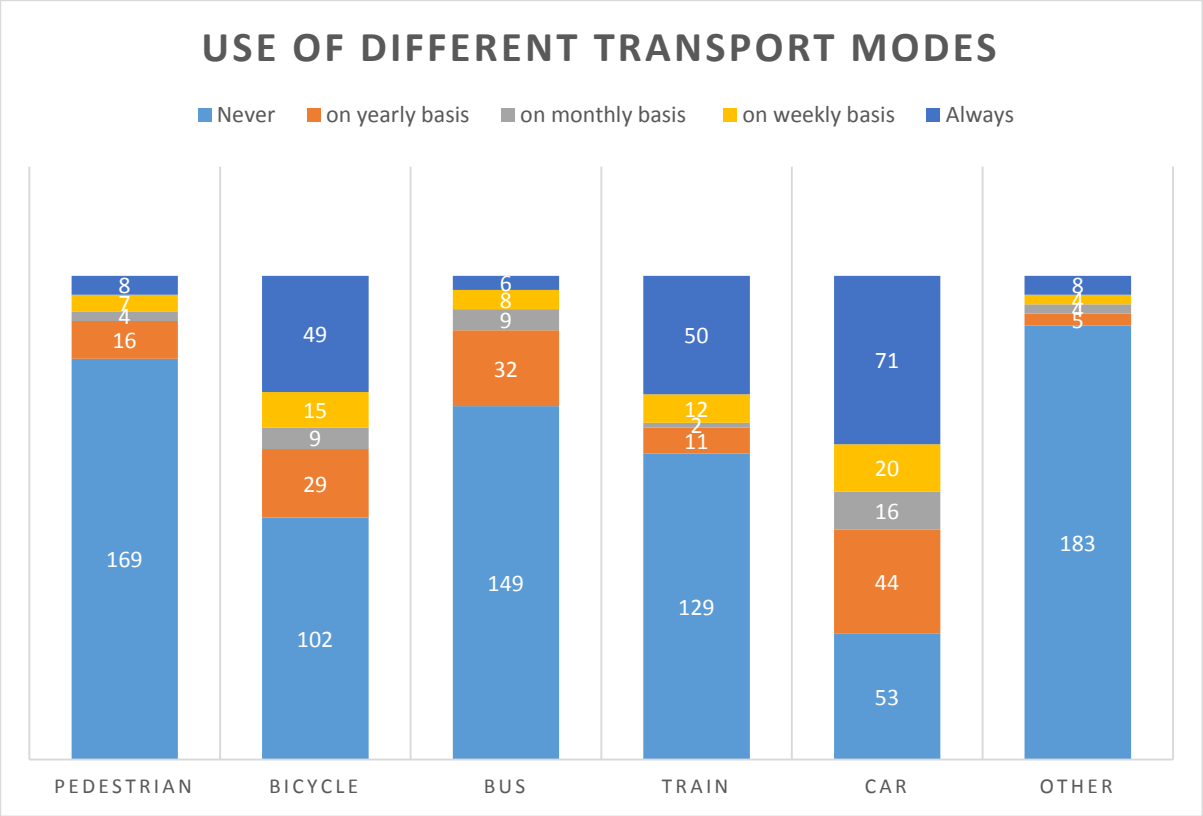


Figure 12: Transport mode use of respondents

The modal split of the respondents is shown below. It is also shown according to commuter distance.

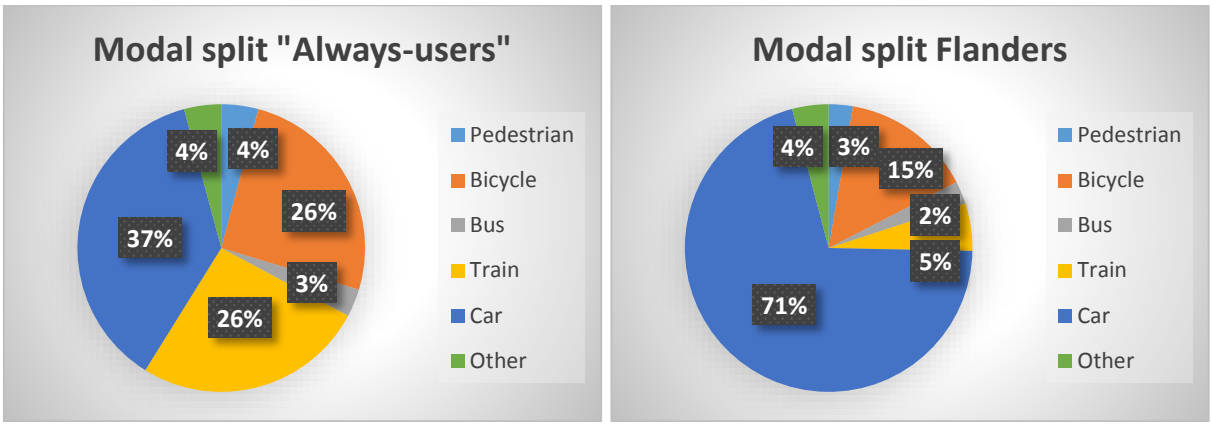


Figure 13: Modal split of respondents vs. modal split Flanders

The proportion of car-users in the sample of this survey is much lower than the mean number of car-users in Flanders. Instead more people from the sample group uses the bicycle or the train. This might be due to the data collection technique use. A lot of people who work in the mobility sector participated in this research. These people are aware of mobility problems and have a more durable transport mode choice yet. Also 78 respondents work in Brussels, Antwerp or Ghent. These are the 3 biggest cities with a good public transport accessibility.

First, as we look at the commuter distance of the respondents in the table below, we see that there are 55 persons, or almost 27% of the respondents, who live less than 5 km from their work space. For this distance, the bicycle is designated. The median of this distribution is 13,8 km. A little more than the 12 kilometers that is used in this survey.

Table 10: Distribution of the respondents according to commuter distance

	Frequency	percent	cumulative percent
0-1km	4	1,9607	1,9607
1,1-2,5km	15	7,3529	9,3136
2,6-5km	36	17,6470	26,9607
5,1-7,5km	22	10,7843	37,7450
7,6-10km	13	6,3725	44,1176
10,1-15km	17	8,3333	52,4509
15,1-20km	9	4,4117	56,8627
20,1-30km	25	12,2549	69,1176
30,1-50km	28	13,7255	82,8431
50+km	35	17,1568	100

The modal split of the respondents with a commuter distance lower or equal to 5 kilometers is shown below. Again, a comparance with the resulst of OVG Flanders (Vlaamse Overheid, 2013) is made. As I indicated earlier, the respondents do have already a more durable modal behaviour than the common Fleming.

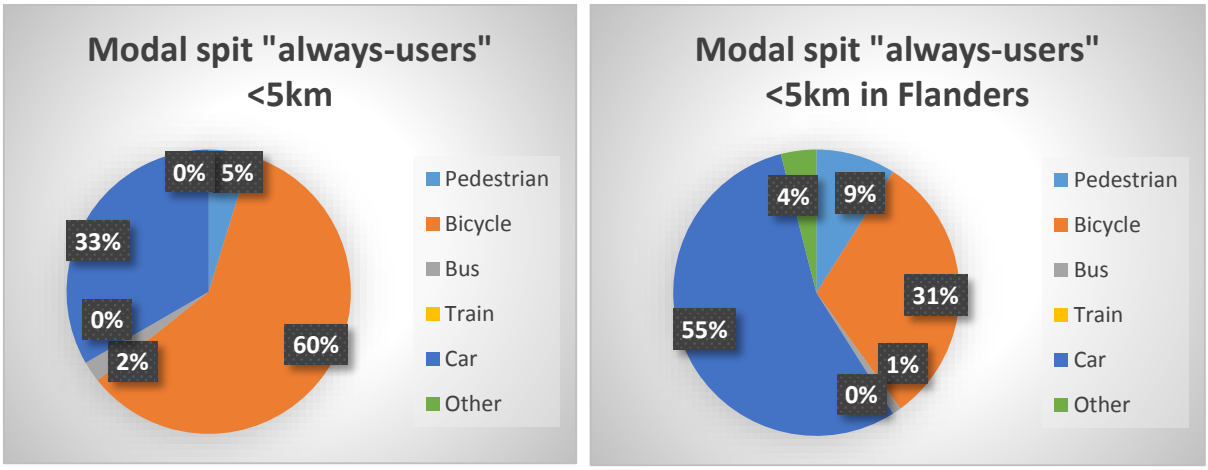


Figure 14: Modal split of respondents vs. modal split Flanders with commuter distance <5km

4.2.7 Possession and availability of vehicles

Below a table is shown where you can see the distribution of the respondents according to vehicle possession. The comparision with possession of cars and bicycles in Flanders is made. The sample has more cars and bicycles than common people in Flanders.

Table 11: Distribution of the respondents according to vehicle possession

	Car	%Car	%Car Flanders	Bicycle	%Bicycle	%Bicycle Flanders	Motorbike	other
0	21	10%	16%	11	5%	18%	175	197
1	98	48%	53%	44	22%	20%	25	2
2	69	34%	28%	46	23%	24%	3	2
3	16	8%	2%	39	19%	14%	1	2
4	0	0	1%	32	16%	12%	0	0
>5	0	0	0%	32	16%	12%	0	0

If we look at the availability of the transport modes, we see that some respondents does not always have a car or a bicycle available.

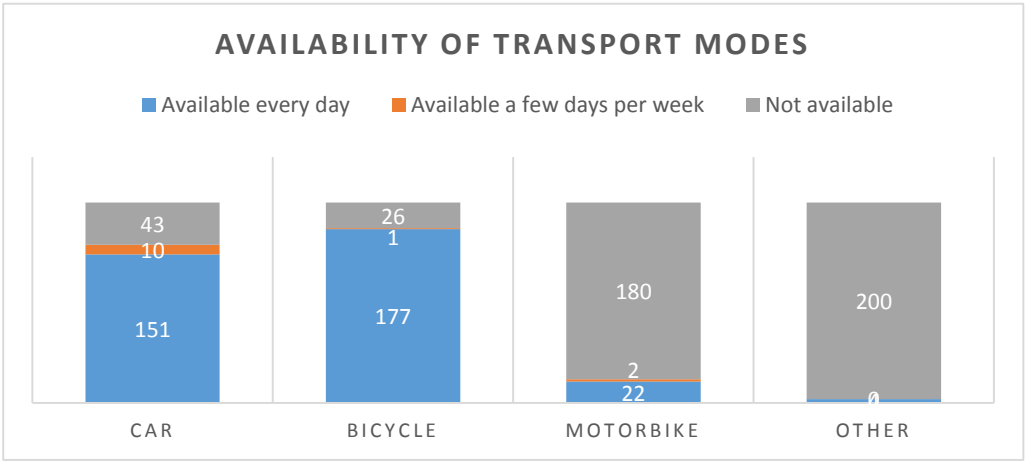


Figure 15: Availability of transport modes for respondents

4.2.8 Knowledge

The respondents were asked about their knowledge about tax benefits and route planners which are very important aspects of a personal travel advice.

The results below show that 6% of the respondents doesn't know any tax benefit related to commuter transport. 35% has little to moderate knowledge about tax benefits. 59% has good to excellent knowledge about tax benefits.

The best known tax benefit is the cycling allowance. This is a compensation that an employer pays to their employees per kilometre driven by bicycle. Repayment of public transport costs by the employer or a company car/bike is also well known.

The travel allowance is a new concept in Flanders where the employee gets a fixed amount of money for his commuter transport. This is not well know. Other benefits such as a fuel card or a parking subscription were also mentioned by some respondents. However, these benefits encourage car use even more.

We can conclude there is a small knowledge gap according to tax benefits.

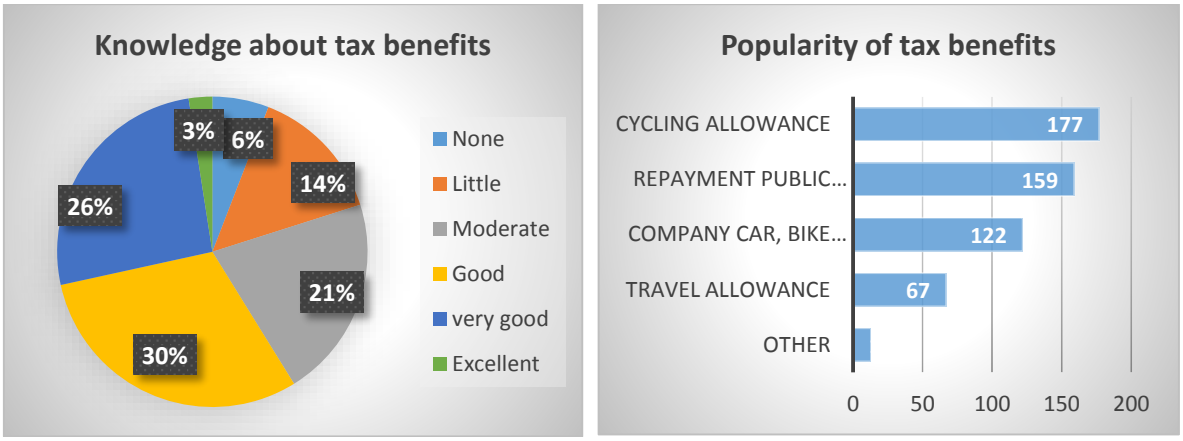


Figure 16: Respondents' knowledge about tax benefis and popularity of tax benefits

The results according to the knowledge of route planners are better than for tax benefits. We can see that only 14% has little to moderate knowledge about route planners and 86% has good to excellent knowledge about route planners.

The most known route planner is google maps and also the route planners of local public transport companies are well known. Then, a lot of other route planners exist such as routenet, mappy, viamichelin,…

We can conclude that there are many route planners available and that respondents know them pretty well. Google maps is the best known which also integrates travel information of local public transport companies.

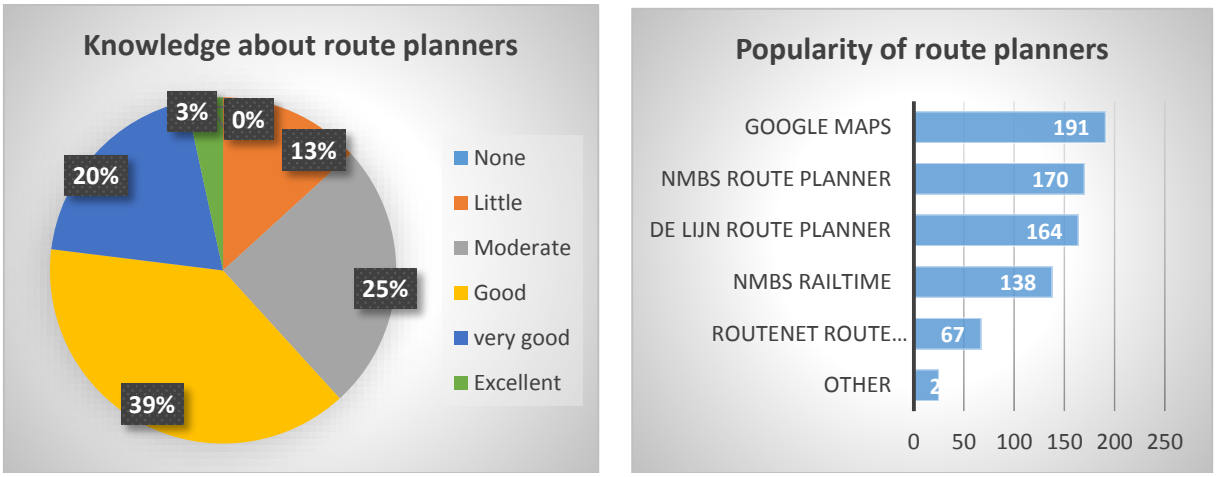


Figure 17: Respondents' knowledge about route planners and popularity of route planners

4.3 Data-Cleaning

In total 234 respondents were gathered. However, the raw data cannot be used for the next step, data analysis. There is an intensive process preceded to clean all the data.

First, some people started the questionnaire but dit not finish it. All the respondents who dit not finish the survey are deleted in the database. From the 234 initial respondents, 204 completed the survey successfully.

Next, some operations are performed on the data. For example year of birth was converted to the age of the respondent and the home address and work address of the respondent was used to calculate the real distance to work and also a theoretical time to work for each respondent.

To run the binomial logit models in SAS, data must include the values of the factor levels of all chosen and not chosen travel advices. These values were added manually on the basis of table 4. The values for the choice need to be binary, so these values are changed into 0 and 1 for respectively not chosen and chosen alternative in the choice experiment.

Because the attributes of this survey are qualitative, there is need to create dummy variables that represent the factor levels.

In this study, simple coding is used to create dummy variables. This means that we wil compare each level of the variable with a reference level. Here, the reference level will be level 0, which means giving just a statement in the personal travel advice.

Factor level	Dummy 1	Dummy 2	Dummy 3
Level 0: statement **= reference level**	0	0	0
Level 1: brief information	1	0	0
Level 2: extensive information	0	1	0
Level 3: extensive information + visualisation	0	0	1

Table 12: Simple coding technique for creating dummy variables

4.4 Data-analysis

In the questionnaire people had to make a few choices between two different personal travel advices. The question that respondents need to answer was: “which one of the two travel advices convinces you the most to choose for alternative transport modes for commuter traffic?”.

The data of the stated choice experiment, with 1614 records, is analysed with SAS statistical software where the results are explained in the following sections of this dissertation.

4.4.1 Importance of the techniques

Each personal travel advice, which respondents had to choose from, contains all the techniques to be investigated in this study but in a different way (see chapter 3.2.2.2 in this study). To verify which of these techniques are effective in peoples choice, a binomial logit model is used in SAS with choice as the dependent variable and the dummy variables for motivational factors, route information and behavioural change plan as explanatory variables. The choice in this research is the personal travel advice which motivates sustainable transport modes the most according to the respondent. Below, the results for this model are shown. Significant p-values (<0.05) are indicated in bold. A p-value lower than 0.05 means that the explanatory variable does have a significant effect on people’s choice with a confidence interval of 95%.

Analysis of Maximum Likelihood Estimates					
Parameter	**DF**	**Estimate**	**Standard Error**	**Chi-Square**	**Pr > ChiSq**
Intercept	1	-1.1270	0.1725	42.6729	<.0001
dummy1_motivation	1	0.5683	0.1453	15.2922	**<.0001**
dummy2_motivation	1	0.5062	0.1479	11.7222	**0.0006**
dummy3_motivation	1	0.5181	0.1449	12.7873	**0.0003**
dummy1_route	1	0.1556	0.1476	1.1126	0.2915
dummy2_route	1	0.5659	0.1435	15.5509	**<.0001**
dummy3_route	1	0.7936	0.1474	28.9992	**<.0001**
dummy1_behaviour	1	0.1781	0.1456	1.4950	0.2214
dummy2_behaviour	1	0.5741	0.1454	15.5852	**<.0001**
dummy3_behaviour	1	0.5659	0.1481	14.5981	**0.0001**

Table 13: Significant attributes general analysis

The logistic model is based on the function $z = \alpha + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_k X_k$ where α is a constant term, the X's are independent variables of people's choice behaviour and the βi's are regression coefficients in the model.

Except for the brief information about route and behaviour, the explanatory variables are significant. Except for this two variables we can make reliable conclusions with a confidence interval of 95%..

In this model, all the factor levels need to be compared to the reference level. The estimates are positive which means that all factor levels do have a greater influence on respondents choice than giving just a statement.

For motivation, factor level 1 has the greatest explanatory value. This means that if the motivational factors are clearly displayed in the personal travel advice, people are more about to choose for alternative transport modes for commuter traffic.

For route information, the explanatory value gets higher for every level. This means that the more information about route you give in a personal travel advice, the more people will choose for this kind of travel advice, from which they say it convinces them to choose for alternative transport modes.

At least we take a look at the significant estimates for behavioural change plan, but the estimates are more or less the same. We conclude that giving information about how to change travel behaviour is effective, but it doesn't really matter whether the travel behavioural change plan is viualised or not.

4.4.2 Individual preferences

In the next sections, the individual preferences will be analysed. Therefore, the data of the choice experiment was filtered according to specific groups of people and the binomial logit model was repeatedly applied to the filtered data.

4.4.2.1 Age

Below, 3 age categories are analysed, namely people younger than 30 years, people between 30 and 45 years old and then people older than 45 years old. The age categories are different comparing to the age categories used in the sample description because of the low representation of people younger than 24 years old. In the age categories chosen for the analyses, an acceptable number of people's choices are included in each analysis.

Analysis of Maximum Likelihood Estimates						
	Age Categories					
	-30years (n=618)		**30-45 years (n=536)**		**+ 45 years (n=460)**	
Parameter	**Estimate**	**Pr > ChiSq**	**Estimate**	**Pr > ChiSq**	**Estimate**	**Pr > ChiSq**
Intercept	-1.4093	<.0001	-1.2350	<.0001	-0.6134	0.0644
dummy1_motivation	0.8927	**0.0002**	0.4459	0.0814	0.2633	0.3448
dummy2_motivation	0.6230	**0.0078**	0.4374	0.0974	0.4151	0.1480
dummy3_motivation	0.8843	**0.0003**	0.6747	**0.0078**	-0.1720	0.5307
dummy1_route	0.0748	0.7602	0.1570	0.5385	0.3495	0.2156
dummy2_route	0.6253	**0.0084**	0.7059	**0.0052**	0.3751	0.1636
dummy3_route	0.8739	**0.0003**	0.7800	**0.0027**	0.7405	**0.0075**
dummy1_behaviour	0.4125	0.0811	0.4592	0.0715	-0.5301	0.0622
dummy2_behaviour	0.4818	**0.0423**	0.5474	**0.0296**	0.7595	**0.0073**
dummy3_behaviour	0.7263	**0.0027**	0.6361	**0.0162**	0.2374	0.3877

Table 14: Significant attributes according to age

All the significant explanatory variables, over all the age categories, are positive which means that giving only a statement is the worst way for informing people, no matter what age, about motivational factors of using durable transport modes, the route they might follow or the behavioural change they might need to undertake.

The youngest age category has the most significant explanatory values. This means that the choice of people younger than 30 years is greatly influenced by the personal travel advice given. People in their twenties prefer information about motivational factors in a structured way above the extensive explanation with visualisation or without visualisation because the explanatory variable for dummy 1 for motivation is the greatest. For the middle age class, there is only one significant variable, namely dummy 3 and this means that giving an extensive explanation with a visualisation works best for this category of people. For the people older than 45 years, there is no significant result for motivational information.

In all age categories, extensive explanation with a visualisation of the route is the highest. This means: the more route information, the better.

The extensive information about a behavioural change plan with a scheme is evaluated best by the two first age categories. For the people older than 45 years, the extensive information without visualisation has the greatest influence on choice.

4.4.2.2 Gender

In the table below, you can find the analysis results for the the binomial logit model for men and women.

Analysis of Maximum Likelihood Estimates				
	MEN (n=854)		**WOMEN (n=760)**	
Parameter	**Estimate**	**Pr > ChiSq**	**Estimate**	**Pr > ChiSq**
Intercept	-0.9832	<.0001	-1.2458	<.0001
dummy1_motivation	0.5779	**0.0046**	0.5117	**0.0152**
dummy2_motivation	0.6052	**0.0032**	0.3895	0.0698
dummy3_motivation	0.5561	**0.0057**	0.5148	**0.0147**
dummy1_route	-0.1113	0.5970	0.4135	**0.0476**
dummy2_route	0.4852	**0.0138**	0.6382	**0.0027**
dummy3_route	0.7664	**0.0002**	0.8144	**0.0001**
dummy1_behaviour	-0.0107	0.9580	0.3658	0.0867
dummy2_behaviour	0.5672	**0.0047**	0.5277	**0.0141**
dummy3_behaviour	0.3291	0.1169	0.7869	**0.0002**

Table 15: Significant attributes according to gender

Again, all the significant explanatory variables are positive which means that giving a statement is the worst way for informing men or women about motivational factors of using durable transport modes, the route they might follow or the behavioural change they might need to undertake.

For motivation, extensive information has the highest estimate for men where for women a visualisation or information presented in a table has similar estimates. This means that in comparision with the reference level, the extensive explanation without visualisation works best for men and with visualisation for women.

About route information, the results are very clear that men as well as women prefer an extensive explanation with a map where the route is shown geographically.

In the results of men, the extensive information about behavioural change is the only significant factor level. Extensive information with a visualisation about behavioural change has the greatest influence on women's travel behaviour.

4.4.2.3 Family structure

The evaluation of personal travel advice differs whether you are single, you have a partner or you live with other people together.

Analysis of Maximum Likelihood Estimates						
	Single (n=590)		**Couple (n=892)**		**Other (n=132)**	
Parameter	**Estimate**	**Pr > ChiSq**	**Estimate**	**Pr > ChiSq**	**Estimate**	**Pr > ChiSq**
Intercept	-1.3371	<.0001	-0.7949	0.0006	-2.2216	0.0005
dummy1_motivation	0.7235	**0.0034**	0.3746	0.0547	1.0073	0.0530
dummy2_motivation	0.3799	0.1176	0.4164	**0.0392**	1.5750	**0.0046**
dummy3_motivation	0.6644	**0.0064**	0.3797	**0.0499**	0.6287	0.2739
dummy1_route	0.1256	0.6152	0.0772	0.6970	0.7635	0.1658
dummy2_route	0.4490	0.0625	0.6153	**0.0015**	0.7631	0.1785
dummy3_route	0.6991	**0.0051**	0.7813	**<.0001**	1.5041	**0.0081**
dummy1_behaviour	0.3879	0.1123	-0.1052	0.5913	1.1854	**0.0396**
dummy2_behaviour	0.7343	**0.0028**	0.3735	0.0545	1.1960	**0.0318**
dummy3_behaviour	1.1010	**<.0001**	0.1896	0.3453	0.6591	0.2134

Table 16: Significant attributes according to family structure

The preference of how motivational factors is presented, is different for singles than for couples or other. Singles prefer this information in an overview while respondents living with their partner of others prefer the extensive information without pictures. The extensive information with pictures is also significant for singles and couples.

For route information, there is no difference between the subgroups. The visualised route information has always the highest explanatory value. For couples the extensive information without visualisation will also convince people most to take durable transport modes.

For couples, there are no significant factor levels for behaviour so we cannot make a conclusion for this subgroups. For singles, the extensive information with a visualisation of the behavioural change plan has the highest significant explanatory value. For respondents with another family structure the brief information as well as th extensive information will do.

4.4.2.4 Amount of children

In the suvey respondents were asked to indicate the age of their oldest child, and in case of more than one child, also the age of their youngest child. Based on this question, a devision is made of respondents having no children, one child and 2 or more children.

Analysis of Maximum Likelihood Estimates						
	Amount children					
	No children (n=1020)		**One child (n=244)**		**Two or more children (n=350)**	
Parameter	**Estimate**	**Pr > ChiSq**	**Estimate**	**Pr > ChiSq**	**Estimate**	**Pr > ChiSq**
Intercept	-1.3757	<.0001	-0.5318	0.2211	-0.8571	0.0256
dummy1_motivation	0.6321	**0.0006**	0.6106	0.0960	0.2571	0.4309
dummy2_motivation	0.5192	**0.0048**	0.4291	0.2662	0.4962	0.1439
dummy3_motivation	0.5480	**0.0028**	0.7539	**0.0423**	0.2605	0.4168
dummy1_route	0.2035	0.2801	0.2275	0.5504	-0.00883	0.9775
dummy2_route	0.6269	**0.0006**	0.4717	0.2077	0.5949	0.0542
dummy3_route	0.9883	**<.0001**	0.3324	0.3572	0.6307	0.0561
dummy1_behaviour	0.4658	**0.0119**	-0.5261	0.1661	-0.1076	0.7347
dummy2_behaviour	0.6845	**0.0002**	-0.0460	0.9024	0.7238	**0.0207**
dummy3_behaviour	0.7421	**<.0001**	-0.1404	0.7126	0.5438	0.1007

Table 17: Significant attributes according to amount of children

We see that the results for people without children is more significant than for people with children. This means that the personal travel advice doesn't have a great influence on parents' choice.

People without children they prefer brief information about motivational factors presented in a table. They like extensive route information and information about behavioural change, preferably with an illustration.

For people with one child and two or more children, there is only one parameter significant, so we cannot make many reliable conclusion. Parents with one child are significantly influenced by the extensive route information with an illustration on the map. Respondents with more than one child prefer extensive information above giving a statement about changing behaviour. The sample used for the analysises with children is smaller.

4.4.2.5 Age of children

Then, we also performed two analyses according to the age of children. One for people with children younger than 12 years and one for people with children older than 12 years.

Analysis of Maximum Likelihood Estimates				
	YOUNGER THAN 12YEARS (n=306)		**OLDER THAN 12 YEARS (n=232)**	
Parameter	**Estimate**	**Pr > ChiSq**	**Estimate**	**Pr > ChiSq**
Intercept	-1.0633	0.0065	-0.3083	0.5123
dummy1_motivation	0.4292	0.2060	0.4374	0.2670
dummy2_motivation	0.5732	0.0943	0.4296	0.3144
dummy3_motivation	0.6948	**0.0379**	0.2877	0.4592
dummy1_route	0.2225	0.5017	-0.0548	0.8864
dummy2_route	0.6732	**0.0400**	0.2279	0.5574
dummy3_route	0.8099	**0.0185**	-0.0539	0.8860
dummy1_behaviour	-0.0535	0.8728	-0.4268	0.2864
dummy2_behaviour	0.3204	0.3305	0.4616	0.2375
dummy3_behaviour	0.5779	0.0917	-0.1233	0.7611

Table 18: Significant attributes according to age of children

For people with children younger than 12 years, extensive motivational information with pictures is significant with a positive estimate. This means that a lot of information about the benefits of using alternative transport modes have an influence on the choice people make. We see also significant values for extensive route information with or without. Again, the more information given about the routes, the more people have chosen for this personal travel advice.

For people with children older than 12 years, we do not have significant results. We cannot conclude for sure that the choice of travel advice these people make is dependent on the three techniques that are investigated in this survey.

4.4.2.6 Education

The respondents are devided into two groups according to their education level. The group higher education contains the respondents who have studied in high school or university. Who didn't study in high school or university is categorized under the group lower education.

Analysis of Maximum Likelihood Estimates				
	Lower education (n=360)		**Higher education (n=1254)**	
Parameter	**Estimate**	**Pr > ChiSq**	**Estimate**	**Pr > ChiSq**
Intercept	-0.8643	0.0160	-1.2096	<.0001
dummy1_motivation	1.0161	**0.0010**	0.4468	**0.0071**
dummy2_motivation	0.9292	**0.0035**	0.3853	**0.0221**
dummy3_motivation	0.7230	**0.0187**	0.4531	**0.0062**
dummy1_route	-0.2182	0.4897	0.2648	0.1158
dummy2_route	0.0797	0.7966	0.7144	**<.0001**
dummy3_route	0.1708	0.5716	0.9967	**<.0001**
dummy1_behaviour	-0.1856	0.5540	0.2860	0.0843
dummy2_behaviour	0.6036	0.0535	0.5534	**0.0008**
dummy3_behaviour	0.2905	0.3461	0.6474	**0.0001**

Table 19: Significant attributes according to education level

The choice of people with a lower education is dependent on the motivational factors described in the personal travel advice. The information in a table is most effective. The explanatory variables for route and behaviour are not significant so we will not make conclusions based on these results.

The personal travel advice influences more the choice of higher educated respondents. All explanatory variables for motivation are significant. The extensive information with visualisation has a higher explanatory value than motivational information in a structured way and extensive information without visualisation. Respondents with higher education prefer the personal travel advice with extensive route information and preferably with accompanying map. At least, they like most the advice with a lot of information about the behavioural change plan.

4.4.2.7 Work regime

In this analysis, the distinction is made between the respondents where everybody of the household is working full-time and the respondents where at least one person of the household is working part-time. The respondents who has another family structure than single or couple are not included in this analysis, because there is no information about the work regime of their housemates or parents available.

Analysis of Maximum Likelihood Estimates				
	Full-time (n=948)		**Part-time (n=466)**	
Parameter	**Estimate**	**Pr > ChiSq**	**Estimate**	**Pr > ChiSq**
Intercept	-1.0820	<.0001	-0.8530	0.0135
dummy1_motivation	0.6366	**0.0008**	-0.1759	0.5391
dummy2_motivation	0.4618	**0.0153**	-0.2587	0.3791
dummy3_motivation	0.6513	**0.0006**	-0.0791	0.7779
dummy1_route	0.0944	0.6260	0.5415	0.0565
dummy2_route	0.4921	**0.0086**	0.8550	**0.0018**
dummy3_route	0.6084	**0.0016**	1.0730	**0.0002**
dummy1_behaviour	0.2094	0.2664	0.1138	0.6901
dummy2_behaviour	0.4666	**0.0131**	0.7647	**0.0070**
dummy3_behaviour	0.6374	**0.0011**	0.4828	0.0928

Table 20: Significant attributes according to work regime

The motivational factors in the personal travel advice only affects the choice of people who work on a full-time basis as well as their partners do. For people who work part-time and/or the partner works part-time motivational factors does not have an influence on their choice. The best way to inform full-time workers about the benefits of sustainable transport modes is to give extensive information with motivational illustrations.

For route information both subgroups have significant estimates for the information levels 2 and 3. The more information about route, the better for both groups.

For the group where everybody in the household work full-time, the extensive behaviour change plan presented in the personal travel advice is significant and even more when it is visually illustrated with a scheme. For the group where at least one of the members of the household work part-time, only information level 2 is significant which means that an extensive explanation of the behaviour change plan influences their choice.

4.4.2.8 Current travel behaviour

The way people currently commute to their work space might also have an influence on the respondents' preferences. When the respondent uses the car more than 1 time a week to go to work, then the respondent is labelled as a car user. When the car use is less than once a week, thus when the respondent uses other transport modes, the respondent is labelled as a durable transport user.

Analysis of Maximum Likelihood Estimates				
	car user (n=716)		**Durable transport user (n=898)**	
Parameter	**Estimate**	**Pr > ChiSq**	**Estimate**	**Pr > ChiSq**
Intercept	-1.1739	<.0001	-1.1207	<.0001
dummy1_motivation	0.7618	**0.0005**	0.4547	**0.0214**
dummy2_motivation	0.7898	**0.0004**	0.3039	0.1302
dummy3_motivation	0.3599	0.0993	0.6423	**0.0011**
dummy1_route	0.3743	0.0845	-0.00815	0.9682
dummy2_route	0.5496	**0.0106**	0.5891	**0.0026**
dummy3_route	0.8743	**<.0001**	0.7775	**0.0001**
dummy1_behaviour	0.1440	0.5122	0.1830	0.3523
dummy2_behaviour	0.6349	**0.0046**	0.5596	**0.0040**
dummy3_behaviour	0.2310	0.2893	0.8412	**<.0001**

Table 21: Significant attributes according to current travel behaviour

According to the analysis results, car users are more about to change their travel behaviour when extensive motivational information is given in the personal travel advice. The durable transport users prefer when there are motivational pictures as well. Also information level 1 has a greater influence than giving a statement on both car users' and durable transport users' choice.

For route information, we see a linear relationship between the significant explanatory value and the information level. This means that the more information about route you give in a personal travel advice, the more people will choose for this kind of travel advice, from which they say it convinces them to choose for alternative transport modes.

The information level 2 for behaviour has significant estimates for car users and durable transport users. This means that giving extensive information convinces people more than giving a statement. For durable transport users information level 3 is also significant and even has the greatest explanatory variable so making a visualisation for this group is a good idea.

4.4.2.9 Knowledge

In the sample description, there is a small knowledge gap according to tax benefits. Informing people about the available tax benefits in their companies or the route planers available might have an influence on the travel behaviour of employees. Therefore, the respondents are devided into subgroups according to their knowledge to see what the preferences are. Respondents with none, little or moderate knowledge are in the subgroup "bad knowledge" and respondents with good, very good and excellent knowledge are in the subgroup "good knowledge".

Analysis of Maximum Likelihood Estimates				
	Good knowledge fiscal benefits (n=952)		**Bad knowledge fiscal benefits (n=662)**	
Parameter	**Estimate**	**Pr > ChiSq**	**Estimate**	**Pr > ChiSq**
Intercept	-1.3093	<.0001	-0.8857	0.0009
dummy1_motivation	0.7665	**<.0001**	0.3234	0.1400
dummy2_motivation	0.6338	**0.0010**	0.3369	0.1456
dummy3_motivation	0.6407	**0.0007**	0.3528	0.1203
dummy1_route	0.2140	0.2629	0.0790	0.7355
dummy2_route	0.6668	**0.0004**	0.4313	0.0558
dummy3_route	0.9567	**<.0001**	0.5888	**0.0099**
dummy1_behaviour	0.2295	0.2285	0.1010	0.6573
dummy2_behaviour	0.5039	**0.0081**	0.6803	**0.0028**
dummy3_behaviour	0.5679	**0.0038**	0.5556	**0.0145**
	Good knowledge route planners (n=996)		**Bad knowledge route planners (n=618)**	
Intercept	-1.3222	<.0001	-0.7907	0.0051
dummy1_motivation	0.5993	**0.0012**	0.4986	**0.0356**
dummy2_motivation	0.5848	**0.0020**	0.3482	0.1489
dummy3_motivation	0.7642	**<.0001**	0.1291	0.5765
dummy1_route	0.0789	0.6785	0.2993	0.2071
dummy2_route	0.6304	**0.0007**	0.4931	**0.0313**
dummy3_route	1.0072	**<.0001**	0.4737	**0.0426**
dummy1_behaviour	0.2729	0.1425	-0.0213	0.9288
dummy2_behaviour	0.5754	**0.0018**	0.5742	**0.0168**
dummy3_behaviour	0.7416	**0.0001**	0.3066	0.1947

Table 22: Significant attributes according to knowledge about tax benefits and route planners

All the information levels for motivation in the subgroups with a good knowledge are significantly positive. For people with a good knowledge of fical benefits, the motivational information has most influence when it is presented in a table. People with good knowledge of route planners, prefer the extensive information with visualisation. For people with bad knowledge, there is only one significant explanatory variable, namely information presented in the subgroup people with bad knowledge about route planners.

In the previous analyses, the preference of how route information is shown was always the same, namely the more information, the better. This is so for 3 out of 4 subgroups in this analysis. In the results above, we see that for the subgroup people with a bad knowledge of route planners information level 2, instead of 3, has the greatest explanatory value. This means that the extensive route information without visualisation has greatest influence on people's choice.

For people with good knowledge about fiscal benefits and also about route planners, extensive information with an illustration of the behavioural change plan has the greatest explanatory value in this, but also information without visualisation is significantly better than giving just a statement about changing behaviour. People with bad knowledge about route planners or tax benefits prefer extensive information about behavioural change. Information level 3 is also significant in the subgroup with bad knowledge about fiscal benefits.

4.4.2.10 Future travel behaviour

Before the stated choice experiment started, the respondents were asked to imagine theirselves in a fictive situation. They were asked if they would use the car in that fictive situation or another durable transport mode. Respondents in doubt could also choose for the car but open for durable transport modes. In fact, the car users are the target group of this study because with the personal travel advice, we want to convince this group to change travel behaviour. In the analyses above, the answers of the total sample are used, because when the amount of records gets smaller, the reliability of the results will be influenced negatively.

The question of the stated preference survey is designed so that the responses of sustainable transport users are also valuable in the survey. Therefore, the decision is made to treat the car users as a sub group in this study.

Analysis of Maximum Likelihood Estimates						
	Car user (n=252)		**Car user open for change (n=580)**		**Durable transport user (n=782)**	
Parameter	**Estimate**	**Pr > ChiSq**	**Estimate**	**Pr > ChiSq**	**Estimate**	**Pr > ChiSq**
Intercept	-1.1175	0.0115	-0.8609	0.0023	-1.4013	<.0001
dummy1_motivation	0.4170	0.2634	0.8175	**0.0007**	0.4378	**0.0402**
dummy2_motivation	0.6759	0.0799	0.3298	0.1785	0.6153	**0.0046**
dummy3_motivation	0.3887	0.2872	0.6040	**0.0125**	0.5109	**0.0165**
dummy1_route	0.4298	0.2382	0.3583	0.1412	-0.0953	0.6675
dummy2_route	0.7334	**0.0437**	0.3341	0.1571	0.7177	**0.0008**
dummy3_route	0.7630	**0.0418**	0.5698	**0.0187**	0.9963	**<.0001**
dummy1_behaviour	0.1482	0.6939	0.1061	0.6616	0.2860	0.1815
dummy2_behaviour	0.6390	0.0934	-0.0525	0.8276	1.0997	**<.0001**
dummy3_behaviour	0.2556	0.5015	0.3285	0.1778	0.9004	**<.0001**

Table 23: Significant attributes according to future travel behaviour

The analysis results for durable transport users have a lot of significant values where car users have less. All the significant estimates are positive which means that all the other factor levels persuade respondens more than the reference level which just gives a statement about motivational factors, route or the behaviour change plan.

Car users open for change prefer information about motivational factors in a structured way above the extensive explanation with visualisation because the explanatory variable for information level 1 for motivation is the greatest. For sustainable transport users, all explanatory variables for motivation are significant where the extensive information about the benefits has the greatest explanatory value. The group of devoted car users doesn't have any significant estimate for motivation so no reliable conclusions can be made.

No matter whether you are a avid car user or a sustainable transport user, the highest information level has the highest significant estimate. This means: the more route information, the better.

In the subgroup of sustainable transport users we see significant values for information levels 2 and 3. Giving an extensive explanation about behaviour change plan works best for sustainable transport users. For car users, there is no significant result for behaviour .

5 Findings

The fifth and final part of this report discusses the conclusions and policy advice. Recommendations for further research are also made.

5.1 Conclusion

The allocation of the effectiveness of personal travel advice is very complex to examine because there is a multitude of factors that might have an influence on people's choice. With the stated preference method, the external factors were controlled in the fictive scenario.

In the survey, 3 methods of giving personal travel advice, to convince people to use sustainable transport modes, were examined, namely giving information about motivational factors, giving route information and propose a plan to change travel behaviour.

In the survey, 32 unique travel advices were created where the 3 methods differ in terms of extensiveness. 4 factor levels were used where factor level 0 contains a statement, factor level 1 contains brief information, factor level 2 contains extensive information and factor level 3 contains extensive information and a visualisation. These attribute levels are qualitative and that makes the evaluation even more complicated. In the study we use factor level 0 as reference level to compare the effectiveness of other attribute levels with. In this way, an answer on the main research question "**Which technique or which combination of techniques of personalized travel planning is most effective according to the stated preference research?"** can be formulated in the next sections.

On the next page, an overview is shown of the significant explanatory variables of all analyses. For every analysis, the greatest explanatory variables for each technique is indicated in bold. When the dummy variables were not significant, we cannot make conclusions about how the information should be presented to get the highest modal shift.

Personal characteristic		Motivation factor level			Route factor level			Behaviour factor level		
		1	2	3	1	2	3	1	2	3
All respondents		**0,568**	0,506	0,518		0,566	**0,794**		**0,574**	0,566
Age	minus 30 years	**0,893**	0,623	0,884		0,625	**0,874**		0,482	**0,726**
	30-45 years			**0,675**		0,706	**0,780**		0,547	**0,636**
	plus 45 years						**0,741**		**0,760**	
Gender	men	0,578	**0,605**	0,556		0,485	**0,766**		**0,567**	
	women	0,512		**0,515**	0,414	0,638	**0,814**		0,528	**0,787**
Family structure	single	**0,724**		0,664			**0,699**		0,734	**1,101**
	couple		**0,416**	0,380		0,615	**0,781**			
	other		**1,575**				**1,504**	1,185	**1,196**	
Amount of children	no children	**0,632**	0,519	0,548		0,627	**0,988**	0,466	0,685	**0,742**
	one child			**0,754**						
	two or more								**0,724**	
Age of children	< 12 years			**0,695**		0,673	**0,810**			
	> 12 years									
Education level	Lower	**1,016**	0,929	0,723						
	Higher	0,447	0,385	**0,453**		0,714	**0,997**		0,553	**0,647**
Work regime	full time	0,637	0,462	**0,651**		0,492	**0,608**		0,467	**0,637**
	part-time					0,855	**1,073**		**0,765**	
Current travel mode	car	0,762	**0,790**			0,550	**0,874**		**0,635**	
	other	0,455		**0,642**		0,589	**0,778**		0,560	**0,841**
Knowledge about fiscal benefits	Good	**0,767**	0,634	0,641		0,667	**0,957**		0,504	**0,568**
	bad						**0,589**		**0,680**	0,556
Knowledge about route planners	good	0,599	0,585	**0,764**		0,630	**1,007**		0,575	**0,742**
	bad					**0,493**	0,474		**0,574**	
future travel mode	car					0,733	**0,763**			
	car, but maybe other	**0,818**		0,604			**0,570**			
	durable transport	0,438	**0,615**	0,511		0,718	**0,996**		**1,100**	0,900

Table 24: Significant attributes according to personal characteristics: an overview

To inform people about motivational factors, giving brief information is best according to the analysis where all respondents were included. Also in the subgroup where people indicated that they will use the car in the fictive situation, giving brief information has the greatest significant estimate. Although the explanatory values don't differ that much from each other in the general analysis. We also see that in 5 subgroups giving extensive information and in 8 other subgroups giving extensive information with visualisation is best evaluated. So for those subgroups, the information of motivational factors might be more effective as it is presented according to those factor levels.

The effectiveness of giving route information is the highest when extensive information is given about possible routes to follow by bicycle or by public transport and when there is a visualisation of the recommended route on a map. Only for one subgroup, namely people with bad knowledge about route planner, information without visualisation works best. But the general conclusion here is that the more route information, the more people will choose for sustainable transport modes.

The brief information about behavioural change plan doesn't have that much significant values. The extensive information about how to change behaviour is best in the general analysis, but also the extensive information with visualisation works good for a lot of subgroups.

Thus, according to the stated preference research, only for route information there is evidence that the more information given, the more effective the travel advice is. The most effective combination of techniques is dependent on the personal characteristics. Therefore we will advice policy makers to give personalized travel advice. An example of how to implement personal travel advice in practice is presented in the next section.

5.2 Policy advice

The project Slimweg, that provided personal travel advice in Flanders, has stopped his working in the end of 2014 for economic reasons. The taskforce and the cost for the required resources were to high to continue the project. There is no other well-known Flemish project that provides personal travel advice.

Anyhow, studies indicate that there is a positive effect on people's travel behaviour when they are involved in a personal transport planning program. The results of this survey show that people are more likely to change their travel behaviour towards sustainable transport modes when they are informed well.

Policy makers should invest in a new project that offers personal advice to employees to inform them about the benefits of using sustainable transport modes, about the nicest, safest or fastest routes. Because it is not evident to change habitual behaviour, it is recommended to implement a plan of behavioural change, maybe in combination with a tool which keeps you motivated to continue commuting with sustainable transport modes.

Instead of a setting up a new contact center where people search for the route information for every single application form, it might be better to develop an automated website with accompanying application for smartphones. Then, there is only a implementation cost and only a small cost to maintain the website/application.

The kind of personal travel advice that will be given in the website/application can be inspired on the results of this survey. Below, an example is shown where personalized travel advice is created for my own situation.

First, the website/application need to contain a section in which personal data must be completed. Information about age, gender, family structure, education, work regime, current travel behaviour and knowledge about fiscal benefits and route planners are required to create personal travel advice for a specific person.

Figure 18: personal travel information application: fill in form for personal information

Smart travel app

Personal information	Motivaional factors	Route information	Behaviour change plan

Jessie De Laender

Welcome, when you fill in the personal information below, the travel advice will be generated especially for you.

Year of birth 1989

Gender Male | Female

Family structure Single | Couple | Other

Amount of children None | One | Two or more

Went to High School or College? Yes | No

Work regime Full-time | Part-time

Current transport mode to work

By foot | cycle | Public Transport | Car

1/2

NEXT

Smart travel app

Personal information	Motivaional factors	Route information	Behaviour change plan

Jessie De Laender

We also need to know some geographical information to create route information. The more specific you are, the better the advice will be. This information will be used for no other reasons than creating personal travel advice.

Home address Zonder-Naamstraat. 9000 Gent

Employer Stadsbestuur Dendermonde

Work address Franz Courtensstraat. 9200 Dendermonde

Cycling allowance 0.20 euro/km

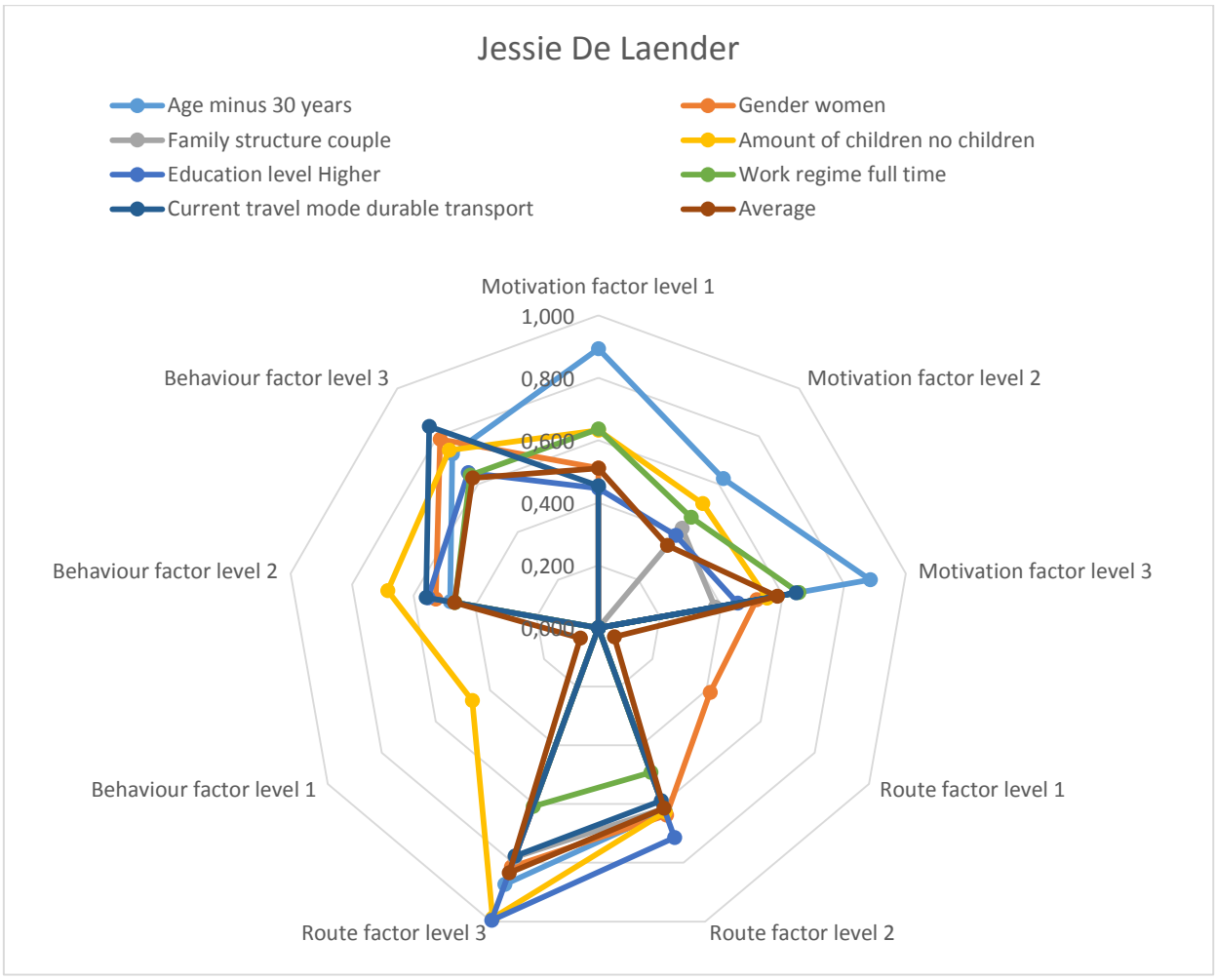
PREVIOUS

2/2

When the employee filled in all this personal information, the personal travel advice can be generated automatically depending on these personal factors.

According to the personal characteristics of the employee, the policy maker can choose how te present the information. The explanatory values for the subgroups where I belong, are shown in the radar diagram below. Also an avarage is shown. For me all information has to be shown according to factor level 3 of the survey.

Figure 19: personal preferences of myself according to the research results



In the section of motivational factors the extensive information with some images are shown. Some values in the advice are variable depending on the commuter distance and the cycle allowance given by the employer of the applicant. The software should be able to calculate this automatically.

Figure 20: personal travel information application: information about motivational factors

Smart travel app

Personal information	Motivaional factors	Route information	Behaviour change plan

Jessie De Laender

Maandelijks (berekend op 20 werkdagen) heeft u 490 EUR financieel voordeel als u uw wagen thuis laat en met de fiets naar het werk gaat, want de wagen kost u 280 EUR per maand terwijl u met de fiets 210 EUR kan verdienen. Maandelijks stoot u 120kg CO2 uit. Dit komt overeen met de CO2-uitstoot van 2 vliegtuigreizen heen en terug naar Brazilië. Door te carpoolen wordt de uitstoot per persoon kleiner naarmate je met meer personen in de wagen zit. Met de bus zou daalt uw CO2-uistoot met 1/3, de uitstoot per persoon is bij de bus 80kg op maandbasis. De trein is in uw geval bijna 5 keer zo duurzaam als met de wagen (slechts 24kg CO2 op maandbasis). Te voet of met de fiets stoot u geen uitlaatgassen uiten is dus de beste optie voor het milieu. Door met de fiets naar het werk te gaan verbruik je gemiddeld 560kcal. Normaal gezien heb je ongeveer 2000kcal per dag nodig, wie veel beweegt kan al eens een taartje meer eten.

In the section of route information, the information shown can be on the basis of google maps or excisting route planners available on the internet. An example, adapted to my own situation, is shown below.

Figure 21: personal travel information application: information about route information

Smart travel app

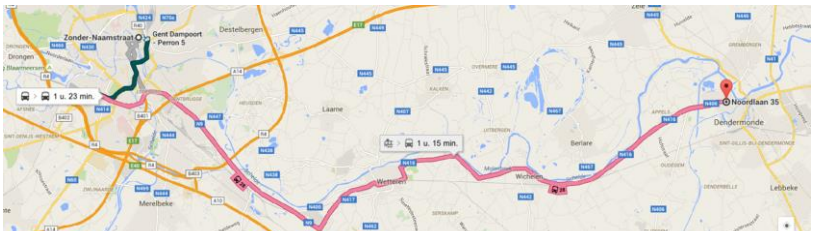
Personal information	Motivaional factors	Route information	Behaviour change plan

Jessie De Laender

Trein: Om 7:35u vertrekt een trein in station Gent-Dampoort richting Antwerpen. U wandelt of fietst naar het station, want de afstand is slechts 800 meter. U moet in Lokeren overstappen op de trein richting Brussel. U komt met deze trein aan in station Dendermonde om 8:28u. Het station ligt slechts op 2 kilometer van uw werk. Deze afstand leg je best met de fiets af. Er zijn gratis blue-bikes aan het station beschikbaar.

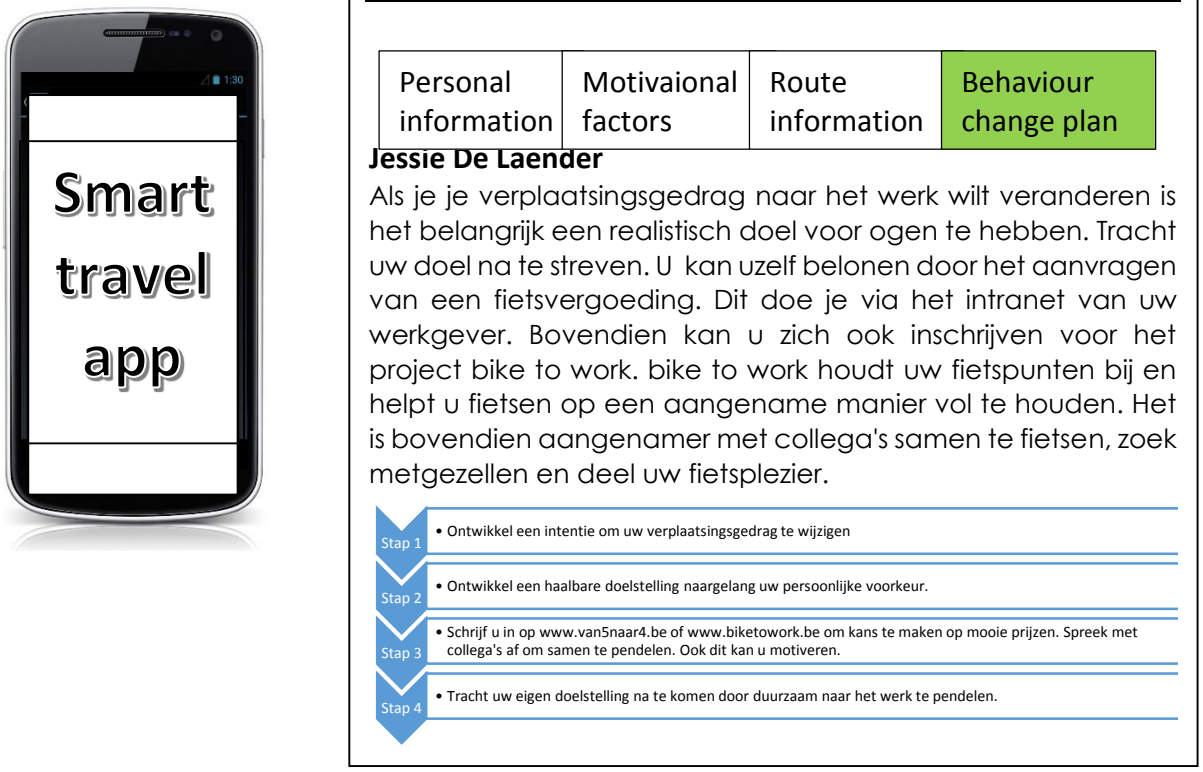
Bus: Eveneens aan station Gent-Dampoort, op busperron 4, kan u bus 78 richting Gent-Sint-Pieters nemen om 7:15. In Gent-Sint-Pieters kan u overstappen op een trein richting Dendermonde of de bus 28. Deze bus stopt aan halte Noordlaan en dit is vlakbij uw werk gelegen. U hoeft slechts enkele minuten te stappen.

Fiets: Rijdt via de R40 naar de Jan Delvinlaan en volg vanaf hier het lange-afstandsfietspad langs de Schelde. U kan deze volgen tot in Schellebelle waar u de overzetboot neemt en verder rijdt via Wichelen, Schoonaarde en Apels tot aan uw werkplaats. Deze fietstocht bedraagt 35km.



In the section of behavioural change plan the extensive information with the visualisation of the plan of approach will be shown. This part can be fixed. This information can also be ameriolated and approached individually, but therefore more research is needed to get insight in how specific types of people change their habitual travel behaviour. People with children for example didn't have much significant explanatory variables in this study which means that other (external) factors might play a role in their mode choice.

Figure 22: personal travel information application: information about behaviour change plan



5.3 Discussion

In the set-up of the research, some aspects of the study were not sufficiently thought through which in the analysis phase caused some difficulties. The questionnaire for example was designed without knowing in advance which binomial logit model would be used. This is important because it determines the formulation of the question. The statistical software SAS was only available in analysis phase. This software allows you to create a orthogonal design for the study. This difficulty was solved by checking the design manually. Luckily there were only a few randomly created profiles were similar, which means that the results are still fine.

Also for analysing the individual preferences we had to adapt the analysing approach. Normally you can find individual preferences by using the binomial logit model but the output of the analyses had no significant results so we did split up the observations according to personal characteristics. This is a statistical right way to analyse individual preferences but because of that the sample used in a specific anlysis became smaller, which means less accurate results. In analyses with small sample sizes, there are less significant results so it would be good to have a bigger sample in future research.

Besides the statistical difficulties, it was not easy to measure the right aspect of personal travel advice because there are so many influencing factors in people's transport mode choice. With the stated preference method, the intention was to control the external factors by using a fictive scenario, but even then respondents might always reflect to their own real situation or think about other factors that have an influence on their mode choice behaviour. Some respondents did reflect on the research afterwards and mentioned more motivational factors, also for not using sustainable transport modes. Some woman for example stated that the cost of using a bicycle is much higher when you take childcare costs into account. Going to work by bicycle means that the children needs to stay longer in shelters and this means that parents need to pay more for the childcare. This example indicates that there are a lot more factors that might play a role in the mode choice decision making process that were not included in this survey. And it is also not easy to know them all. It is recommended to do further reseach towards influencing factors on transport mode choice.

In the stated preference experiment, people do not make a choice about transport mode, but they were asked to make a choice between one and the same product, namely personal travel advice, with different qualitative attribute levels. That made the research quite intensive for respondents. Therefore only 4 stated preference questions were asked per respondent, otherwise more respondents would have quitted the expirement. Because of the qualitative attribute levels used in the experiment, dummy variables were used to perform the analyses. It was more difficult to interpret the results on the basis of those dummy variables.

The intention of the research was to discover how to convince employees to commute with sustainable transport modes instead of with their cars. The car users in the survey were only a small part of the sample. A sample with more car-minded people in future research is necessary to make detailed analysis on the target group of the research.

At least, it is recommended to do more research on transport mode choice of people with children. In this study, there were not that much significant explanatory which might implicate that there are other influencing factors. The commuting behaviour of this subgroup is very difficult to change because often these people make multiple stops in their way to work or in their way home but it's worth the challenge for next research.

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Appendices

1 Application form Slimweg

PERSOONLIJKE GEGEVENS

Naam: De Laender

Voornaam: Jessie

TRANSPORTMOGELIJKHEDEN

fiets

traject treinkaart van Zone Gent naar Dendermonde

ADRES VERTREK

Zonder-Naamstraat

9000 Gent

Dichtsbijzijnde zijstraat: Metselaarsstraat

ADRES BESTEMMING

Franz Courtensstraat 11

9200 Dendermonde

Dichtsbijzijnde zijstraat: Veerstraat

TIJDSTIP Heenweg

Beginuur: 08:30

Stiptheid beginuur: Ongeveer

Wens: aankomen op het werk

TIJDSTIP Terugweg

Einduur: 16:15

Stiptheid einduur: Ongeveer

Wens: vertrekken van het werk

TOELICHTING

glijdende werkuren van 7:30 tot 9:00 en van 16:00 tot 17:30

2 Questionnaire

Onderzoek persoonlijk reisadvies

Beste respondent,

Ik ben masterstudent mobiliteitswetenschappen aan de universiteit Hasselt en voer onderzoek naar de effectiviteit van persoonlijk reisadvies in het kader van woon-werkverplaatsingen. De resultaten van deze enquête zullen deel uitmaken van mijn thesis voor het behalen van mijn masterdiploma.

Deze enquête neemt ongeveer 15 minuten van uw tijd in beslag. Het is van belang dat u de gehele enquête doorloopt zodoende dat ik mijn analyses kan uitvoeren op voldoende volledig ingevulde enquêtes.

Ik dank u alvast hartelijk voor uw medewerking aan mijn onderzoek.

Vriendelijke groetjes,

Jessie De Laender

DEEL 1: Persoonsgegevens

Q1 Wat is uw geslacht?

- ❍ man (1)
- ❍ vrouw (2)

Q2 In welk jaar bent geboren?

Q3 Wat is uw hoogst behaalde diploma

- ❍ Basisonderwijs (1)
- ❍ Lager beroepsonderwijs (2)
- ❍ Middelbaar beroepsonderwijs (3)
- ❍ Hoger beroepsonderwijs, universiteit (4)

Q4 Wat is uw huidige werkregime?

- ❍ Ik werk momenteel voltijds (1)
- ❍ Ik werk momenteel 4/5 (2)
- ❍ Ik werk momenteel 1/2 (3)
- ❍ Ik werk momenteel niet (4)
- ❍ Ik heb een ander werkregime, namelijk (5) _____

Q5 Wat is de huidige samenstelling van uw huishouden?

- ❍ Alleenstaand (1)
- ❍ Alleenstaand met inwonend(e) kind(eren) (2)
- ❍ (echt)paar zonder inwonende kinderen (3)
- ❍ (echt)paar met inwonend(e) kind(eren) (4)
- ❍ Inwonend bij ouders (5)
- ❍ Anders, namelijk (6) _____

Answer If Wat is de samenstelling van uw huishouden momenteel? Alleenstaand met inwonend(e) kind(eren) Is Selected Or Wat is de samenstelling van uw huishouden momenteel? (echt)paar met inwonend(e) kind(eren) Is Selected

Q6 Tot welke leeftijdscategorie behoren uw jongste en oudste inwonend kind? Indien u maar 1 inwonend kind heeft, duidt u niet van toepassing aan voor het jongste kind.

	oudste kind (1)	jongste kind (2)
0-6 jaar (1)	❑	❑
7-12 jaar (2)	❑	❑
13-18 jaar (3)	❑	❑
> 18 jaar (4)	❑	❑
niet van toepassing (5)	❑	❑

Answer If Wat is de samenstelling van uw huishouden momenteel? (echt)paar zonder inwonende kinderen Is Selected Or Wat is de samenstelling van uw huishouden momenteel? (echt)paar met inwonend(e) kind(eren) Is Selected

Q7 Wat is het hoogst behaalde diploma van uw partner?

- ❍ Basisonderwijs (1)
- ❍ Lager beroepsonderwijs (2)
- ❍ Middelbaar beroepsonderwijs (3)
- ❍ Hoger beroepsonderwijs, universiteit (4)

Answer If Wat is de samenstelling van uw huishouden momenteel? (echt)paar zonder inwonende kinderen Is Selected Or Wat is de samenstelling van uw huishouden momenteel? (echt)paar met inwonend(e) kind(eren) Is Selected

Q8 Wat is het huidige werkregime van uw partner?

- ❍ Mijn partner werkt momenteel voltijds (1)
- ❍ Mijn partner werkt momenteel 4/5 (2)
- ❍ Mijn partner werkt momenteel 1/2 (3)
- ❍ Mijn partner werkt momenteel niet (4)
- ❍ Mijn partner heeft een ander werkregime, namelijk (5) _____

DEEL 2: Huidig verplaatsingsgedrag

Q9 Welke vervoersmiddelen gebruikt u als hoofdvervoermiddel om van/naar het werk te gaan? (hoofdvervoermiddel = vervoermiddel waarmee u de langste afstand aflegt)

	Nooit (1)	enkele keren per jaar (2)	enkele keren per maand (3)	enkele keren per week (4)	altijd (5)
te voet (1)	❍	❍	❍	❍	❍
met de fiets (2)	❍	❍	❍	❍	❍
met de bus (3)	❍	❍	❍	❍	❍
met de trein (4)	❍	❍	❍	❍	❍
met de wagen (5)	❍	❍	❍	❍	❍
met andere vervoersmiddelen, namelijk: (6)	❍	❍	❍	❍	❍

Answer If Van welke vervoersmiddelen maakt u gebruik om naar het werk te gaan? te voet - Nooit Is Not Selected

Q10 Hoe vaak ging de voorbije maand te voet (als hoofdvervoermiddel) van/naar het werk?

- ❍ Alle gewerkte dagen (1)
- ❍ ongeveer 80% van de gewerkte dagen (2)
- ❍ ongeveer 50% van de gewerkte dagen (3)
- ❍ ongeveer 20% van de gewerkte dagen (4)
- ❍ minder dan 20% van de gewerkte dagen (5)

Answer If Van welke vervoersmiddelen maakt u gebruik om naar het werk te gaan? met de fiets - Nooit Is Not Selected

Q11 Hoe vaak ging de voorbije maand met de fiets (als hoofdvervoermiddel) van/naar het werk?

- ❍ Alle gewerkte dagen (1)
- ❍ ongeveer 80% van de gewerkte dagen (2)
- ❍ ongeveer 50% van de gewerkte dagen (3)
- ❍ ongeveer 20% van de gewerkte dagen (4)
- ❍ minder dan 20% van de gewerkte dagen (5)

Answer If Van welke vervoersmiddelen maakt u gebruik om naar het werk te gaan? met de bus - Nooit Is Not Selected

Q12 Hoe vaak ging de voorbije maand met de bus (als hoofdvervoermiddel) van/naar het werk?

- ❍ Alle gewerkte dagen (1)
- ❍ ongeveer 80% van de gewerkte dagen (2)
- ❍ ongeveer 50% van de gewerkte dagen (3)
- ❍ ongeveer 20% van de gewerkte dagen (4)
- ❍ minder dan 20% van de gewerkte dagen (5)

Answer If Van welke vervoersmiddelen maakt u gebruik om naar het werk te gaan? met de trein - Nooit Is Not Selected

Q13 Hoe vaak ging de voorbije maand met de trein (als hoofdvervoermiddel) van/naar het werk?

- ❍ Alle gewerkte dagen (1)
- ❍ ongeveer 80% van de gewerkte dagen (2)
- ❍ ongeveer 50% van de gewerkte dagen (3)
- ❍ ongeveer 20% van de gewerkte dagen (4)
- ❍ minder dan 20% van de gewerkte dagen (5)

Answer If Van welke vervoersmiddelen maakt u gebruik om naar het werk te gaan? met de wagen - Nooit Is Not Selected

Q14 Hoe vaak ging de voorbije maand met de wagen (als hoofdvervoermiddel) van/naar het werk?

- ❍ Alle gewerkte dagen (1)
- ❍ ongeveer 80% van de gewerkte dagen (2)
- ❍ ongeveer 50% van de gewerkte dagen (3)
- ❍ ongeveer 20% van de gewerkte dagen (4)
- ❍ minder dan 20% van de gewerkte dagen (5)

Answer If Van welke vervoersmiddelen maakt u gebruik om naar het werk te gaan? met andere vervoersmiddelen, namelijk: - Nooit Is Not Selected

Q15 Hoe vaak ging de voorbije maand met andere vervoersmiddelen (als hoofdvervoermiddel) van/naar het werk?

- ❍ Alle gewerkte dagen (1)
- ❍ ongeveer 80% van de gewerkte dagen (2)
- ❍ ongeveer 50% van de gewerkte dagen (3)
- ❍ ongeveer 20% van de gewerkte dagen (4)
- ❍ minder dan 20% van de gewerkte dagen (5)

DEEL 3: Omgevingsfactoren

Q16 Wat is uw thuisadres? (deze gegevens worden anoniem verwerkt)

straat: (1)

postcode + gemeente (2)

Q17 Wat is uw werkadres? (deze gegevens worden anoniem verwerkt)

straat: (1)

postcode + gemeente (2)

Q18 Welke vervoersmiddelen bezit uw huishouden?

	aantal (1)
Personenwagen (1)	
Fiets (2)	
Bromfiets/motor (3)	
Andere, namelijk (4)	

Answer If Welke vervoersmiddelen bezit uw huishouden? Personenwagen - aantal Is Not Equal to 0

Q19 Heeft u een personenwagen ter beschikking voor uw woon-werkverplaatsingen?

- ❍ Ik heb alle dagen een wagen ter mijn beschikking (1)
- ❍ Ik heb slechts enkele dagen per week een personenwagen ter mijn beschikking (2)
- ❍ Ik heb geen personenwagen ter mijn beschikking (bv. partner maakt steeds gebruik van de wagen) (3)

Answer If Welke vervoersmiddelen bezit uw huishouden? Fiets - aantal Is Not Equal to 0

Q20 Heeft u een fiets ter beschikking voor uw woon-werkverplaatsingen?

- ❍ Ik heb alle dagen een fiets ter mijn beschikking (1)
- ❍ Ik heb slechts enkele dagen per week een fiets ter mijn beschikking (2)
- ❍ Ik heb geen fiets ter mijn beschikking (bv. fiets is in slechte staat of niet geschikt voor woon-werkverplaatsingen) (3)

Answer If Welke vervoersmiddelen bezit uw huishouden? Bromfiets/motor - aantal Is Not Equal to 0

Q21 Heeft u een bromfiets/motor ter beschikking voor woon-werkverplaatsingen?

- ❍ Ik heb alle dagen een bromfiets/motor ter mijn beschikking (1)
- ❍ Ik heb slechts enkele dagen een bromfiets/motor ter mijn beschikking (2)
- ❍ Ik heb geen bromfiets/motor ter mijn beschikking (bv. partner maakt steeds gebruik van de brmfiets/motor) (3)

Answer If Welke vervoersmiddelen bezit uw huishouden? Andere, namelijk - aantal Is Not Equal to 0

Q22Heeft u andere vervoersmiddelen ter beschikking voor woon-werkverplaatsingen?

- ❍ Ik heb alle dagen een ander vervoersmiddel ter mijn beschikking (1)
- ❍ Ik heb slechts enkele dagen een ander vervoersmiddel ter mijn beschikking (2)
- ❍ Ik heb geen ander vervoersmiddel ter mijn beschikking (bv. partner maakt steeds gebruik van ander vervoersmiddel) (3)

Q23 Op welke afstand bevindt zich het dichtstbijzijnde relevante treinstation vanaf uw woning? (relevant = treinstation waar een nuttige treinverbinding passeert in kader van uw woon-werkverkeer)

- ❍ op minder dan 1 km (1)
- ❍ tussen de 1-3 km (2)
- ❍ tussen de 3-5 km (3)
- ❍ op meer dan 5 km (4)
- ❍ weet niet (5)

Q24 Op welke afstand bevindt zich de dichtstbijzijnde relevante bushalte vanaf uw woning? (relevant = bushalte waar nuttige buslijn passeert in kader van uw woon-werkverkeer)

- ❍ op minder dan 200 m (1)
- ❍ tussen de 200-500 m (2)
- ❍ tussen de 500-750 m (3)
- ❍ op meer dan 750 m (4)
- ❍ weet niet (5)

Q25 Hoeveel minuten schat u dat een enkele reis naar uw werk duurt?

_____ Te voet (1)

_____ Met de fiets (2)

_____ Met de bus (3)

_____ Met de trein (4)

_____ Met de wagen (5)

DEEL 4: Kennisfactoren

Q26 Welke fiscale voordelen kent u?

- ❑ Fietsvergoeding (1)
- ❑ Terugbetaling van vervoersabonnementen trein/bus (2)
- ❑ Niet belastbare verplaatsingsvergoeding (3)
- ❑ Bedrijfswagen/bedrijfsfiets/fietsattributen (4)
- ❑ Andere, namelijk (5) _____
- ❑ Ik ken er geen (6)

Q27 Welke fiscale voordelen biedt uw werkgever aan?

- ❑ Fietsvergoeding (1)
- ❑ Terugbetaling van vervoersabonnementen trein/bus (2)
- ❑ Niet belastbare verplaatsingsvergoeding (3)
- ❑ Bedrijfswagen/bedrijfsfiets/fietsattributen (4)
- ❑ Andere, namelijk (5) _____
- ❑ Mijn werkgever biedt geen fiscale voordelen aan (6)

Q28 Welke routeplanners kent u?

- ❑ Routeplanner van De Lijn (1)
- ❑ Routeplanner van de NMBS (2)
- ❑ NMBS Railtime (3)
- ❑ Google Maps (4)
- ❑ Routenet routeplanner (5)
- ❑ Andere, namelijk (6) _____

Q29 Welke routeplanners gebruikt u?

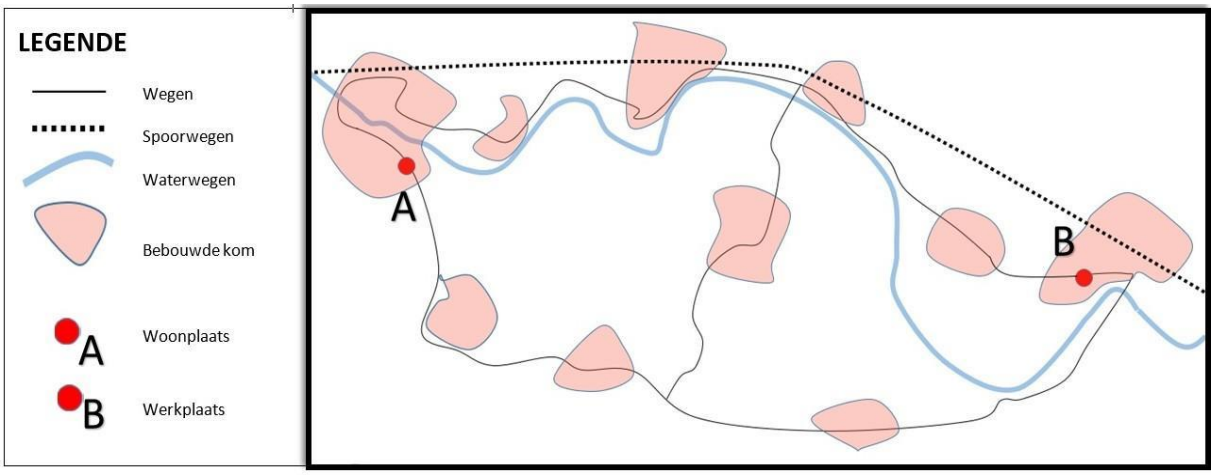
- ❑ Routeplanner van De Lijn (1)
- ❑ Routeplanner van de NMBS (2)
- ❑ NMBS Railtime (3)
- ❑ Google Maps (4)
- ❑ Routenet routeplanner (5)
- ❑ Andere, namelijk (6) _____

DEEL 5: Fictieve situatie

Hieronder wordt een fictieve woon-werksituatie voorgesteld. Deze situatie is gebaseerd op de Vlaamse ruimtelijke context en realistische waarden m.b.t. woon-werkafstanden en reistijden. Gelieve deze omschrijving aandachtig te lezen zodat u zich zo goed mogelijk in de situatie kan inleven.

U woont op locatie A en werkt op locatie B (zie onderstaande kaart). U start uw werkdag om 8u30 ’s morgens en beëindigt uw werkdag om 17u. Uw woning bevindt zich in vogelvlucht op 12 kilometer afstand van uw werkplaats. De reisweg verloopt voornamelijk langs gewestwegen (N-wegen) waar je afwisselend 70, 50 en 30 km/u mag rijden. Door de ochtendspits is deze reisweg filegevoelig. Met de fiets kan je deels dit traject vermijden

via de fietsroute langs de rivier, maar met een omrijfactor. Er is ook een mogelijkheid om met openbaar vervoer op het werk te geraken.



Q30 Indien u zich in deze bovenstaande situatie zou bevinden, welke stelling past het best bij u?

- ❍ Ik kom sowieso met de wagen. (1)
- ❍ Ik kom met de wagen, maar overweeg om duurzame vervoersmiddelen te gebruiken. (2)
- ❍ Ik kom sowieso met duurzame vervoersmiddelen naar het werk. (3)

DEEL 6: Stated preference keuze-onderzoek

In het volgende deel van de enquête worden u 4 keer twee verschillende reisadviezen gepresenteerd. Elk reisadvies zal u op een andere manier informeren over motivatiefactoren, routebeschrijving van alternatieve vervoerswijzen en zal u een gedragsveranderingsplan voorstellen.

U dient telkens deze reisadviezen te lezen en nadien moet u een keuze maken tussen de twee alternatieven op basis van uw voorkeur. Er zijn geen goede of foute antwoorden.

Het is belangrijk dat u antwoordt vanuit de eerder geschetste fictieve situatie. Deze fictieve situatie wordt boven elke vraag herhaald. In totaal krijgt u 4 keuzetests.

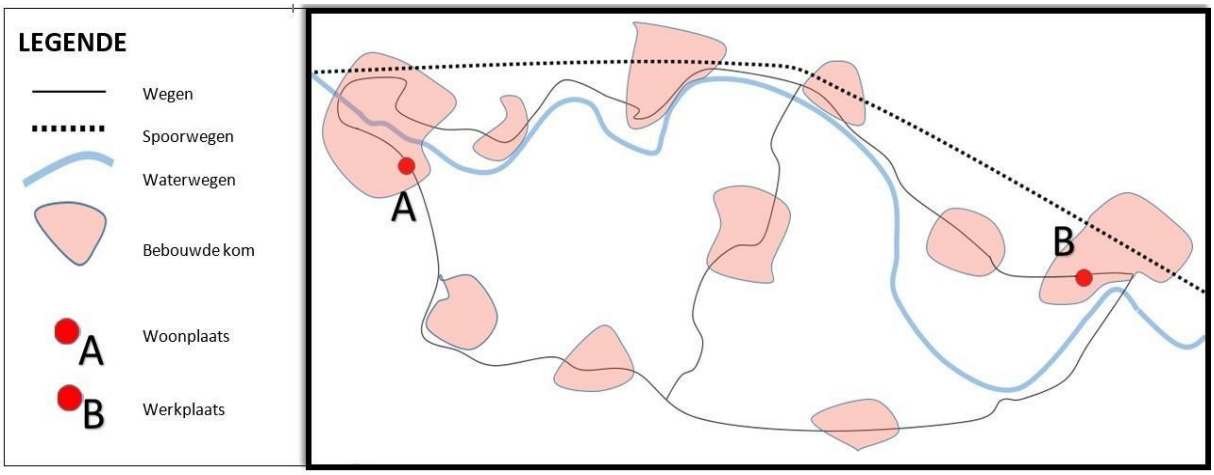
Neem gerust uw tijd om telkens beide alternatieven met elkaar te vergelijken.

Q31 Om u één van de keuzesituaties aan te bieden zouden we graag willen weten in welke maand u bent geboren.

- ❍ januari (1)
- ❍ februari (2)
- ❍ maart (3)
- ❍ april (4)
- ❍ mei (5)
- ❍ juni (6)
- ❍ juli (7)
- ❍ augustus (8)
- ❍ september (9)
- ❍ oktober (10)
- ❍ november (11)
- ❍ december (12)

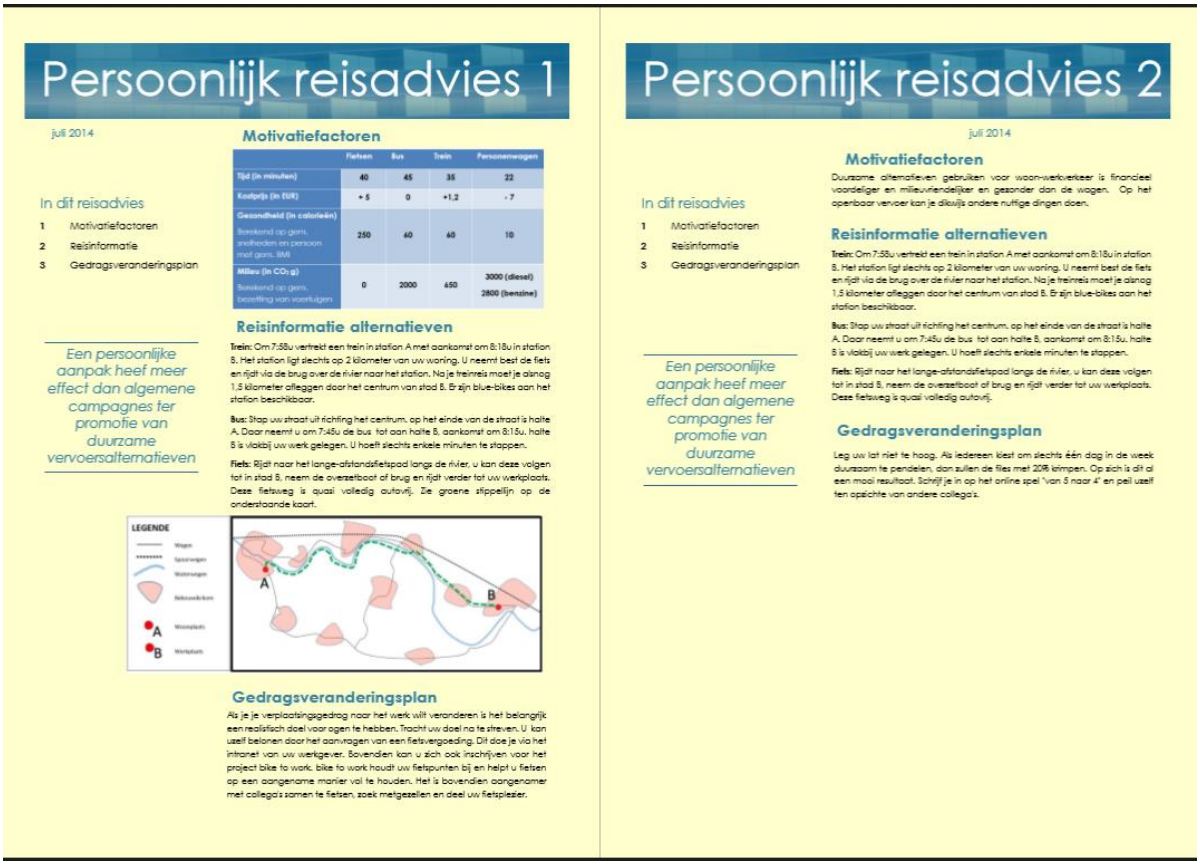
Answer If Om u één van de keuzesituaties aan te bieden zouden we graag willen weten in welke maand u bent geboren. januari Is Selected Or Om u één van de keuzesituaties aan te bieden zouden we graag willen weten in welke maand u bent geboren. februari Is Selected

Herhaling fictieve situatie: U woont op locatie A en werkt op locatie B (zie onderstaande kaart). U start uw werkdag om 8u30 ’s morgens en beëindigt uw werkdag om 17u. Uw woning bevindt zich in vogelvlucht op 12 kilometer afstand van uw werkplaats. De reisweg verloopt voornamelijk langs gewestwegen (N-wegen) waar je afwisselend 70, 50 en 30 km/u mag rijden. Door de ochtendspits is deze reisweg filegevoelig. Met de fiets kan je deels dit traject vermijden via de fietsroute langs de rivier, maar met een omrijfactor. Er is ook een mogelijkheid om met openbaar vervoer op het werk te geraken.



Answer If Om u één van de keuzesituaties aan te bieden zouden we graag willen weten in welke maand u bent geboren. januari Is Selected Or Om u één van de keuzesituaties aan te bieden zouden we graag willen weten in welke maand u bent geboren. februari Is Selected

Hieronder vindt u een link naar twee reisadviezen. Klik op de link en de reisadviezen worden als pdf-document geopend. Gelieve deze reisadviezen aandachtig door te lezen en ga vervolgens verder met het invullen van de enquête in dit venster.



Persoonlijk reisadvies 1

juli 2014

In dit reisadvies

1 Motivatiefactoren
2 Reisinformatie
3 Gedragsveranderingsplan

Een persoonlijke aanpak heef meer effect dan algemene campagnes ter promotie van duurzame vervoersalternatieven

Motivatiefactoren

	Fietsen	Bus	Trein	Personenwagen
Tijd (in minuten)	40	45	35	22
Kostprijs (in EUR)	+ 5	0	+1,2	- 7
Gezondheid (in calorieën) Berekend op gem. snelheden en persoon met gem. BMI	250	60	60	10
Milieu (in CO_2 g) Berekend op gem. bezetting van voertuigen	0	2000	650	3000 (diesel) 2800 (benzine)

Reisinformatie alternatieven

Trein: Om 7:58u vertrekt een trein in station A met aankomst om 8:18u in station B. Het station ligt slechts op 2 kilometer van uw woning. U neemt best de fiets en rijdt via de brug over de rivier naar het station. Na je treinreis moet je alsnog 1,5 kilometer afleggen door het centrum van stad B. Er zijn blue-bikes aan het station beschikbaar.

Bus: Stap uw straat uit richting het centrum, op het einde van de straat is halte A. Daar neemt u om 7:45u de bus tot aan halte B, aankomst om 8:15u, halte 5 is vlakbij uw werk gelegen. U hoeft slechts enkele minuten te stappen.

Fiets: Rijdt naar het lange-afstandsfietspad langs de rivier, u kan deze volgen tot in stad B, neem de overzetboot of brug en rijdt verder tot uw werkplaats. Deze fietsweg is quasi volledig autovrij. Zie groene stippellijn op de onderstaande kaart.

Gedragsveranderingsplan

Als je je verplaatsingsgedrag naar het werk wilt veranderen is het belangrijk een realistisch doel voor ogen te hebben. Tracht uw doel na te streven. U kan uzelf belonen door het aanvragen van een fietsvergoeding. Dit doe je via het intranet van uw werkgever. Bovendien kan u zich ook inschrijven voor het project bike to work. bike to work houdt uw fietspunten bij en helpt u fietsen op een aangename manier vol te houden. Het is bovendien aangenamer met collega's samen te fietsen, zoek metgezellen en deel uw fietsplezier.

Persoonlijk reisadvies 2

juli 2014

In dit reisadvies

1 Motivatiefactoren
2 Reisinformatie
3 Gedragsveranderingsplan

Een persoonlijke aanpak heef meer effect dan algemene campagnes ter promotie van duurzame vervoersalternatieven

Motivatiefactoren

Duurzame alternatieven gebruiken voor woon-werkverkeer is financieel voordeliger en milieuvriendelijker en gezonder dan de wagen. Op het openbaar vervoer kan je dikwijls andere nuttige dingen doen.

Reisinformatie alternatieven

Trein: Om 7:58u vertrekt een trein in station A met aankomst om 8:18u in station B. Het station ligt slechts op 2 kilometer van uw woning. U neemt best de fiets en rijdt via de brug over de rivier naar het station. Na je treinreis moet je alsnog 1,5 kilometer afleggen door het centrum van stad B. Er zijn blue-bikes aan het station beschikbaar.

Bus: Stap uw straat uit richting het centrum, op het einde van de straat is halte A. Daar neemt u om 7:45u de bus tot aan halte B, aankomst om 8:15u, halte 5 is vlakbij uw werk gelegen. U hoeft slechts enkele minuten te stappen.

Fiets: Rijdt naar het lange-afstandsfietspad langs de rivier, u kan deze volgen tot in stad B, neem de overzetboot of brug en rijdt verder tot uw werkplaats. Deze fietsweg is quasi volledig autovrij.

Gedragsveranderingsplan

Leg uw lat niet te hoog. Als iedereen klest om slechts één dag in de week duurzaam te pendelen, dan zullen de files met 20% krimpen. Op zich is dit al een mooi resultaat. Schrijf je in op het online spel "van 5 naar 4" en peil uzelf ten opzichte van andere collega's.

Answer If Om u één van de keuzesituaties aan te bieden zouden we graag willen weten in welke maand u bent geboren. januari Is Selected Or Om u één van de keuzesituaties aan te bieden zouden we graag willen weten in welke maand u bent geboren. februari Is Selected

Q32 Welke van de twee bovenstaande reisadviezen overtuigt u het meest om alternatieve vervoerswijzen te gebruiken voor woon-werkverplaatsingen? (Let op: u moet u inleven in de omschreven fictieve situatie)

- ❍ Persoonlijk reisadvies 1 (1)
- ❍ Persoonlijk reisadvies 2 (2)

Answer If Om u één van de keuzesituaties aan te bieden zouden we graag willen weten in welke maand u bent geboren. januari Is Selected Or Om u één van de keuzesituaties aan te bieden zouden we graag willen weten in welke maand u bent geboren. februari Is Selected

Herhaling fictieve situatie

Answer If Om u één van de keuzesituaties aan te bieden zouden we graag willen weten in welke maand u bent geboren. januari Is Selected Or Om u één van de keuzesituaties aan te bieden zouden we graag willen weten in welke maand u bent geboren. februari Is Selected

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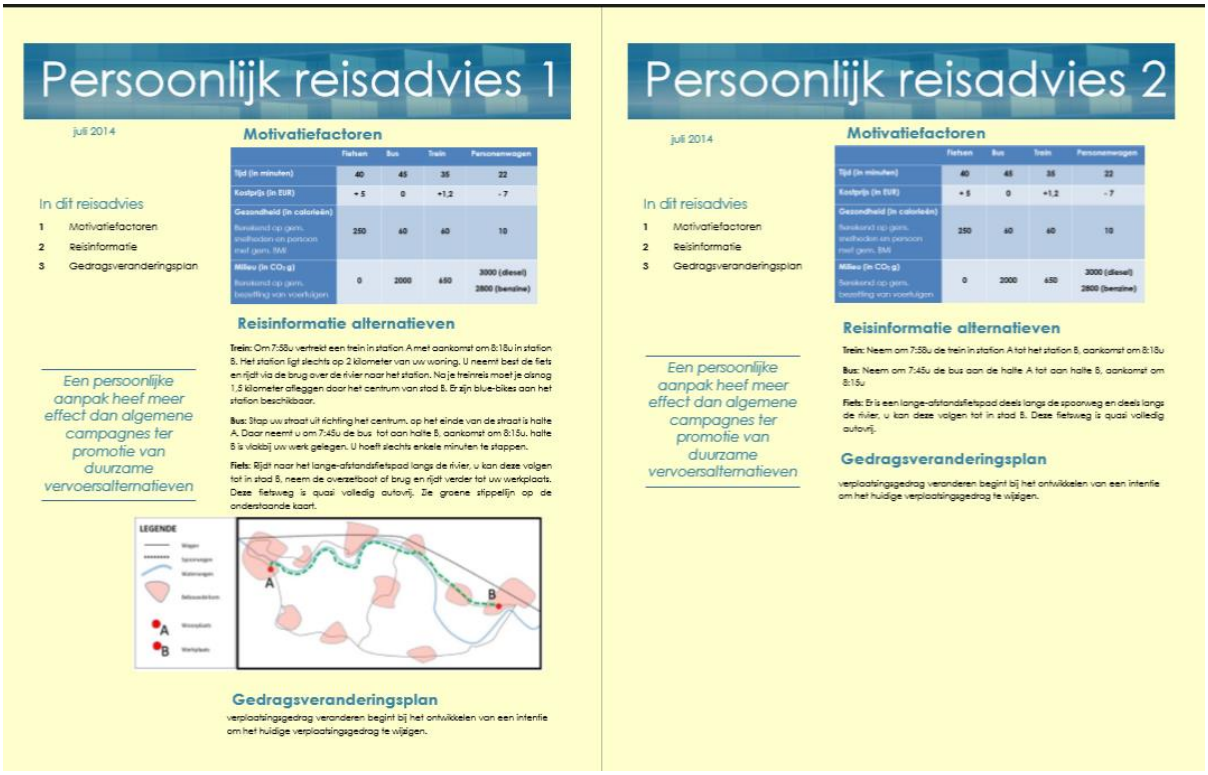

Persoonlijk reisadvies 1

juli 2014

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2 Reisinformatie
3 Gedragsveranderingsplan

Een persoonlijke aanpak heef meer effect dan algemene campagnes ter promotie van duurzame vervoersalternatieven

Motivatiefactoren

	Fietsen	Bus	Trein	Personenwagen
Tijd (in minuten)	40	45	35	22
Kostprijs (in EUR)	+ 5	0	+1,2	- 7
Gezondheid (in calorieën) Berekend op gem. snelheden en persoon met gem. BMI	250	60	60	10
Milieu (in CO_2 g) Berekend op gem. bezetting van voertuigen	0	2000	650	3000 (diesel) 2800 (benzine)

Reisinformatie alternatieven

Trein: Om 7:58u vertrekt een trein in station A met aankomst om 8:18u in station B. Het station ligt slechts op 2 kilometer van uw woning. U neemt best de fiets en rijdt via de brug over de rivier naar het station. Na je treinreis moet je alsnog 1,5 kilometer afleggen door het centrum van stad B. Er zijn blue-bikes aan het station beschikbaar.

Bus: Stap uw straat uit richting het centrum, op het einde van de straat is halte A. Daar neemt u om 7:45u de bus tot aan halte B, aankomst om 8:15u. halte B is vlakbij uw werk gelegen. U hoeft slechts enkele minuten te stappen.

Fiets: Rijdt naar het lange-afstandsfietspad langs de rivier, u kan deze volgen tot in stad B, neem de overzetboot of brug en rijdt verder tot uw werkplaats. Deze fietsweg is quasi volledig autovrij. Zie groene stippellijn op de onderstaande kaart.

Gedragsveranderingsplan

verplaatsingsgedrag veranderen begint bij het ontwikkelen van een intentie om het huidige verplaatsingsgedrag te wijzigen.

Persoonlijk reisadvies 2

juli 2014

In dit reisadvies
1 Motivatiefactoren
2 Reisinformatie
3 Gedragsveranderingsplan

Een persoonlijke aanpak heef meer effect dan algemene campagnes ter promotie van duurzame vervoersalternatieven

Motivatiefactoren

	Fietsen	Bus	Trein	Personenwagen
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Milieu (in CO_2 g) Berekend op gem. bezetting van voertuigen	0	2000	650	3000 (diesel) 2800 (benzine)

Reisinformatie alternatieven

Trein: Neem om 7:58u de trein in station A tot het station B, aankomst om 8:18u

Bus: Neem om 7:45u de bus aan de halte A tot aan halte B, aankomst om 8:15u

Fiets: Er is een lange-afstandsfietspad deels langs de spoorweg en deels langs de rivier, u kan deze volgen tot in stad B. Deze fietsweg is quasi volledig autovrij.

Gedragsveranderingsplan

verplaatsingsgedrag veranderen begint bij het ontwikkelen van een intentie om het huidige verplaatsingsgedrag te wijzigen.

Answer If Om u één van de keuzesituaties aan te bieden zouden we graag willen weten in welke maand u bent geboren. januari Is Selected Or Om u één van de keuzesituaties aan te bieden zouden we graag willen weten in welke maand u bent geboren. februari Is Selected

Q33 Welke van de twee bovenstaande reisadviezen overtuigt u het meest om alternatieve vervoerswijzen te gebruiken voor woon-werkverplaatsingen? (Let op: u moet u inleven in de omschreven fictieve situatie)

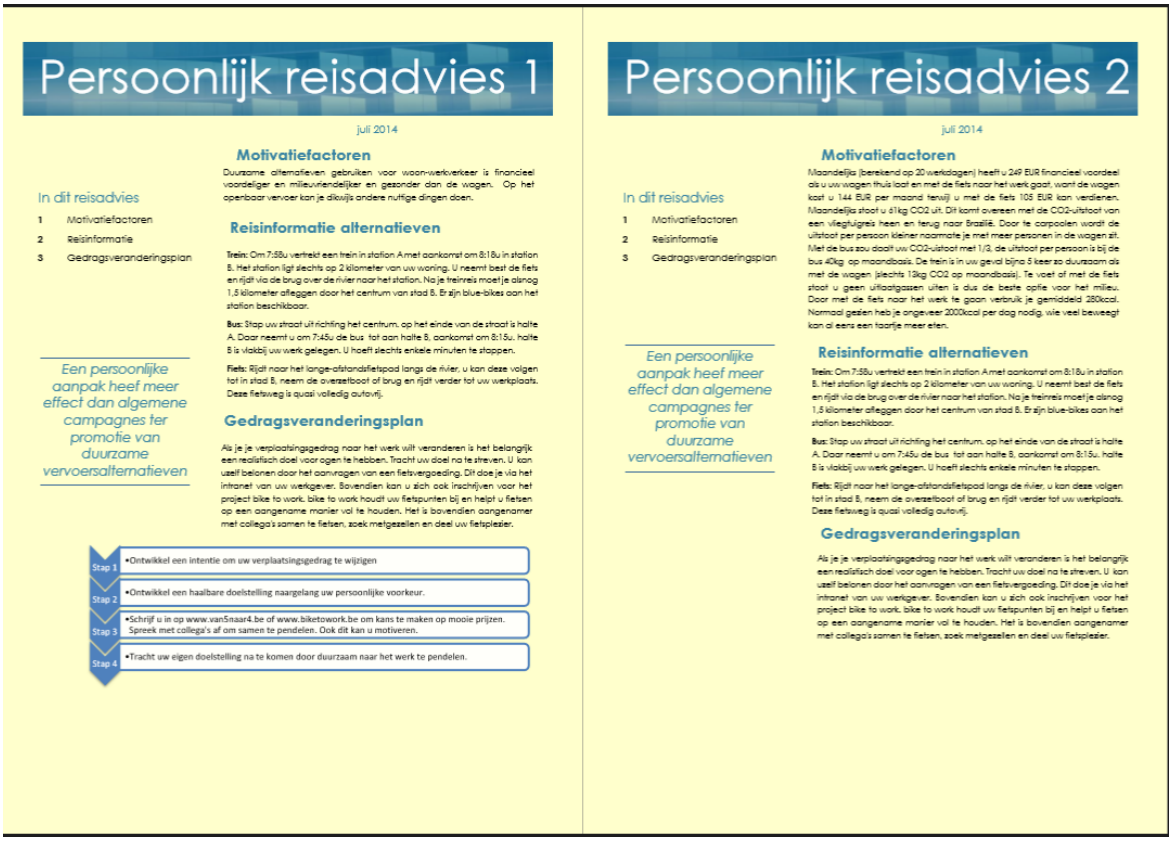
- ❍ Persoonlijk reisadvies 1 (1)
- ❍ Persoonlijk reisadvies 2 (2)

Answer If Om u één van de keuzesituaties aan te bieden zouden we graag willen weten in welke maand u bent geboren. januari Is Selected Or Om u één van de keuzesituaties aan te bieden zouden we graag willen weten in welke maand u bent geboren. februari Is Selected

Herhaling fictieve situatie

Answer If Om u één van de keuzesituaties aan te bieden zouden we graag willen weten in welke maand u bent geboren. januari Is Selected Or Om u één van de keuzesituaties aan te bieden zouden we graag willen weten in welke maand u bent geboren. februari Is Selected

Hieronder vindt u een link naar twee reisadviezen. Klik op de link en de reisadviezen worden als pdf-document geopend. Gelieve deze reisadviezen aandachtig door te lezen en ga vervolgens verder met het invullen van de enquête in dit venster.



Persoonlijk reisadvies 1

juli 2014

In dit reisadvies

1 Motivatiefactoren
2 Reisinformatie
3 Gedragsveranderingsplan

Een persoonlijke aanpak heeft meer effect dan algemene campagnes ter promotie van duurzame vervoersalternatieven

Motivatiefactoren

Duurzame alternatieven gebruiken voor woon-werkverkeer is financieel voordeliger en milieuvriendelijker en gezonder dan de wagen. Op het openbaar vervoer kan je dikwijls andere nuttige dingen doen.

Reisinformatie alternatieven

Trein: Om 7:58u vertrekt een trein in station A met aankomst om 8:18u in station B. Het station ligt slechts op 2 kilometer van uw woning. U neemt best de fiets en rijdt via de brug over de rivier naar het station. Na je treinreis moet je alsnog 1,5 kilometer afleggen door het centrum van stad B. Er zijn blue-bikes aan het station beschikbaar.

Bus: Stap uw straat uit richting het centrum, op het einde van de straat is halte A. Daar neemt u om 7:45u de bus tot aan halte B, aankomst om 8:15u. halte B is vlakbij uw werk gelegen. U hoeft slechts enkele minuten te stappen.

Fiets: Rijdt naar het lange-afstandsfietspad langs de rivier, u kan deze volgen tot in stad B, neem de overzetboot of brug en rijdt verder tot uw werkplaats. Deze fietsweg is quasi volledig autovrij.

Gedragsveranderingsplan

Als je je verplaatsingsgedrag naar het werk wilt veranderen is het belangrijk een realistisch doel voor ogen te hebben. Tracht uw doel na te streven. U kan uzelf belonen door het aanvragen van een fietsvergoeding. Dit doe je via het intranet van uw werkgever. Bovendien kan u zich ook inschrijven voor het project bike to work. bike to work houdt uw fietspunten bij en helpt u fietsen op een aangename manier vol te houden. Het is bovendien aangenamer met collega's samen te fietsen, zoek metgezellen en deel uw fietsplezier.

Stap 1 •Ontwikkel een intentie om uw verplaatsingsgedrag te wijzigen
Stap 2 •Ontwikkel een haalbare doelstelling naargelang uw persoonlijke voorkeur.
Stap 3 •Schrijf u in op www.van5naar4.be of www.biketowork.be om kans te maken op mooie prijzen. Spreek met collega's af om samen te pendelen. Ook dit kan u motiveren.
Stap 4 •Tracht uw eigen doelstelling na te komen door duurzaam naar het werk te pendelen.

Persoonlijk reisadvies 2

juli 2014

In dit reisadvies

1 Motivatiefactoren
2 Reisinformatie
3 Gedragsveranderingsplan

Een persoonlijke aanpak heeft meer effect dan algemene campagnes ter promotie van duurzame vervoersalternatieven

Motivatiefactoren

Maandelijks (berekend op 20 werkdagen) heeft u 249 EUR financieel voordeel als u uw wagen thuis laat en met de fiets naar het werk gaat, want de wagen kost u 144 EUR per maand terwijl u met de fiets 105 EUR kan verdienen. Maandelijks stoot u 61kg CO2 uit. Dit komt overeen met de CO2-uitstoot van een vliegtuigreis heen en terug naar Brazilië. Door te carpoolen wordt de uitstoot per persoon kleiner naarmate je met meer personen in de wagen zit. Met de bus zou daalt uw CO2-uitstoot met 1/3, de uitstoot per persoon is bij de bus 40kg op maandbasis. De trein is in uw geval bijna 5 keer zo duurzaam als met de wagen (slechts 13kg CO2 op maandbasis). Te voet of met de fiets stoot u geen uitlaatgassen uiten is dus de beste optie voor het milieu. Door met de fiets naar het werk te gaan verbruik je gemiddeld 280kcal. Normaal gesien heb je ongeveer 2000kcal per dag nodig, wie veel beweegt kan al eens een taartje meer eten.

Reisinformatie alternatieven

Trein: Om 7:58u vertrekt een trein in station A met aankomst om 8:18u in station B. Het station ligt slechts op 2 kilometer van uw woning. U neemt best de fiets en rijdt via de brug over de rivier naar het station. Na je treinreis moet je alsnog 1,5 kilometer afleggen door het centrum van stad B. Er zijn blue-bikes aan het station beschikbaar.

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Gedragsveranderingsplan

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Q34 Welke van de twee bovenstaande reisadviezen overtuigt u het meest om alternatieve vervoerswijzen te gebruiken voor woon-werkverplaatsingen? (Let op: u moet u inleven in de omschreven fictieve situatie)

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Persoonlijk reisadvies 1

juli 2014

In dit reisadvies
1 Motivatiefactoren
2 Reisinformatie
3 Gedragsveranderingsplan

Een persoonlijke aanpak heeft meer effect dan algemene campagnes ter promotie van duurzame vervoersalternatieven

Motivatiefactoren

	Fietsen	Bus	Trein	Personenwagen
Tijd (in minuten)	40	45	35	22
Kostprijs (in EUR)	+5	0	+1,2	-7
Gezondheid (in calorieën) (berekend op gem. snelheden en persoon met gem. BMI	250	60	60	10
Milieu (in CO_2 g) (berekend op gem. bezetting van voertuigen	0	2000	650	3000 (diesel) 2800 (benzine)

Reisinformatie alternatieven

Trein: Om 7:58u vertrekt een trein in station A met aankomst om 8:18u in station B. Het station ligt slechts op 2 kilometer van uw woning. U neemt best de fiets en rijdt via de brug over de rivier naar het station. Na je treinreis moet je alsnog 1,5 kilometer afleggen door het centrum van stad B. Er zijn blue-bikes aan het station beschikbaar.

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Gedragsveranderingsplan

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Persoonlijk reisadvies 2

juli 2014

In dit reisadvies
1 Motivatiefactoren
2 Reisinformatie
3 Gedragsveranderingsplan

Een persoonlijke aanpak heeft meer effect dan algemene campagnes ter promotie van duurzame vervoersalternatieven

Motivatiefactoren

Maandelijks (berekend op 20 werkdagen) heeft u 249 EUR financieel voordeel als u uw wagen thuis laat en met de fiets naar het werk gaat, want de wagen kost u 144 EUR per maand terwijl u met de fiets 105 EUR kan verdienen. Maandelijks staat u 61kg CO_2 uit. Dit komt overeen met de CO_2-uitstoot van een vliegtuigreis heen en terug naar Brasilië. Door te carpoolen wordt de uitstoot per persoon kleiner naarmate je met meer personen in de wagen zit. Met de bus zou daalt uw CO_2-uitstoot met 1/3, de uitstoot per persoon is bij de bus 40kg op maandbasis. De trein is in uw geval bijna 5 keer zo duurzaam als met de wagen (slechts 12kg CO_2 op maandbasis). Te voet of met de fiets staat u geen uitlaatgassen uiten is dus de beste optie voor het milieu. Door met de fiets naar het werk te gaan verbruik je gemiddeld 280kcal. Normaal gezien heb je ongeveer 2000kcal per dag nodig, wie veel beweegt kan al eens een taartje meer eten.

Reisinformatie alternatieven

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Fiets: Rijdt naar het lange-afstandsfietspad langs de rivier, u kan deze volgen tot in stad B, neem de overzetboot of brug en rijdt verder tot uw werkplaats. Deze fietsweg is quasi volledig autovrij. De groene stippellijn op de onderstaande kaart.

Gedragsveranderingsplan

Leg uw lat niet te hoog. Als iedereen kiest om slechts één dag in de week duurzaam te pendelen, dan zullen de files met 20% krimpen. Op zich is dit al een mooi resultaat. Schrijf je in op het online spel "van 5 naar 4" en peil uzelf ten opzichte van andere collega's.

Answer If Om u één van de keuzesituaties aan te bieden zouden we graag willen weten in welke maand u bent geboren. januari Is Selected Or Om u één van de keuzesituaties aan te bieden zouden we graag willen weten in welke maand u bent geboren. februari Is Selected

Q35 Welke van de twee bovenstaande reisadviezen overtuigt u het meest om alternatieve vervoerswijzen te gebruiken voor woon-werkverplaatsingen? (Let op: u moet u inleven in de omschreven fictieve situatie)

- ❍ Persoonlijk reisadvies 1 (1)
- ❍ Persoonlijk reisadvies 2 (2)

De vragen 32, 33, 34 en 35 worden per respondentengroep telkens herhaald, maar met verschillende reisadviezen naargelang de maand waarin men verjaart.

DEEL 7: Evaluatievragen

Q36 In welke mate van nauwkeurigheid heeft u de reisadviezen doorgenomen?

- ❍ vluchtig (1)
- ❍ normaal (2)
- ❍ nauwkeurig (3)
- ❍ zeer nauwkeurig (4)

Q37 In welke mate vindt u de volgende aspecten van persoonlijk reisadvies belangrijk?

_____ Motivatiefactoren (1)

_____ Reisadvies alternatieven (2)

_____ Gedragsveranderingsplan (3)

Q38 In welke mate vindt u onderstaande motivatiefactoren belangrijk? Sorteer deze in volgorde van belangrijkheid.

_____ Reiskost (1)

_____ Reistijd (2)

_____ Milieu (3)

_____ Gezondheid (4)

Q39 Hoe worden volgens u de motivatiefactoren best gepresenteerd in het persoonlijk reisadvies? Rangschik de verschillende mogelijkheden naar uw voorkeur.

_____ Kort en bondige omschrijving van de motivatiefactoren, zonder gedetailleerde informatie (1)

_____ Gedetailleerde informatie m.b.t. motivatiefactoren overzichtelijk weergegeven in tabelvorm (2)

_____ Gedetailleerde omschrijving van de motivatiefactoren (3)

_____ Gedetailleerde omschrijving van de motivatiefactoren met sensibiliserende afbeeldingen (4)

Q40 Hoe wordt volgens u de reisinformatie van alternatieve vervoerswijzen best gepresenteerd in het persoonlijk reisadvies? Rangschik de verschillende mogelijkheden naar uw voorkeur.

_____ Verwijzing naar de verschillende bestaande routeplanners (1)

_____ Kort en bondige informatie met betrekking tot de bus- en treinuren of de fietsroute (2)

_____ Uitgebreide informatie met betrekking tot de volledige reisroute, inclusief voor- en natransport van de bus of trein (3)

_____ Uitgebreide informatie met betrekking tot de volledige reisroute met bijhorende plan (4)

Q41 Hoe wordt volgens u het gedragsveranderingsplan best gepresenteerd in het persoonlijk reisadvies? Rangschik de verschillende mogelijkheden naar uw voorkeur.

_____ Statement (1)

_____ Beknopt veranderingsplan met link naar een online spel waar u zichzelf kan meten t.o.v. collega's (2)

_____ Uitgebreid veranderingsplan met link naar een online toepassing waar u kan sparen voor mooie prijzen (3)

_____ Uitgebreid veranderingsplan in schema (4)

Beste respondent, U hebt de enquête volledig afgerond. Ik dank u hartelijk voor de medewerking aan mijn onderzoek.

Indien u op de hoogte wenst gehouden te worden van de resultaten kan u hieronder vrijblijvend uw e-mailadres achterlaten.

Om uw antwoorden finaal in te dienen moet u hieronder nogmaals op de knop >> duwen.

Vriendelijke groetjes, Jessie De Laender

Auteursrechtelijke overeenkomst

Ik/wij verlenen het wereldwijde auteursrecht voor de ingediende eindverhandeling:
Onderzoek invloed van persoonlijk reisadvies op woon-werkverkeer

Richting: **master in de mobiliteitswetenschappen-mobiliteitsmanagement**
Jaar: **2015**

in alle mogelijke mediaformaten, - bestaande en in de toekomst te ontwikkelen - , aan de Universiteit Hasselt.

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Voor akkoord,

De Laender, Jessie

Datum: **1/06/2015**